UNIVERSAL
LIBRARY

OU_152387

UNIVERSAL
LIBRARY

OSMANIA UNIVERSITY LIBRARY
Call No: 372.1 L47C Acc No. G9984
Author : Lee Murray. J
Title : Child & his Curriculum

Osmania University Library

Osmania University Library

Call No. 372.1 L47C Accession No. G998

Author Lee Murray. J

Title Child & his curricula

This book should be returned on or before the date last marked below.

The Child and His Curriculum

BY

J. MURRAY LEE

DEAN, SCHOOL OF EDUCATION
THE STATE COLLEGE OF WASHINGTON

AND

DORRIS MAY LEE

CO-AUTHOR OF "LEARNING TO READ THROUGH EXPERIENCE"

SECOND *EDITION*

New York

Appleton-Century-Crofts, Inc.

COPYRIGHT, 1950, BY

APPLETON-CENTURY-CROFTS, INC.

All rights reserved. This book, or parts thereof, must not be reproduced in any form without permission of the publisher.

4129

Copyright 1940, by D. Appleton-Century Company, Inc.

MANUFACTURED IN THE UNITED STATES OF AMERICA

Preface

This book was written for the teacher who is interested in the child of elementary-school age and in the curriculum best suited to that child. This teacher may be in a large city school or a one-room rural school; one with many years of experience or one who is in training; one who is planning only for a class or one who is sharing, as a member of a curriculum committee, the responsibility for planning for many; one who is reading alone or one who is reading and thinking as a member of a group or class; one who is directing the work of children or one who is guiding others in their work with children.

The teacher is no longer regimented to the teaching of a prescribed course of study and a given textbook. She has become the guide to the learning experiences of children; she has become the "director of curriculum" in her classroom. The traditional program required of the teacher primarily a knowledge of the subject-matter she was to teach. The newer program requires much more. It requires a much broader knowledge of children, the way they grow, their interests, their emotions, and the way they learn. It requires an understanding of profitable learning experiences and the way to organize and present them. It requires that the teacher utilize all of these factors and forces in providing an educational program.

This book is directed toward helping the teacher meet the challenges of the newer program. Chapter 1 considers the implications of the "wider goals" of elementary education. Then, unlike most books dealing with the curriculum, there are several chapters devoted to "the child," to obtaining a more complete understanding of the way children grow and learn, the way their personalities and interests develop. These chapters are necessary if curriculum planning is to be based upon an understanding of the child.[1] Part II deals with the various areas of the curriculum and the "experiences" therein.[2]

In dealing with the various areas we were faced with a number of alternatives. We could summarize all the available research in a subject field, or we could show what this school or that school was trying to do,

[1] When the volume is used for a year's course, Part I constitutes the basis for an extended study of the field. If the volume is used for a one semester's course devoted to the curriculum, a reading of Part I supplies an excellent foundation for the consideration of the remainder of the book.

[2] Where teacher-training institutions are reorganizing their offerings on a more functional basis this organization, which combines a study of the child and the curriculum, will be especially valuable.

or we could make a very philosophical presentation. We chose none of these alternatives. We recognize that the negative approach to the more modern education, that is, that the new is not what the old was, has passed. Instead, many schools are attempting to build constructively by carefully considering the implications of the philosophy and psychology underlying the program. We felt that the greatest contribution to this attempt was to interpret each area in its relation to the total program, to present or reinterpret research which has implications for these evolving programs, and to show classroom possibilities and practices that are consistent with the general philosophy of this book. We have attempted to include only material which may be of definite and practical value to the teacher.

That our efforts were somewhat successful in selecting material of special value to the teacher was indicated by the wide reception which the first edition of this volume, published in 1940, had. In preparing the second edition we retained the same purposes. We made a thorough canvass of the developments during the last ten years. This entailed the consideration of a vast amount of material. We examined all of the recent research studies in child development and the elementary curriculum, collected courses of study which state departments recommended as outstanding in their state, analyzed text bulletins and reports, utilized many letters describing modern practices in the schools, and had conferences with many school people. The basic structure of the volume remains the same; but a thorough re-writing incorporates newer ideas, newer research, and newer examples of practice. Each chapter has been thoroughly revised in the light of modern developments. Chapter 3 has been re-titled, and the great amount of research which has been done in the field of emotional and social development has been incorporated.

Bibliographies for each chapter have been carefully selected and annotated, and in the main emphasize recent material. They make possible a more detailed consideration of each area. The "Suggested Learning Experiences" for each chapter provide bases for study and discussions which should further develop an understanding of the elementary program. It is hoped that this second edition will result in a continued careful consideration of "The Child and His Curriculum."

A word probably is in order to those who feel that the relation of society to the school has been neglected because a chapter has not been devoted to it. It has not been neglected, for the implications have been developed within each of the areas. This phase of the curriculum problem has also received such excellent attention that extended discussion here would be needless repetition.

We were indebted in the first edition to William H. Burton and A. S. Barr for their critical reading of the entire manuscript and their many valuable suggestions for revisions. Certain chapters were definitely improved by utilizing the suggestions of Janet Millar, J. C. Parker, Ella

Quante, Clarence E. Ragsdale, Matthew H. Willing, and J. W. Wrightstone, who read parts of the manuscript. A number of people made direct contributions to the manuscript: Bernard A. Anderson and Frank Vuchetich, who contributed to Table XVI; Carrie Rasmussen, who wrote the section on speech in Chapter 10; Mary Campbell, Hilda Cavanaugh, and Roger Guiles, who assisted with the bibliographical work of Chapters 9, 10 and 11; and Gladys Andrews and Marion Bozenhard, who furnished material on rhythms and dancing.

Our indebtedness for the second edition is nearly limitless. We appreciate the many comments received on the first edition which were utilized in planning the second edition. We cannot begin to express our appreciation to William H. Burton for his careful reading of the entire manuscript. Specifically we are indebted to Max M. Levin for his reading of the manuscript for Chapter 3; to Pauline Walsh Olsen for doing most of the revison of Chapter 8; to W. Linwood Chase of Boston University and to Chester Babcock of the Seattle Schools for their many suggestions on improving Chapter 9; to Glenn Blough of the United States Office of Education for his specific suggestions for improving Chapter 12; to Marjorie Eastabrooks of the Washington State Department of Public Instruction and Elsa Schneider and Simon McNeely of the United States Office of Education for their many suggestions and references to outstanding practices for Chapter 13; to Bryson Jaynes, Loren Troxel, and Burton Wiig for their bibliographical work; and to Angela Brons for her ability to translate our handwriting into mansucript for the printer.

And finally, we hope that this volume will reinforce the many teachers who are seriously attempting to meet all the objectives of education in their classrooms and who realize that there are other changes in the child which are even more important than his mastery of certain facts. And for those who are beginning their teaching we hope it will help them to realize that the educational experiences we provide for boys and girls, the curriculum, cannot be planned separately from the child and his environment, but all constitute a continuous interacting whole.

J. M. L.
D. M. L.

Editors' Introduction

The first edition of this volume represented, ten years ago, a notable break with the tradition in which textbooks in elementary education had been prepared. A unified treatment of the various factors surrounding the growth and learning of the child was substituted for the then typical separate treatments. We know that the educative process is a functional relationship between the learner and his environment. The principle of integration, the process of integrating, we accept as basic in any wholesome learning situation. Textbooks about learning may well take advantage of these principles.

The learner, his needs and growth, his relation to the social group; the development of a curriculum and of the general learning environment, are presented as interrelated aspects of the central element, namely the total development of the child.

A teacher and subject matter are inherent aspects of the learning situation. The teacher is here presented as a participator and guide within the learning process instead of an outside imposer of tasks. The teacher and the learners are copartners in a common process. The subject matter is not mere text material, but includes anything that may serve the pupils as they achieve their purposes. The critic of modern schools who claims that subject matter is neglected, if not in fact eliminated, will see that more subject matter is utilized in these schools than in the old. Subject matter is, however, not something set out to be learned, but is in fact a most useful tool in the solution of problems.

The second edition continues the tradition of the first in that a number of diverse items are organized coherently to serve the purposes of the volume. The authors have avoided the twin daggers of unduly voluminous and unorganizable detail, and of superficial abstractness. The writing, vivid and convincing in the first edition, is even more forceful here. The treatment of emotional health and balance, new in this edition, will attract wide attention and use. The chapter on the organization of functional units is definitely improved. The typical subject matter areas have been critically analyzed as before, and a wealth of new material added. The bibliographies, critically selected, are of unusual value to students and teachers. The essential unity of learning is made sharp and clear. Theory is presented admirably without lapsing into stock generalizations; the practical details are everywhere dovetailed with the theory.

The first edition was given an astonishing reception ten years ago. Institutions of all types dealing with the preparation of teachers adopted

it immediately. Teachers in service individually and in study groups, supervisory leaders, and a number of parents groups used the volume. An unusual feature has been that the wide use has continued with little change over the ten-year period. *The Child and His Curriculum* has been for a decade one of the most widely used books in American education. The editors foresee an equally enthusiastic reception for this edition, to be followed by a long period of usefulness.

A. S. BARR
W. H. BURTON

Contents

PAGE

PREFACE v

EDITORS' INTRODUCTION ix

LIST OF ILLUSTRATIONS xv

PART I

UNDERSTANDING THE ELEMENTARY-SCHOOL CHILD

CHAPTER

1. WIDER GOALS 3

Our Desires for Our Children 3
Our Desires for a Democratic State 5
Objectives Evolve from Our Ideals for Children and Democracy . 7
A School of Living to Realize our Objectives 10
A Look Forward 17

2. THE CHILD AS A GROWING ORGANISM 21

Growth of Preschool Children—Its Significance 22
Growth of the Physical Body 23
Growth of Muscular Control 27
Growth of Intelligence 32
Development of Certain Mental Abilities 44
Social Development of the Child 48

3. THE CHILD AND HIS DEVELOPING EMOTIONS. 64

Emotional Health: Balance or Break-Up? 64
Basic Needs: A Sense of Personal Worth 69
Basic Needs: Mutuality 77
How Can We Recognize the Problems of Children? 79
Techniques Which Help in Child Study 93
The School's Responsibility: Administration 104
The School's Responsibility: The Curriculum 109
The School's Responsibility: Teachers 112
The School's Responsibility: Home and Community Relationships 128
The School's Responsibility: Direct Approach to Personality Problems 129

4. THE CHILD AS MOTIVATED BY PURPOSES AND INTERESTS 137

Interest: A Basic Factor 137
How to Make Use of Existing Interests 144

CHAPTER PAGE

5. THE CHILD AS A LEARNER 153

Some Basic Concepts 153
Learning for a Democracy 155
The Process of Learning 163
The Basic Conditions of Learning 172
Conditions of Learning: Related to the Child's Success . . . 176
Conditions of Learning: Related to Physical Aspects 183
Conditions of Learning: Related to "Method" 185

PART II

EXPERIENCES AS THE CURRICULUM

6. GUIDING LIFE IN THE SCHOOL: THE CURRICULUM 197

Child Study Supplies Basic Principles of Curriculum Development 197
Contrasts of the Old and New in Education 205
Newer Practices are Better! 207
Developing a Newer Program—Some Suggestions 210

7. ORGANIZING LIFE AND LEARNING IN THE SCHOOL: THE UNIT OF WORK 222

What is a Unit of Work? 222
Characteristics of Desirable Units 224
Developing a Unit 230
Types of Activities 234
The Relation of Skills and Abilities 238
The Relation of Study Techniques to the Unit 240
Planning in the Unit 242
Evaluating the Significance of the Unit 246
The Rôle of the Teacher 249
Suggested Unit Outlines 252
Programming the Day's Work 255

8. RESOURCES FOR LEARNING. 261

Learning Through Community Experiences 263
Learning Through Creative and Socializing Experiences . . . 268
Learning Through Audio-Visual Experiences 273
Learning Through Reading Resources 288

9. SOCIAL EXPERIENCES: THE STUDY OF MAN . 296

Why Social Experiences for the Elementary-School Child? . . . 296
Recent Emphases on Social Experiences 301
What Social Situations are Vital to the Child? 309
What are Understandings and Concepts, Techniques and Abilities, and Attitudes Essential in Meeting Situations? 317
Basic Guiding Principles 327
Types of Social-Studies Programs 328
Social Experiences 340
Teaching Procedures 343

CHAPTER PAGE

10. LANGUAGE EXPERIENCES:
LEARNING TO USE LANGUAGE 351

The Changing Concept of Language Arts 351
The Changing Concepts: Language Reflects Cultural Levels . 356
What Language Experiences are Vital to the Child? 361
Types of Programs in Language Arts 366
Basic Guiding Principles 368
Developing Better Oral Communication: Talking and Listening 368
Developing Better Oral Communication: The Problems of Voice and Speech 377
Understanding Written Communication: Recent Developments in Reading 381
Understanding Written Communication: Fundamental Reading Concepts 386
Understanding Written Communication: Special Problems . . 393
Understanding Written Communication: Diagnosis and Remedial Work in Reading 399
Understanding Written Communication: Reading for Varied Purposes 405
Understanding Written Communication: Reading Interests . . 409
Developing Better Written Communication: Written Expression 417
Developing Better Written Communication: Spelling 420
Developing Better Written Communication: Handwriting . . 427
Diagnosis in Language Arts 430

11. NUMBER EXPERIENCES:
DEVELOPING QUANTITATIVE THINKING . . 449

Development of Quantitative Thinking 449
What Arithmetic Shall We Teach? 453
Readiness to Understand Number 454
Changes in Grade Placement 456
Number Experiences in a Functional Setting 459
Basic Guiding Principles 466
Transitional Programs 467
Improving Problem-Solving 472
Diagnostic and Remedial Procedures 475

12. SCIENTIFIC EXPERIENCES:
DEVELOPING SCIENTIFIC CONCEPTS 483

Why Scientific Experiences for the Elementary Child? 483
Which Scientific Concepts are Vital to Children? 488
Interest—What Rôle Does It Play in Selecting Science Experiences? 492
Basic Guiding Principles 493
Science Experiences—What Types? 495
How are Science Experiences Organized? 500
What Materials and Apparatus are Necessary for Effective Learning? 517

13. HEALTHFUL EXPERIENCES:
PROVIDING FOR HEALTHFUL LIVING 524

The Health Program 524
Basic Guiding Principles 526
Healthful School Living 527

CHAPTER PAGE

Health Education 530
Types of Programs 555
Health Service 561
Evaluation and Appraisal in Health and Physical Education . . 574

14. CREATIVE EXPERIENCES: PROVIDING OPPORTUNITY FOR CREATIVE EXPRESSION 586

Characteristics of Creative Experiences 586
Guiding Creative Experiences in Music 595
Guiding Creative Experiences in Graphic Art 610
Guiding Creative Experiences in Literature 621
Guiding Creative Experiences in Dramatic Play 630
Guiding Creative Experiences in Rhythms and Dancing . . . 636

15. EVALUATING CHANGES IN THE CHILD . . . 650

Evaluating the Attainment of Objectives 651
Recent Developments in Evaluation Instruments 657
Improvement in the Child Due to Evaluation 668
Cumulative Records 670
Essential Elements in an Adequate Evaluation Program . . . 673

INDEX 687

List of Illustrations

FACING PAGE

Self-expression (Duluth, Minnesota, Public Schools) 78

Accomplishment (Los Angeles, California, City Schools) . . . 79

"One responsibility, then, is to provide learning situations where children work and play together in groups..." (Los Angeles, California, City Schools) 79

The far and near, the past and the present (Portland, Oregon, Public Schools) 272

The President speaks (Department of Visual Education, Portland, Oregon, Public Schools) . . . 272

Advance planning (Los Angeles, California, City Schools) . 273

Reality through the museum (Battle Creek, Michigan, Public Schools) . . 273

Maps acquire meaning (Los Angeles, California, County Schools) 304

Local Indians become important (Los Angeles, California, City Schools) 304

Working toward a goal (Los Angeles, California, City Schools) . 305

Enjoying the accomplishment (Los Angeles, California, City Schools) 305

Absorption (Los Angeles, California, City Schools) 432

New developments, new opportunities (Los Angeles, California, City Schools) 432

Working with words (Los Angeles, California, City Schools) . . 433

The reading group (Los Angeles, California, City Schools) . . 433

Numbers acquire meaning (Los Angeles County, California, Schools) 464

Problems are real (Battle Creek, Michigan, Public Schools) . . 465

FACING PAGE

On the school farm (Battle Creek, Michigan, Public Schools) . 496

A "center of interest" (Los Angeles, California, City Schools) 496

Science is important for all (Battle Creek, Michigan, Public Schools) 497

"Patterns" of learning (Los Angeles, California, City Schools) . 497

Our friend, the dentist (Department of Visual Education, Portland, Oregon, Public Schools) 528

"Which one does the chocolate milk come from?" (Duluth, Minnesota, Public Schools. Picture by courtesy of *Duluth News Tribune*) . . . 528

Embarrassment disappears (Duluth, Minnesota, Public Schools. Picture by courtesy of *Duluth News Tribune*) 529

Reality culminates health study Los Angeles County, California, Schools . . . 529

We can all play (Tonette class, Battle Creek, Michigan, Public Schools) 596

Music and pictures tell the story (Department of Visual Education, Portland, Oregon, Public Schools) 597

A kiln-finish for creative work (Los Angeles County, California, Schools) . 597

Personality patterns—boldness and primness (Battle Creek, Michigan, Public Schools) 597

PART I

UNDERSTANDING THE ELEMENTARY-SCHOOL CHILD

A study of the individual, his growth, emotions, interests, and learning.

I

Wider Goals

I. OUR DESIRES FOR OUR CHILDREN

"Oh, mother! It was so much fun!" is the cry of many boys and girls as they come home from the new elementary school each night. Learning does not have to be a dreary, disagreeable process. It can be fun; it can be interesting; it can be thrilling! School can be the most fascinating thing in the child's life. When we can send the kindergarten child home on his first day of school like the one just now who burst into the room crying, "Oh, mother, oh, daddy, it was so much fun," and seven years later have him leaving the elementary school with the same enthusiasm, we have gone a long way toward success.

Imagine your own boy or girl, your nephew or niece, or if that is too difficult, that cute tot of your friends who is starting to school. It is the first day of school in September. A new world is opening up for the youngster. What is going to happen to him in this "brave new world"? Time passes. This child who was just out of babyhood when he first came to school is now a youngster on the verge of adolescence. He has finished with the elementary school and is ready to enter secondary school. What kind of person do you want him to be now?

Suppose you could be granted one wish—what would you want your child to be by the time he has spent his last day in elementary school? You would spend hours thinking through an answer to the question. Nothing would be more important than that. When you had finished and were ready with your list of wants for the youngster you would have made an excellent statement which could serve as the objectives of the ideal elementary school.

As an elementary teacher you may or may not have youngsters of your own, but perhaps imagination can substitute while you think through what you would want him or her to be. When you have done this your rôle as teacher in the elementary school becomes clear. Your opportunity is to help the mothers and fathers of those boys and girls in your room to get their all important one wish.

Let's do our thinking on paper. Our list of wants (pedagogically known as objectives) might read somewhat as follows:

We want our youngsters:

To get along well in work and play with his playmates and with older people

To be able to speak clearly and correctly

To be able to start a job and keep at it until it is finished (initiative and responsibility)
To be able to do his share, either of work or play
To have wide interests in art, music, science, and the world around him
To be fairly capable of locating what he wants to know
To have control over some working tools such as being able to use numbers, dictionaries, and maps
To be able to write clearly
To be able to read well
To have a wide outlook
To have some understanding of the processes by which man lives on this world
To be well and strong
To be decent, etc.

These, then, constitute one list of objectives of the elementary school, what we want for our children and what most parents want for theirs. Later in the chapter a more comprehensive and a more formal list will be considered.

How can the school realize these objectives? The list makes interesting reading a second time if one thinks about the ways in which the typical school functions. Why, actually in many things the school is developing the opposite trait. That matter of initiative is strictly suppressed in many of the traditional schools. Children are given the opportunity of doing exactly as the teacher says, no chance to go on their own. Also, strength has never been known to develop from sitting in one position with a book in front of one for hours. Many such points might be listed.

The elementary school of the past has done a good job of teaching pupils to read and to write. It has developed a fair control over many working tools including that of speech. It has contributed to their knowledge of how man lived in the past and something about how man lives to-day in various parts of the world. Yet to the other objectives, it has made relatively few contributions.

The question appears again. How can the school realize these objectives? Is it by adding more of the same material? No, if the answer were as simple as that, we would teach 5,000 spelling words instead of 2,500 which probably should be taught. Perhaps fractions twice as complex or dates twice as numerous might seem to be a solution, but decidedly they are not. The answer lies partly in the material but principally in the manner of presentation. It is hard to imagine the fraction ½ developing any boy's initiative. Yet see what happens when a hungry boy is told that if he can find a knife, he may have half of that big juicy apple. There is no lack of initiative to criticize. Schools in every state are thinking through their programs in an attempt to determine how their objectives can be better realized. The best thinking available, hard work, experimentation and exploration are making contributions to the problem. Probably never before has there been the concerted effort of as many people directed

to the solution of this problem.[1] It is encouraging that increasingly more people are insisting that the objective of mastering the "three R's" is not sufficient. The school must be concerned with the broader objectives.

Changes in education are not terrifying. There is no new set of answers known only to a charmed circle. The modern school is merely trying to get better teaching and is concerned with what a child is, as well as what he knows. The modern teacher in working with children looks at them in somewhat the same manner a doctor looks at his patients. She interprets their behaviors not as a personal reaction, but as symptoms which need to be understood. What teacher does not remember her first year of teaching with its procession of "boners"? Every experienced teacher has improved from her first day's teaching. Every teacher can still improve.

Many teachers become instantly concerned when they hear of anything having to do with modern education. They seem to think it is some new magical way of teaching that they will never be able to master. Actually, one of the main differences between the modern school and the traditional school is that the modern school has accepted the broader objectives as goals. Differences in materials and in teaching procedure come from an earnest attempt to realize our list of "wants" as the child lives in the elementary school.

The consideration of the child was the ideal starting point as a source of objectives. However, that does not give the complete picture. It is necessary to examine the social order in which that child is developing. From a consideration of the two, a formulation of objectives can be developed. This is done in the following sections of this chapter. Then these objectives are examined for their implications for elementary education.

II. OUR DESIRES FOR A DEMOCRATIC STATE

Objectives evolve also from the society they are to serve. They are a statement of the values for which that society holds to be worth striving. As the aims of a society differ, so will its educational objectives. This difference has in recent years become vivid as Nazi, communistic, and democratic educational programs have been compared.

Objectives are expressions of values. The formulation of objectives for the elementary school requires a careful scrutiny of our democratic society to determine what are the outstanding values held. With millions of children entering school-rooms every day and the pressure of this group for attention, the school in the past turned in too much upon itself. It has been concerned with meeting its day by day tasks and developing its own scientific techniques. Only during the last two decades of the twentieth century, has American education come to realize the necessity for a care-

[1] Evidence for this is in the vast number of state, county, and city curriculum projects utilizing the services of all of their staffs, which are under way at the present time.

ful evaluation of its functions in terms of the society of which it is a part. This evaluation is being made by a number of educational groups, but the most significant, because it will be the most influential, is the work of the Educational Policies Commission of the National Education Association and the American Association of School Administrators. Their two volumes having most significance for the study of our democratic process are *The Unique Function of Education in American Democracy* and *The Purposes of Education in American Democracy.* Interpretation of the educational objectives into meaningful practice was done for the high school in *Education for All American Youth,* followed by *Education for All American Children* for the elementary school.

Our changing society. Conditions and prospects of our society have been vividly portrayed by Beard in the first volume of the Commission. The highlights [2] of our changing society as he pictures them are:

Political democracy remains.
Functions of political government have multiplied.
Over free land sweeps tenancy.
The call for conservation checks the rush of unrestrained exploitation.
Corporate ownership overshadows individual ownership in industry.
Local economies are tied into national economy.
Individuals in economy are organized in associations.
Family economy is disintegrating.
The functions of government touch all branches of life and economy.
The growth of public functions is cumulative.
No sharp line divides public and private economy.
The scientific method dissolves old social dogmas.
The course of foreign relations changes involving commercial expansion.
The world outlook is clouded.
Surpluses call for new policies.

Since these were written we have been through World War II. Changes since then have added to this list.

Atomic energy may provide enriched living or destruction.
An international responsibility is being accepted.
There is real participation in helping solve international problems.
Provision for housing is most inadequate.
Contrasting ideologies have created world tensions.
Attempts are being made to solve world problems around the conference table, United Nations, and UNESCO.
Greatly accelerated by the war is the tendency of government to touch all phases of living. This has resulted in increased centralization of agencies, bureaus and budgets.

Obviously these changes have created a social situation entirely different from that in which the founders of the American public schools

[2] Adapted from Educational Policies Commission, *The Unique Function of Education in American Democracy* (Washington, D. C., National Education Association, 1937), Ch. V. For another expression of changes turn to our Chapter 9.

worked. No statement of purposes can ignore this changing social setting in which the products of education must function.

Democratic values. Our democratic ideals need to be carefully analyzed for their contribution to values which are held important for education. Certain elements in this complex democratic process stand out in bold relief. These with their specific considerations which the Commission considered important are: [3]

The General Welfare
The general welfare is prompted by human sympathies.
The general welfare places individuals above institutions.
The general welfare is decreased by the lag of social institutions.
Social customs are conservative elements.

Civil Liberty
Democracy endows the individual with important rights and duties.
These rights presuppose a high regard for humanity.
Education is the ultimate guarantee of civil liberty.
Social objectives are not neglected.
Men are also endowed with important differences.

The Consent of the Governed
Popular government is a long sought ideal.
Popular government without universal education is a prologue to tragedy.
Knowledge is extended, particularized and diffused.

The Appeal to Reason
Democracy repudiates violence.
Violence and war frustrate the ideals of democracy.
The spirit of education outweighs the forms of schooling.

The Pursuit of Happiness
Opportunity to secure happiness is a democratic ideal.
Initiative is necessary in the pursuit of happiness.
Happiness involves wisdom in making judgments.
Education is the key to the abundant life.

III. OBJECTIVES EVOLVE FROM OUR IDEALS FOR CHILDREN AND DEMOCRACY

A formulation of educational objectives must give consideration to the changing social setting in which they are to function, the values which the social group consider good, and the nature of the learner. The whole teaching process also needs to be considered in relation to these factors. They are equally important in helping to determine the changes to be made, the means by which they will be made, and the materials and experience that will be used in making the changes. After a careful consideration of these factors the Commission proposed a classification of objectives into four groups arising from the four areas with which education is concerned.

[3] Educational Policies Commission, *The Purposes of Education in American Democracy*, Ch. II.

The significance of their presentation can be better understood by reading their complete introduction to the classification, which is: [4]

Education Is Concerned with the Development of the Learner

The first rôle, or phase of total behavior, is that of the educated person. Conduct in this field is centered on the personal development, growth, and learning of the individual. It includes his use of the fundamental tools of learning, his health, his recreation, his personal philosophy. The placing of these objectives first in the list is not accidental. They deal with the development of the individual himself. In a democracy this field is of supreme importance. Success in this rôle conditions one's success in every other phase of life's activities. The purposes of education which fall under this section of total behavior will be referred to as

the objectives of self-realization.

Education Is Concerned with Home, Family, and Community Life

A second area is that of home and family relationships with their immediate and natural extensions to neighbors and community. Educationally the home is the most powerful, as it is perhaps the oldest, of all social institutions. Good homes and good communities are the basic units of democracy. The activities of the educated individual which relate to these immediate, person-to-person contacts are therefore, grouped together in a section on

the objectives of human relationship.

Education Is Concerned with Economic Demands

The next aspect of the activities of the member of a democratic society includes the economic sphere—the creation and satisfaction of material wants. Here we consider the education of the individual as a producer, a consumer, an investor. The importance of such education in providing the indispensable material basis for comfort, safety, and even life itself is clear. The objectives within this general area will be classified under the heading of

the objectives of economic efficiency.

Education Is Concerned with Civic and Social Duties

Finally, there are the activities of the educated citizen. They involve his dealings with his government—local, state, and national—his relationships with the peoples of other nations, and his other "long-distance" contacts in large-scale collective enterprises. This field of activity is served by education through

the objectives of civic responsibility.

There have been many formulations and classifications of educational objectives. Recently these have been made in terms of human activities. Beginning with Spencer in 1860 there have appeared well over forty such classifications.[5] The most widely recognized and circulated set was that of the 1918 Commission of the Reorganization of Secondary Education. This report propounded the now famous "seven cardinal principles" of

[4] *Ibid.*, pp. 45-47.

[5] For more detailed discussions of such formulations see the Commission's report on *Purposes*, pp. 43-45, or O. I. Frederick and Lucile J. Farquear, "Problems of Life," *School Review*, Vol. 46, May, June, 1938, pp. 337-45, 415-422.

education, namely health, command of the fundamental processes, worthy home membership, vocation, citizenship, worthy use of leisure, and ethical character.

The statement of the Educational Policies Commission is especially helpful in planning educational programs. Each of the general headings has a number of objectives listed under it. These serve to clarify the general statement. They also serve to provide a basis for a detailed consideration of what should be attempted in the development of boys and girls. The objectives of education as set forth by the Educational Policies Commission are: [6]

The Objectives of Self-Realization

The Inquiring Mind. The educated person has an appetite for learning.
Speech. The educated person can speak the mother tongue clearly.
Reading. The educated person reads the mother tongue efficiently.
Writing. The educated person writes the mother tongue effectively.
Number. The educated person solves his problems of counting and calculating.
Sight and Hearing. The educated person is skilled in listening and observing.
Health Knowledge. The educated person understands the basic facts concerning health and disease.
Health Habits. The educated person protects his own health and that of his dependents.
Public Health. The educated person works to improve the health of the community.
Recreation. The educated person is participant and spectator in many sports and other pastimes.
Intellectual Interests. The educated person has mental resources for the use of leisure.
Esthetic Interests. The educated person appreciates beauty.
Character. The educated person gives responsible direction to his own life.

The Objectives of Human Relationship

Respect for Humanity. The educated person puts human relationships first.
Friendships. The educated person enjoys a rich, sincere, and varied social life.
Coöperation. The educated person can work and play with others.
Courtesy. The educated person observes the amenities of social behavior.
Appreciation of the Home. The educated person appreciates the family as a social institution.
Conservation of the Home. The educated person conserves family ideals.
Home-making. The educated person is skilled in home-making.
Democracy in the Home. The educated person maintains democratic family relationships.

The Objectives of Economic Efficiency

Work. The educated producer knows the satisfaction of good workmanship.
Occupational Information. The educated producer understands the requirements and opportunities for various jobs.
Occupational Choice. The educated producer has *selected* his occupation.

[6] *The Purposes of Education in an American Democracy,* pp. 50, 72, 90, 108. If possible the complete discussion of these objectives should be read. They are presented in Chapters IV to VII of the report.

Occupational Efficiency. The educated producer succeeds in his chosen vocation.
Occupational Adjustment. The educated producer maintains and improves his efficiency.
Occupational Appreciation. The educated producer appreciates the social value of his work.
Personal Economics. The educated consumer plans the economics of his own life.
Consumer Judgment. The educated consumer develops standards for guiding his expenditures.
Efficiency in Buying. The educated consumer is an informed and skilful buyer.
Consumer Protection. The educated consumer takes appropriate measures to safeguard his interests.

THE OBJECTIVES OF CIVIC RESPONSIBILITY.

Social Justice. The educated citizen is sensitive to the disparities of human circumstance.
Social Activity. The educated citizen acts to correct unsatisfactory conditions.
Social Understanding. The educated citizen seeks to understand social structures and social processes.
Critical Judgment. The educated citizen has defenses against propaganda.
Tolerance. The educated citizen respects honest differences of opinion.
Conservation. The educated citizen has a regard for the nation's resources.
Social Applications of Science. The educated citizen measures scientific advance by its contribution to the general welfare.
World Citizenship. The educated citizen is a coöperating member of the world community.
Law Observance. The educated citizen respects the law.
Economic Literacy. The educated citizen is economically literate.
Political Citizenship. The educated citizen accepts his civic duties.
Devotion to Democracy. The educated citizen acts upon an unswerving loyalty to democratic ideals.

IV. A SCHOOL OF LIVING TO REALIZE OUR OBJECTIVES

Implications of objectives. What value has this list of objectives for elementary education? What use can be made of it? What changes will it make in the classroom program of the elementary school? These are the questions which arise when the list is studied. This statement of objectives furnishes a point of departure in thinking through a program of elementary education. The starting point for making improvements in elementary education has usually been with our present offerings, in trying to suggest some changes that might be made. It may be that such a procedure cripples us in planning a constructive program for we may not be able to see many of the existing shortcomings or drawbacks. The better process might be to take each objective in turn and attempt to discover experiences for children which will help them attain or make progress in the direction the objective indicates.

The four classifications of objectives are not mutually exclusive, but rather should be thought of as supplying vantage points for surveying the field of elementary education. As each objective is studied, it is evident that experiences can be provided for children which will result in growth

in the direction indicated by the objective. The only possible exceptions in the elementary school are certain vocational objectives, especially those dealing with selection.

When these possible experiences are outlined, they can then be compared with those now offered to determine the inadequacies of the present program. If possibilities are known, much can be done to lessen the gap between present and possible practices. No better method of evaluating the present program could be devised than by determining the extent to which it is contributing to these objectives.

Another contribution which these objectives should make is to hasten the abolishment of a vast multitude of objectives. It was the custom for a number of years to include long lists of general and specific objectives in each course of study. In too many cases these objectives were stated as though they were to be mastered during that part of the work or during that grade. Actually such lists made little difference in the teaching that was done. There was little attempt to check the content against the objectives, little attempt to realize the objectives. Any one having experience with youngsters realized the utter futility of thinking that all would master certain skills or knowledges implied by the objectives. Through custom the long list of objectives at the beginning of courses has persisted.

There is an increasing realization that education cannot be built up like a brick house by adding brick after brick in grade after grade. Rather it is a process of growth through gradual development each year. It is much better compared with a growing tree. All life shows the same developmental process which is essentially different from inanimate changes. As a result objectives are general guides to the type of person that is desired.

The concern of the teacher who has the children during the year is with the selection of experiences that will contribute to additional growth in the general objectives. Take such a common skill as reading as an illustration. The elementary school does not develop fully the child's ability to read. It makes many essential contributions to this developing ability, but at no level has the child reached complete mastery of reading. In fact when growth in reading ceases for most individuals, there is still much potential improvement that is never made. Not only do skills develop gradually, but understandings, appreciations, and attitudes follow the same pattern.

Changes to meet the objectives of self-realization. Taking the objectives listed under self-realization and making a rapid tour of American elementary classrooms, an impartial observer would see many shortcomings. Reading, writing, and numbers would be rated as the objectives to which most attention was given and in which the school was most successful. In the next group would probably come speech, sight, and hearing, health knowledge, health habits, and recreation, which he would find given attention in some schools. In the last group would be the inquiring mind.

democratic attitudes, public health, intellectual interests, esthetic interests, and emotional health. Children acquire from many schools a vast collection of facts and very little of value.

The attainment of the objectives in this classification is partly a problem of different material but largely it is a question of method. More and more schools are concerned with the individual and community problems of health. Possibilities in this field are discussed in Chapter 13.

The development of wider interests is a problem of both material and method. The teacher must completely accept the idea that it is one of her functions to develop wide intellectual and esthetic interests. She must live widely herself. She must encourage and stimulate wide interests in her pupils. She must understand children if she is to effectively aid their development particularly in emotional health. Democratic attitudes develop only in a democratic atmosphere. To be able to do all this requires teachers with a wide perspective, who are willing to experiment and have courage to depart from the accepted pattern.

Changes to meet the objectives of human relationship. Whereas the objectives of self-realization dealt with purposes of education involved in the development of the individual, the objectives of human relationships are related to the more intimate concerns of the individual. These involve his relations with his friends, and his immediate social and family group. The schools of to-day and yesterday have done relatively little in this regard. However, schools are becoming increasingly concerned with this problem. It is an area in which much pioneering work can be done.

School experiences may be so presented as to destroy certain values the pupil may have already attained. Competitive desires rather than cooperative ones are apt to be encouraged. Little is being done to create a realization that human welfare is paramount. Little time is spent in those activities which lead children to enjoy and appreciate one another. Practices that never should have become common have arisen because the school held as its purpose the attainment of intellectual values. Such procedures never would have developed had the complete development of the child been considered as the prime objective of education.

Improvement in family participation and relationships is an important phase of this classification. In 1918 the "seven cardinal principles" stressed worthy home membership. A large percentage of girls marry after leaving school. In spite of this emphasis and the realization that all children participate, both at present and in the future, in the family with its relationships and problems, little is being done by the schools to make this participation better. The secondary school is making some progress, but the contribution that the elementary school can make has received little consideration. It awaits the pioneer efforts of a group of thoughtful and imaginative teachers.

Changes to meet the objectives of economic efficiency. A study of this classification of objectives shows that it is divided into two aspects, those

dealing with the producer and those with the consumer activities. At present most of the emphasis of the schools is placed on the producer phases, with most of this work limited to the secondary level. The elementary schools need to select those to which they can make some contribution. Obviously, it is not the function of the elementary school to promote a vocational choice. Just as obviously it can make a beginning with such objectives as the habit and attitude of work, general occupational information, and certain consumer objectives.

Satisfaction from good workmanship is not developed from a study of the topic. It results only from having an opportunity to do work which can be considered good and which children consider worth while. A realization of the social value of work comes only when the child has the opportunity to make an essential work contribution that furthers the purpose of the group. These objectives require no separate period during the day; rather they require a method that will furnish work opportunities in the classroom.

Though the elementary school cannot furnish money for each child to spend, it can help children to make expenditures wisely. The meaning of *wisely* will differ for each individual, depending a great deal upon his present status. What might be a very foolhardy expenditure for one child might be very worth while for another. We provide many drill exercises that will tell a child how much change he will receive after a purchase, but practically nothing is done to help him decide whether he should have bought it in the first place. Even a study of advertising from the consumer angle might well find a place in the elementary curriculum.

Consumers—and all of us are—have two basic needs: first, to develop a sense of values to decide which of various needs or desires are most important; and second, to develop habits, attitudes, and techniques for critically evaluating the choices of ways to reach the objective decided upon. It seems that these two are absolutely necessary preliminaries to any of the specific learnings which come under the head of consumer education. They are the essentials without which consumer information becomes pointless.[7]

Changes to meet the objectives of civic responsibility. It is in the realm of these objectives that the school is placing most of its stress at present. Even here much improvement can be made. We still lack techniques for giving boys and girls a real opportunity to share in civic responsibility. Until we can provide for participation on their level, we will continue to fall short of attaining this objective.

A comparison of the objectives listed under civic responsibility with what is actually taught in the schools furnishes a starting point for the consideration of the problem. A large part of the stress of many courses

[7] Many suggestions for consumer education possibilities are listed in the issue, "Consumer Education in the Elementary School," *The National Elementary Principal*, Vol. 27, February 1948, pp. 1-33.

even in citizenship deals with the form of government. The objectives imply a need for much more than that. To develop persons who are sensitive to the disparities of humans, who are willing to act, who understand social structures and social processes, who can utilize critical judgments, and who are tolerant requires a great deal more than knowledge of mere form of government. It requires the most careful planning by the best minds of our nation. The school must develop new techniques to furnish wider social participation to boys and girls.[8]

Tolerance or the ability to recognize differences of opinion is another essential objective to which the elementary school can make a real contribution. Tolerance does not imply an absence of belief or conviction; rather it does imply a recognition of the integrity of the individuals with which one differs. It is the essence of a democratic state. Youth must have the experience of formulating their beliefs on the most reliable information obtainable and holding to them. At the same time they must realize that others following the same process may have different opinions as honestly formulated as theirs. Youth must also have the experience of settling clashes of opinions by discussion, from which should come a realization that the ideas of any one individual, including themselves, may occasionally be wrong. From such opportunities should also come a respect for the value of group opinion formulated from such a discussion process. If our superintendents universally recognized this truism, we would have all school systems run as democratically as some are now being run.[9]

Basic needs should affect practices and procedures. Since the child's basic needs are the powerful underlying basis for all his activity, they become an essential factor in determining all practices and procedures. These needs may be classified as physiological and emotional-social. They are discussed at some length in Chapter 3 but may be summarized in brief as follows:

Appropriate food and liquid in proper amount
Clothing and shelter to maintain proper temperature and good air
Regular and adequate elimination
Rhythm of activity and rest (which includes more than recesses and a night's sleep)
Maintaining a sense of personal worth
  Security
  Success
  Recognition

[8] Department of Elementary School Principals, *Elementary Schools—The Frontline of Democracy*, Twenty-Second Yearbook, *The National Elementary Principal*, Vol. 22 (July, 1943), pp. 245-592, and Educational Policies Commission, *Learning the Ways of Democracy* (Washington, D. C., National Education Association, 1940).

[9] There is marked increase in our knowledge concerning the democratically-run classroom. These developments are discussed in Chapters 3 and 9. See also National Education Association, *Education for International Understanding* (Washington, D. C., National Education Association, 1948).

Sympathetic understanding
Acceptance, as he is, with respect
Status with his peers
Increasing self-direction
Contact and harmony with reality
Adventure
Social Contribution
Opportunity to work in we-relationship
Responsibility for his group through democratic processes

Experiences which contribute to meeting these needs in children are of prime importance. Too often our attention has been focused upon the mastery of certain facts and skills without giving first consideration to the child's basic needs.

Learning Principles Affect Practice. An increasing amount of research indicates the conditions under which growth and learning take place. These conditions are discussed in Chapter 5. In developing practices to realize our objectives these conditions and principles must be used as guides. One valuable list of principles is that given by the Educational Policies Commission.[10]

1. Growth and development are continuous.
2. Behavior is learned.
3. Learning and growth are stimulated by both security and adventure.
4. Each individual is unique.
5. We learn what we live.
6. We always learn several different things at once.
7. We learn a great deal and learn it rather permanently by example.

A good elementary school is a place where learning and living are simultaneous. Every school can improve. There is no greater responsibility to an elementary faculty than to be continually considering how and where living in their school can be improved for boys and girls.

A Suggested Method of Obtaining Changes. The elementary school is faced with the problem of developing means of attaining these neglected objectives at least as well as the objectives of reading and writing.

Experiences provided to attain these objectives are not enough. The setting in which they are provided must be carefully considered. Awareness of the basic needs of children and the way in which learning takes place are essential. These factors must always be in the forefront of thinking as attempts are made to provide experiences which will better realize the desired objectives. Obviously, considering whether long-division should be in grade five or six will not be the kind of experience which will help a faculty make a basic improvement in its program. Rather, studies of their children's reactions, home conditions, and interests will be much more productive.

[10] Educational Policies Commission, *Education for All American Children* (Washington, D. C., National Education Association, 1948), pp. 5-7.

One of the *first* steps in the process of obtaining change in the elementary school is the acceptance by teachers that these objectives are of equal importance. This cannot be achieved through discussion alone; it must be achieved by providing teachers with experiences which will lead them to the acceptance of a different philosophy. There is no need to convince individuals that children should be able to make change. However, could a faculty study whether or not making change effectively and correctly will improve in any way whatever the ways in which children spend money? Would not a study in each classroom of the expenditures which each child made during the week help to convince teachers that there was need for considerable emphasis on how we should spend our money and what we can buy which will be of most value?

A *second* step requires the careful analysis of possible experiences and materials that will contribute to the realization of the objective. This must be done for each objective. The present offering of the elementary school should not be a stumbling block to this process. One criterion of importance, which must be utilized, is whether the new is within the maturation level of that age child. Both individual and group thinking need to be combined to produce the preliminary list.

The *third* step includes the introduction of some of the more carefully thought through possibilities into the classroom. This should be done somewhat slowly and only after the teacher is sufficiently familiar with the materials to assure a worth-while experience. One of the justified criticisms directed against many new things is that they were introduced by teachers who had no idea of what they were doing. Throwing over the old for the new merely because it is new and in style may be appropriate in women's dress, but it does not promote the optimum growth in children.

The *fourth* step involves a careful evaluation of changes made in children as a result of the introduction of the new experiences. Here again is a step which is usually neglected. Too often it is felt that what we think will result in certain changes in youngsters will actually make such changes. Further it is felt that measuring facts and skills is enough. These assumptions may be far from true. Not until we can show that the changes have actually taken place, will we have any assurance that the material and experience really contribute toward growth in the objective in question. Upon the basis of the results of evaluation, necessary changes can again be made and the process is repeated. Further suggestions for evaluation are given in Chapter 15.

No static curriculum can develop from this process. Continually teachers will be modifying their plans in light of results so as to better fulfill the objectives. As changes take place in science, as new problems develop in the social realm, as individuals are called upon to make new adjustments as a result of these changes, adjustments will be made in the curriculum to meet these new demands.

V. A LOOK FORWARD

Schools have long been faced with the problem of educating children. Classes were meeting while this book was being written; they are meeting now while it is being read; and they will continue to meet. No volume written projects a new system of education to be installed in all classes to-morrow. Changes are made gradually, building upon what is in existence to-day. In this volume no new educational "ism" is being advocated. The one purpose is to provide a helpful consideration of many of the problems involved in understanding the children of elementary-school age and providing worth-while experiences for them.

The traditional program primarily required of the teacher a knowledge of the subject-matter she was to teach. The newer program requires much more. It requires a much broader knowledge of subject-matter, for the teacher has a responsibility for selection which has not formerly been hers. It requires a much wider knowledge of children, the way they grow, their interests, their personality, and the way they learn. It requires an understanding of profitable learning experiences and ways to organize and present them. It requires that the teacher utilize all of these factors and forces in providing an educational program.

An overview. This volume is directed toward furnishing assistance in meeting these challenges of the new program. The remainder of Part I is devoted to understanding the child. There are chapters dealing with child growth, the developing emotions of the child, the interpretation of his interests and how he learns. Material is presented from research, theory, and practice that have most significance for the teacher. Part II deals with experiences as the curriculum. From a study of the child and the desirable objectives for the elementary school certain principles are developed for the organization and selection of experiences. The teaching procedures involved in a unit of work and sources of experiences are considered. The areas of experience, such as social, language, quantitative, scientific, health, and creative and recreative experiences are treated separately. This treatment of the various areas of experience attempts to reflect some of the better things being done in schools throughout the country, to interpret each area in relation to the total program, to present research having value, and to show classroom possibilities that are consistent with the general philosophy developed gradually throughout the book. The final chapter considers the possibilities of evaluating the changes made in children as a result of school experiences.

The bibliographies at the end of each chapter have been carefully selected to furnish an opportunity to explore further the problems discussed in each chapter. The references have been chosen and annotated with consideration for the factors of significance and availability.

The aim consistently followed throughout the entire book has been to present material having most importance to the teacher in providing

learning experiences more worth while for her boys and girls. This procedure has greatest value for the teacher in training or in service, or for the administrator or supervisor faced with the problems of improving the instructional program.

Suggested Learning Experiences

1. Did you make a list of "wants" for a certain boy or girl? If you have not, make the list suggested in section I of the chapter.
2. Compile the lists of several members, eliminating duplications. Have each member indicate which of the objectives he feels are best and poorest realized at present in the elementary school.
3. For one of the objectives which you feel is poorest realized, suggest several ways for improving the situation. These suggestions should be practical.
4. Prepare a one-page summary of either *The Unique Function of Education in American Democracy, The Purposes of Education in American Democracy,* or *Education for All American Children.*
5. The detailed objectives stated by the Educational Policies Commission are all expressed in terms of adult goals, such as "the educated person has. . . ." Have four committees restate these objectives in terms of what they mean for the child at the end of the elementary school. It will be necessary to edit these for consistency. (See Burton for help.)
6. From these restatements of the original objectives list those which have the most significance for elementary education.
7. Using the same four committees suggested in 5, prepare additional suggestions for changes to meet the four types of objectives. These suggestions should evolve as committee reports from considerable discussion and additional reading.
8. Contrast the presentation in two of the following references listed in the bibliography Bode, Brubacher, Counts, French, *Twenty-Sixth Yearbook* (A.A.S.A.), Rugg, and Warner and others.
9. Discuss the implications of Chapter I and II of Warner's *et al. Who Shall Be Educated?*
10. Some of the references listed will be used many times. You should be familiar with Adams, Dewey, *Education for All American Children,* Harap, Hildreth, Hockett and Jacobsen, Lane, Macomber, Melvin, and Rugg. Look through these references so that you know what they have to offer.

Selected References

Adams, Fay, *Educating America's Children* (New York, Ronald Press Co., 1946). Chapter I deals with what schools should do for children.

American Association of School Administrators, *Paths to Better Schools, Twenty-Third Yearbook* (Washington D. C., The Association, N. E. A., 1945), 415 pp. Discusses areas in which schools can improve.

———, *The Expanding Role of Education, Twenty-Sixth Yearbook* (Washington, D.C., The Association, N. E. A., 1948). Chapter I briefly analyzes present day America. The quotations, "Some Testaments from the American Scriptures" (pp. 15-18) should be read by every teacher. Chapters II and XIII are valuable to elementary principals and superintendents.

Barr, A. S., Burton, William H., and Brueckner, Leo J., *Supervision* (New York, Appleton-Century-Crofts, Inc., 1947). Chapter V deals with the determination of objectives.

Bode, Boyd H., *Democracy as a Way of Life* (New York, The Macmillan Company, 1938). Implications of democracy for education are presented.

BRUBACHER, J. S., and others, *Public Schools and Spiritual Values, Seventh Yearbook,* John Dewey Society (New York, Harper and Brothers, 1944), 222 pp. A most valuable discussion of spiritual values.

BURTON, William H., *The Guidance of Learning Activities* (Appleton-Century-Crofts, Inc., 1944), pp. 266-275. An outstanding discussion on objectives. See especially p. 269, where he pays his respects to the way "Purposes of Education" are stated.

California Curriculum Commission, *Teachers' Guide to Child Development in the Intermediate Grades* (Sacramento, State Department of Education, 1936), pp. 1-18. A good discussion of point of view with special emphasis on the intermediate grades.

"Contributions of Sociology to Elementary Curriculum," *Journal of Educational Sociology,* Vol. 13, April, 1940, pp. 449-512. An issue devoted to the above topic. The articles taken together constitute a valuable approach.

COUNTS, George S., *Education and the Promise of America,* Kappa Delta Pi Lecture Series, Vol. 17 (New York, The Macmillan Company, 1945), 157 pp. Brief but powerful challenge to the inherently possible accomplishment of education.

Department of Elementary School Principals, *Spiritual Values in the Elementary Schools, Twenty-Sixth Yearbook, National Elementary School Principals,* Vol. 27, September, 1947, pp. 1-351. An excellent introductory chapter on values with numerous illustrations of practices following.

DEWEY, John, *Experience and Education* (New York, The Macmillan Company, 1938). Especially important for Dewey makes clear his position on a number of issues facing the elementary school in the field of curriculum.

DEWHURST, J. Frederic and associates, *America's Needs and Resources* (New York, The Twentieth Century Fund, 1947), 812 pp. The most comprehensive analysis of trends and resources as compared to needs which is available, a comprehensive source book.

Educational Policies Commission, *The Unique Function of Education in American Democracy* (Washington, D. C., National Education Association, 1937). Charles Beard examines the development of our democratic society and relates the functions of education to these developing ideals.

———, *The Purposes of Education in American Democracy* (Washington, D. C., National Education Association, 1938). Contains the complete discussion of the formulation of purposes upon which section III of this chapter is based. This is the most authoritative formulation of objectives in the past two decades.

———, *Education for All American Children* (Washington, D. C., National Education Association, 1948). Part I describes educational programs of 1958 and Part II deals with curriculum, staff, administration, and community.

FRENCH, Will, *Education and Social Dividends* (New York, The Macmillan Company, 1935). Valuable for understanding relations between education and society.

HAMILTON, James T., 6000 *Kids from* 46 *States* (Vanport City Schools, Oregon, 1947), 100 pp. A dramatic and thrilling story of a school program established "overnight" in the world's largest housing project. (These schools were as dramatically wiped out by the Columbia River in 1948 as they had been created by the government in 1942-1943.)

HARAP, Henry, and others, *The Changing Curriculum* (New York, Appleton-Century-Crofts, Inc., 1937), Chs. I and III. A presentation of issues and functions of curriculum.

HILDRETH, Gertrude, *Child Growth Through Education* (New York, Ronald Press Company, 1948). Chapter I deals with education and life today.

HOCKETT, John A., and JACOBSEN, E. W., *Modern Practices in the Elementary School* (Boston, Ginn and Company, 1943), Chapter I, current trends in elementary education are briefly discussed.

LANE, Robert Hill, *The Teacher in the Modern Elementary School* (Boston, Houghton Mifflin Company, 1941). Chapters I and IV are valuable for a philosophy of elementary education.

MACOMBER, Freeman Glenn, *Guiding Child Development in the Elementary School* (New York, American Book Company, 1941). Chapter XIII outlines the foundations of progressive educational practice.

MELVIN, A. Gordon, *The Activity Program* (New York, Reynal and Hitchcock, 1936), pp. 1-72. Stresses the need for the reorganization of the school in terms of experiences.

OTTO, Henry J., *Elementary School Organization and Administration* (New York, Appleton-Century-Crofts, Inc., 1944), Chs. I and II. Summarizes presentations of elementary-school purposes.

RUGG, Harold, and others, *Democracy and the Curriculum* (New York, Appleton-Century-Crofts, Inc., 1939). Paints a picture of our changing American scene and its significance for education. Valuable for understanding the orientation of the purposes of education in a culture.

RUGG, Harold, *Foundations for American Education* (Yonkers, World Book Company, 1947), 826 pp. Offers key concepts from "the four foundations" of American education —a new biopsychology, a new sociology, a new esthetic, a new ethics.

STRATEMEYER, Florence B., and others, *Developing a Curriculum for Modern Living* (New York, Bureau of Publications, Teachers College, Columbia University, 1947). Outlines curriculum suggestions based upon personal and broader social needs of children.

WARNER, W. Lloyd, HAVIGHURST, Robert J., and LOEB, Martin B., *Who Shall be Educated?* (New York, Harper and Brothers, 1944), 190 pp. A fascinating analysis with implications for teachers of the social structure operating in the United States. This is a *must* for all teachers and administrators.

WRIGHTSTONE, J. Wayne, *Appraisal of Newer Elementary School Practices* (New York, Teachers College, Columbia University, 1938), pp. 6-10. An excellent chapter on the origins and development of the experimental public schools.

2

The Child As a Growing Organism

The child is born, grows, and becomes a man. What is this process of growth? It changes an infant into an adult, a creature entirely dependent on others to one who has developed independence and interdependence, one who can make only random movements into one whose movements are controlled by volition or habit. We could go on indefinitely drawing comparisons, but this is sufficient to show that growth is far from simply an increase in height and weight. A child develops and grows in every way in which he functions. Certain developments are fast, others slow; some early, some late; some simple, some complex.

The purpose of this chapter is to present snap-shots of this developing child from as many angles as possible and where pertinent to have the "movie camera" follow certain phases giving the developmental story. In order to talk about him and look at him it is necessary to focus on only one phase at a time. We must never forget it is still an integral, interdependent, and interacting part of this total being we call a *child.* Prescott[1] points this up by saying:

"One result of the scientific study of human beings is especially influential in shaping the current trend of research and experimentation. There has recently come the recognition that a child is an indivisible unity. Separate provision cannot be made for his physical growth, for his intellectual development, for his social functioning, for his character training, and for his emotional adjustment to life. When the school deals with one aspect of his growth or development it influences all of them. The school must recognize and evaluate all the effects of that influence. Educational practice must not continue to exert an unwholesome influence in one direction in order to accomplish a desired result in another."

In general, children may be studied as to their physical growth, mental growth, academic growth, social development, and personality. Physical growth is, to a certain extent, an indication of health, but largely depends on heredity. Mental growth also shows considerable relationship with heredity, but may be influenced by extreme ill health, malnutrition, or by a very challenging, an emotionally disturbing, or a very deadening environment. There is a slight positive relationship with physical growth. Academic growth depends on mental growth and a favorable environment. Variations in personality depend somewhat on the physical health of the child and on extreme glandular imbalance, but very largely on the

[1] Daniel A. Prescott, "Human Development in the Elementary School," *Childhood Education,* Vol. 18, September, 1941, p. 9.

environment, particularly on the attitudes and personalities of those about him. Social and moral development are dependent on maturation and experience.

Foremost educational writers of today agree on the importance of the implications of child growth for those dealing with children. Olson and Hughes [2] say that the child "seeks experiences for which his growth makes him ready and rejects those for which he is not ready. This has a pointed implication for the teacher."

Prescott [3] says, "each stage in the growth cycle has developmental tasks peculiar to it."

Then Jersild [4] draws the conclusion that "much of the time spent in trying to produce changes that are out of season with the child's growth might be better spent in helping him acquire skills that not only are seasonable but also will have future value."

I. GROWTH OF PRESCHOOL CHILDREN—ITS SIGNIFICANCE

The bulk of the research and study dealing with growth, aside from physical measurements and intelligence testing, is with preschool children. This is valuable from several points of view. It helps us get a clear picture of the development of the child up to the time he arrives in school. It demonstrates techniques that may be used with value or modified for use with older children. It furnishes incentive for similar studies which are sorely needed at higher levels.

Some principles evolve. Aside from these generalities, this preschool study does give some valuable principles. One of these is that mass activity precedes specific behavior. Learning is a process of differentiating and selecting certain activities from larger units of behavior. This differentiation or specification leads to building a new pattern, acquiring a new concept, a new integration, certain particular concepts from a general one.

A simple illustration is in the development of the concept of animals by young children. In the beginning all dogs are classified under the name of their own pet. Gradually through meaningful experience different characteristics stand out. They begin to differentiate between them. Next follows a reintegration of these differentiated particulars, and there emerge the concepts of "my dog," and "strange dog." This process is repeated until differentiation and classification have resulted in a rather complete understanding of dogs, their breeds and characteristics.

[2] Willard C. Olson and Byron O. Hughes, "Concepts of Growth—Their Significance to Teachers," *Childhood Education,* Vol. 22, Oct., 1944, pp 53-63.

[3] Daniel A. Prescott, "Recent Progress in the Understanding of Pupil Growth and Development and the Factors that Influence Learning," *Supplementary Educational Monograph,* Vol. 52, (Chicago, Ill., 1941), p. 39.

[4] Arthur T. Jersild, "Play Along with Growth," *Educational Leadership,* Vol. 3 April 1946, pp. 322-324.

Muscular development and control goes from the large muscle activity to the accessory muscle, from the handling of large units to the use of smaller ones, from more general activity to more specific. A child uses his arms for many things such as throwing balls, swinging, and playing with large toys. Later on he is able to thread beads, cut paper, and manipulate a pencil.

Another general principle which research has shown is that growth is a continuous development. As has been said, some factors develop faster or earlier than others, but during the period of development the growth is continuous. It may be gradually accelerating or retarding, but there is little of the spurt-stop type.[5] Physical and mental growth are continuous from before birth to maturity. A child's attention span grows gradually from a few seconds at birth to an hour or more by the time he reaches adulthood. Other factors show in general the same type of development.

II. GROWTH OF THE PHYSICAL BODY

Growth in size. The first and most obvious phase of growth is growth in bodily size. Most schools have some provision for weighing and measuring every child each year. Often this is all that happens—nothing is done about it. More often reports are sent to the teachers or the parents, or both, giving the measurements and the amount the child deviates in weight from the "normal."

"Normal" is taken from tables derived from measuring and weighing thousands of children and averaging the various weights obtained for each height at each age level. Of course this gives some idea of what most children of a given height and age do weigh. Too many physicians, nurses, or teachers take these tables as "standards of attainment." Even where a ten per cent leeway has been allowed, great injustice may be done a child. No consideration has been given to general build. Dearborn and Rothney[6] believe that weight tables should be built on an equation including width and depth of chest and width of iliac as well as height and age. They find so much overlapping of measurements for various age groups that deviation from an average is unimportant. They believe that a judgment of a child's physical status should be in relation to his physical status in the past rather than to arbitrary group standards.[7] One only needs to consider the difference in weight between the small-boned child of slender build and the broad-shouldered barrel-chested one to see that the difference may well be far more than ten per cent of "normal weight," and still both be at their own best weight. A child's weight must be con-

[5] W. H. Burton, *The Guidance of Learning Activities* (New York, Appleton-Century-Crofts, Inc., 1944), p. 175.

[6] Walter F. Dearborn and John W. M. Rothney, *Predicting the Child's Development*, (Cambridge, Mass., Science Art Publishers, 1941), p. 310.

[7] *Ibid.*, p. 343.

sidered in relation to himself as well as to a set of norms. Grave injustice, physically and psychologically, may be done where a child is arbitrarily branded "too thin" or "too fat."

Unexpected changes in the pattern of an individual child's growth may be more meaningful than the figures for any one particular time.

> For example, a pupil whose growth for several years has followed in general the course which previous measures have led us to expect, obtains suddenly quite a different measure. This change will indicate the desirability of a careful investigation of the pupil in respect to health, social environment, economic status, emotional upset, glandular change, etc.[8]

This, of course, implies the necessity for cumulative records and, also, for a broad and thorough follow-up. If we do not provide for both of these any physical examination program is of doubtful value.

Size and personality. Height, weight, and general physical proportions have more to do with personality and development than is usually recognized. The small child is often "left out of things" because he cannot compete on the same level. He either retires into himself and becomes introverted or he fights for his place and develops defense reactions which make him appear pugnacious, egotistical or "cocky." Or, he may compensate by becoming extremely studious, or by developing some special talent to win himself recognition.

The especially tall child may also find himself "out of things" and may develop similar compensations. Or, he may find himself a leader, a position which he may or may not use to his own best development. The very thin child who has little physical stamina and the very fat child who cannot handle himself well—both have similar problems.

The responsibility of the teacher is to recognize these problems and the inherent possibilities and so to organize situations as to give valid and worth-while satisfactions to each of these children, to make it possible for each to achieve legitimately the recognition of his classmates.

Posture. Posture patterns are acquired, and the school has considerable responsibility for their acquisition. This responsibility is in two directions: the direct physical training, and the style and management of seating. The physical-training program should include much free play and definite training in the ability to relax. These will be discussed in Chapter 13. Seating is a very definite problem of the school and a primary responsibility of the teacher. Little is usually done in this beyond the crudest preliminaries. Most teachers have no valid basis for accurate seating.

Tables and chairs can be bought in different heights. Chairs can be obtained with differences of two inches. These are not closely enough graded to fit adequately even the majority of the children. Wooden chairs are made with the same intervals of height but can easily be adjusted by

[8] *Ibid.*, p. 232.

sawing off the legs. By sawing off an inch from half the chairs, the gradation then becomes an inch instead of two inches. This is better, but it is better still to have them sawed to one-half inch differences.

The problem of the tables is not quite so bad, for it is not as important to have that height fitted as closely as that of the chair. However, when groups of four or six sit at one table, unless the children are arranged by size, the problem can become even greater. One administrator solved the problem in this way. When the old-fashioned desks were discarded in favor of tables and chairs, a group of fathers were enlisted. They took the tops from the old desks and sanded them down and refinished them. Lumber was bought and new legs were added. Each child was fitted to a table. Then when groups were formed each child brought his own table to the group. If he wished to work alone, his table could be moved away. This made for an extremely flexible arrangement. Children could work in any sized groups desired and could be organized and reorganized without concern for the comfort of their working conditions. The only drawback was that the table for the group was not perfectly level. While this was a disadvantage in some instances, it was felt that the advantages far outweighed the disadvantages.

For those who still have the "fastened down" desks Inskeep[9] says this: seats should be the height of the protuberance of the shin bone (tibia) just below the knee. The desk should overlap the edge of the seat one and one-half inches. It should be just the right height to rest the elbows on without raising or lowering shoulders. These tests can be very easily made and with a little assistance from the janitor can do much to insure a proper seating situation. Incorrect seating has many unhappy results. Restlessness with its attendant evils and useless expenditure of energy are the lesser of the difficulties. Curvatures of the spine is a frequent result. If the seat is too high or the desk too far above the seat, the child may sit on his foot to make himself more comfortable. He may find it necessary to twist himself to find a comfortable position. Continued practice of either of these habits often leads to the curvature.

Eyes. The entering of school marks the beginning of an enormous increase in the use of the eyes for relatively fine or close work. Until recently it has been generally accepted that a child entering school could "see" as well as any one. Oculists have been combining forces with educators and several important findings have been brought to light. On entering school the child is far-sighted. This means that he cannot and should not look at small things close by. It is very likely that much of this may cause near-sightedness to develop. The eye does not reach its full weight until after the age of seven, and it is several years later that it reaches its full development. There is a fairly simple machine for checking the development of the eye which may be used with children who

[9] Annie Dolman Inskeep, *Child Adjustment in Relation to Growth and Development* (New York, Appleton-Century-Crofts, Inc., 1930), p. 254.

are having reading or other difficulties which may be a result of incomplete or poor eye development. The instrument is discussed at greater length in Chapter 13.

The British Association for the Advancement of Science appointed a Committee to Inquire into the Influence of Textbooks upon Eyesight. This group published a set of standards for the printing to be used in school books. These are as follows: [10]

24-point type for under 7 years
18-point type for 7 to 8 years
12-point type for 8 to 9 years
11-point type for 9 to 12 years
10-point type for from there on

They also stated that the lines should be short, that is, 2.36 to 3.15 inches with none over 3.54 inches. The space between the line is also important and also may decrease as the child grows older.

The basis for these conclusions is not clearly given and probably is largely based on assumption. Before and since that time studies have been made but all have been inconclusive, either because of the small number of cases or the oversimplification of the experiment. Size of type was studied without regard to length of line or interlinear spacing, or the length of line without regard to the other two factors. In 1931 a study [11] was reported which was much more comprehensive and thorough.

Each of 779 second-grade children read three selections of each of eighteen sample set-ups. These included three sizes of type, each set in three different line lengths, each with two or three different interlinear spacings. Tests were made for speed and comprehension of reading. When both these factors were considered the answer seemed to be twelve-point type in lines $2\frac{7}{16}$ inches or $3\frac{1}{2}$ inches long with three or preferably four point leading (making 3.25 or 3.60 mm. total interlinear spacing). These standards also make for relatively inexpensive printing.

EXAMPLES OF TYPE AND SPACING RECOMMENDED IN BUCKINGHAM'S STUDY *

The night was so warm that Rob could not get to sleep. His mother had pushed his bed

The night was so warm that
Rob could not get to sleep. His
mother had pushed his bed

[10] Report of the Eighty-Third Meeting of the British Association for the Advancement of Science, Birmingham, 1913 (London, John Murray, 1914), pp. 268-300.

[11] B. R. Buckingham, "New Data on the Typography of Textbooks." *Thirtieth Yearbook* of National Society for the Study of Education, Part II (Bloomington, Ill., Public School Publishing Co., 1931), pp. 93-125.

* For further reference see *Thirtieth Yearbook* of National Society for the Study of Education, Part II, pp. 106-110.

The night was so warm that Rob could not get to sleep. His mother had pushed his bed

The night was so warm that Rob could not get to sleep. His mother had pushed his bed

One factor which the author has not apparently considered, is whether this layout would be the optimum for continued reading. Perhaps the factor of eye-strain should also be taken into account. Though it may have automatically been taken care of, there is the definite possibility that it has not.

Tentative standards for average adult reading are suggested by Luckiesh and Moss.[12] They are twelve-point type on nine- or 10-centimeter lines, with one-tenth inch leading.

Since then Paterson and Tinker have conducted a great number of studies of the effect of typography on reading. They published a manual[13] for typographers, printers, and advertisers, based on twelve years of research involving speed of reading tests given to 33,031 persons. Since then they have continued to run studies but have still reached no final answer. They find that:

> a text with 4 and 5 point leading is judged to be most legible. This agrees with speed of reading results.[14]

They find that type form affects significantly the perceptual span in reading. With all available facts considered they give the optimal arrangement as:

> 10-point type with 2-point leading and a 19-pica line width, block print on white eggshell paper.[15]

III. GROWTH OF MUSCULAR CONTROL

The school should give much more attention to muscular development and control than heretofore. There are three main phases: proper exercise, proper tools, and proper rest. The first two are closely related.

Exercise. Proper exercise is perhaps the most important phase of muscular development and control. It must be considered from two stand-

[12] Matthew Luckiesh and Frank K. Moss, *The Science of Seeing* (New York, D. Van Nostrand Company, Inc., 1937), Ch. XIII.

[13] Donald G. Paterson and Miles A. Tinker, *How to Make Type Readable* (New York, Harper and Brothers, 1940), 209 pp.

[14] Donald G. Paterson and Miles A. Tinker, "Influence of Leading Upon Newspaper Type," *Journal of Applied Psychology*, Vol. 31, April, 1947, pp. 160-163.

[15] Donald G. Paterson and Miles A. Tinker, "The Effect of Typography upon the Perceptual Span in Reading," *American Journal of Psychology*, Vol. 60, July, 1947, pp. 388-396.

points. There is the planned activity and exercise, the main purpose of which is this very development and control. This is a part of the physical-education program which is discussed in Chapter 13. The second is the use of these muscles in activities mainly for other purposes. This includes all the physical activity connected with the remainder of the regular school program. Some of these are considered in this chapter in other connections. The importance of the proper tools and their use are discussed here.

It is important that consideration be given to the demands made on motor coördination. Dawdling may be a normal indifference to social requirements but it may also be a result of too heavy demands. In such cases it may be "a protective kind of negativism or filibustering." [16]

Tools and how to use them. Certain implications of muscle development and control should be noted here. For young children a'l toys should be large with few small parts to manipulate. Writing should either be on the blackboard or on paper with lines wide spaced. There will be a great deal of difference in writing readiness. Requirements should be very flexible and suited to each child's development and interests. When writing on paper is introduced, the lines should probably be at least one to two inches apart and not be reduced to much less than an inch before the end of the second grade. Pencils should be large both as to size of pencil and size of lead, and not perfectly round nor too smooth. Small pencils or those that are slippery to hold cause the child to tense the muscles in his hand as well as those in the rest of his body. Tense muscles are not being trained but strained. This, in turn, is apt to cause the child to dislike not only the mechanics of writing but also the materials connected with the writing, such as stories, spelling, or even reading. Pencils with hard leads and writing with fine lines strain the child's eyes as well.

Large muscles. In the primary grades there should be plenty of free bodily movement. There should be free use of floor space for creative projects where they can hammer and saw and daub and "mess." [17] Particularly in kindergarten and the first two grades the art work should be on the board with colored chalk, on an easel in the form of poster work, or at least on large sheets on the desks or tables. The media should be easy to manipulate and of the type which tends to make the child use large sweeping strokes and strive for general effect, rather than fine work that calls for detail. This will be further discussed in Chapter 14. Driscoll [18] gives some clues for judging motor development at this level. She says that children of six are usually sufficiently developed physically to put on their own coats and tie their own shoe laces, but many children in the

[16] Marian E. Breckenridge and E. Lee Vincent, *Child Development* (Philadelphia, W. B. Saunders Company, 1943), pp. 334-335.

[17] *Ibid.*, p. 302.

[18] Gertrude Driscoll, *How to Study the Behavior of Children* (New York, Bureau of Publications, Teachers College, Columbia University, 1941).

third grade still struggle with these tasks. Buttons should be managed easily, if they are large, by children in the first and second grades.

Accessory muscles. Between the ages of eight and twelve, or roughly in grades three through six, is the best time to lay the foundation for accessory muscle work. A gradual increase in the use of the accessory muscles should be brought about by gradually decreasing the size of materials used. Care should be taken not to do this too fast or carry it to too great extremes, of course.

New activities which gradually develop the muscles may be introduced. Inskeep[19] believes that if children ever are to play musical instruments, draw, write, or sew well, they must lay the basis during these years. If this is accepted, it has wide implications for school practices at this level. Some schools are already organizing bands and orchestras in the elementary grades. It would seem that this practice should be extended and encouraged wherever possible. When school finances do not permit, the school at least could interest the child in learning to play some musical instrument by study and appreciation of both the instrument and the music. Drawing and writing are generally taught at this level. Perhaps more attention should be given to students who show interest and potential ability in art. If training facilities are limited, at least the child may be encouraged to develop his own ability or secure training outside the school. Some schools start sewing projects for girls in the fifth or sixth grade. With the newer methods of teaching, there is no reason why sewing could not become a phase of a unit on any level (such as making costumes for the dramatization of the unit) and boys as well as girls should have their part. If properly approached at these levels, boys may become just as interested and proficient as girls.

There can be more bodily control so that the children can do more complicated dancing and games. Ball games of various sorts should be developed now. Training should be given now so that all can attain a certain proficiency, since physical skills are so important for social contacts.

Again fundamental muscles. The next developmental period is from twelve to fifteen, roughly grades seven through nine. This again is a period of fundamental muscle development. This being the period of adolescence, the too close use of accessory muscles involves emotional and nervous factors. Particularly at this level the use of the large muscles, rather than the accessory ones, to do any particular job should be stressed. In many ways both the boys at shopwork and the girls at housekeeping tasks should be taught to use tools and implements with fundamental muscular movements rather than with fingers which call for accessory muscular movements. It saves much nervous energy and thus makes many tasks easier and hence better liked by the students. *All* courses in which any muscular action takes place should study the activities to find where

[19] Inskeep, *op. cit.*, p. 97.

such emphasis could be made and then make a definite point of teaching it.

The school has a further responsibility in motor development. It must consider not only the present value but the future implications as well. Jersild [20] reports a study which is highly significant:

> In a study of men in their twenties and beyond, it was found that the things they did with their hands during their spare time was influenced to a large degree by what they had learned to do when they were children. The study revealed that men did not, as a rule, take up entirely new motor skills after they reached mature years. Moreover, most of the skills they had acquired as children and now put to use as adults were learned outside the school. Such learnings, in turn, appeared to be subject to the caprice of opportunity.

This is quite an indictment for schools which declare one of their major objectives to be the worthy use of leisure time. There are many opportunities in the first six grades which could be offered to all children, each then being allowed to follow those which he enjoyed the most. There is carving and clay modeling, and construction with hammer and nails, and the building of models, and radio building and train building, and ping pong and tennis, and the playing of various musical instruments, and so on indefinitely. It seems that the school has a responsibility to encourage each child to find some hobby which involves work with his hands. It should not, as is too often the case, be allowed only when the teacher can't find anything else to keep the child busy.

Rest. The third phase of muscular development for which the school is responsible is rest. This may mean opportunities to lie down or sit down, or it may mean opportunities for vigorous activity. Rest is change. The younger the child, the more rest is needed; that is, the more frequent the change that is needed. In the kindergarten and first two grades, fifteen minutes is as long as a child should sit still at one time. In grades three and four they may sit for twenty or twenty-five minutes at a time, in grades five and six, a half hour, and grades seven and eight, forty minutes. These periods should be broken by short periods of vigorous activity or longer periods of freedom to move about the room. Keliher [21] stresses the need for continued emphasis on a correct physical regime, not a five-hour day of sitting, but exercises, free body activity, use of large supporting muscles, and *rest.*

Complete physical relaxation is also extremely important. This is particularly true with the younger children and with the child who tends to be excitable and emotionally tense. Relaxation is possible to obtain in almost any situation. If the school cannot furnish mats, the pupils can

[20] Arthur T. Jersild, *Child Development and the Curriculum* (New York, Bureau of Publications, Teachers College, Columbia University, 1946), p. 135.

[21] Alice V. Keliher, "Some Developmental Factors in Children—Two to Eight," *Growth and Development: The Basis for Educational Programs* (New York, Progressive Education Association, 1936), pp. 44-51.

bring old blankets or quilts from home which they can lie on and throw over themselves.

There is no reason why this must or should be confined to the primary grades. In schools where every child from five to twelve was required to rest from one-half to three-quarters of an hour after lunch 80% of them slept.[22] Most children stop napping because of lack of opportunity or of unfavorable adult attitudes. When so many adults find a short rest or nap beneficial, why should we expect growing, active children to do without it?

Rate of development of boys and girls. A very important phase of this study of the development of muscular control is seldom given consideration in discussions and almost never in the classroom. This is the difference in rate of development of boys and girls. "The motor control of school children seems to be specific. In most tests of physical achievement, boys excel; in steadiness girls seem to excel. Boys were superior in simple mechanical movements, but girls were markedly superior in compound and controlled movements." [23] This seems to be explained by the greater natural strength of the boy and the fact that girls mature physically faster than boys do.

This faster development begins early, so that by the time the child enters school there is a real difference, and by the time they enter high school the difference is still greater. By second grade the girl is actually a year older physically than the boy, because she is a year nearer her final development.[24] This means that she does not tire as quickly and so can sit longer without fidgeting. She can use her eyes longer, and her muscular grasp of pencil, crayon, and scissors is surer. She is ready to use her accessory muscles sooner and has better control of them. At least by eight years, girls appear to maintain a longer attention span than boys of the same age.[25] The implications in terms of successfully meeting the school situation are apparent.

The physical problem here is of great importance, but the psychological problem is many times greater. Any one familiar with the school-room knows that to a great extent, the problem children are boys. They are discipline problems; their writing can't be read; anything that has to be written out is avoided or sketchily done; and many of them hate the art work. No one can say without considerably more study just what are all the factors involved, but without doubt, one of the main ones is this very factor of sex differences in the development of muscular control. If a

[22] Mary Elizabeth Evans, "Nursery School Lessons Learned in Wartime," *Journal of Home Economics*, Vol. 38, May, 1946, pp. 257-260.

[23] White House Conference on Child Health and Protection, *Growth and Development of the Child*, Part IV (New York, Appleton-Century-Crofts, Inc., 1932), p. 100.

[24] Paul L. Boynton, *Psychology of Child Development* (Minneapolis, Minn., Educational Publishers, Inc., 1938), p. 118. This is shown graphically. Inskeep, *op. cit.*, p. 19.

[25] Ruth Strang, *An Introduction to Child Study*, rev. ed. (New York, The Macmillan Company, 1938), p. 322.

group of six-year-olds was placed with seven-year-olds, given the same work and held to the same standards, there are few teachers who would not see the problem which the younger children face. If further than that, the older children were constantly held up before the younger group as exemplifying the type of work they should be doing and the way they should be behaving, it is easy to see the tremendous psychological and emotional strain which the younger group would suffer. Yet this is exactly what is happening. The boys who are more immature physically have to compete with the girls. When their fingers do not guide the pencil as expertly nor the brush as artistically, or when their tired and strained little muscles rebel, and they start twisting and turning in their seats to get relief, they are branded as naughty and failures, and the superior accomplishments of the girls are held up as models. Attitudes may be developed here that will persist through all schooling.

Boys are further handicapped many times by lack of understanding on the part of the teacher. A girl's code of social behavior is normally more like a woman's, and a boy's like a man's. But usually standards and codes are set by women teachers, and too often by those who have had no personal experiences with growing boys outside the classroom. Normal development and normal behavior of boys should be taken into consideration in planning a program for them. Under present practice, no wonder many a teacher says, "The boys are my problem." She has made them so.

From about eleven to thirteen the girl is all of two years nearer her final development than is the boy. Although this has been recognized in a general way by many, little if anything has been done to take care of it in the school situation.

One caution to use in applying any of these principles is that here, as elsewhere, there are great individual differences. Some six-year-olds may be more ready for accessory muscular development than some nine-year-olds; some kindergarteners can sit still better than some eighth-graders; and some boys have better development than some girls several years their seniors. Each case is an individual problem, but the discussion of these average situations may be a good starting point and basis for general practices.

IV. GROWTH OF INTELLIGENCE

What is intelligence? Intelligence has had innumerable definitions, and there is still no complete agreement as to what is meant. However, the discrepancies are probably more fancied than real, more a quibbling over words than a real and important basic difference in concept. In general, intelligence may be said to be that characteristic of a person which determines his ability to make adequate responses and adjustments to his environment.

There are various theories concerning intelligence, such as those pro-

pounded by Thorndike and Spearman, but they have little implication here. The research reported here is equally valid regardless of the theory of intelligence that is held.

The growth of intelligence has had an enormous amount of study. Scientific study began with Binet's work and has still a long way to go to achieve an adequate answer. Physical growth is measured directly in standard, universally accepted units of height and weight. Intelligence must be measured indirectly by the observations of its use. Though the units, years and months, are universally accepted, the means of obtaining these measurements are the basis of much controversy.

The measurement of mental growth is dependent upon intelligence tests. These intelligence tests are of various forms, types, and kinds. There are performance tests that require mechanical manipulation and response to a concrete situation. There are verbal tests that require the understanding of verbal statements and a response in verbal form. There are "pencil and paper" tests that require the interpretation of printed material and a response in written form. These last two types may present a wide variety of situations and sample a large number of kinds of reactions. The first two types of tests are usually given individually and the third type is given to a group. Within each classification there is a large number of different tests. When administered, these tests do not give identical results. To a certain extent they measure different abilities; they are more or less valid and reliable; and they and their methods of standardization vary.

What do we know? The problem has been enormous, the number of experiments and studies legion, but order is coming out of chaos and some facts are apparently established. Some of these are:

The growth of intelligence is continuous and constant from birth, or before, until some undetermined time, perhaps until thirty, but with the rate of growth decreasing rapidly after twenty or earlier.[26]

The growth is gradual with no sharp delineations between stages.

The growth of intelligence is measured in terms of years and months and expressed as mental age.

There is great variation in the rate of development in different children.

The rate of increase in mental age in relation to chronological age determines the brightness or intelligence of the child (IQ).

This rate of increase is relatively constant, hence the general acceptance of the constancy of the IQ. This seems to hold true when the environment does not change radically for the child. Several studies (see pages 38-44), however, have shown that where the environment has been changed decisively enough to make changes in the child's reactions, changes in I.Q follow. These may be insignificant or may be vastly important, depending on circumstances.

What is the growth of intelligence? Growth of intelligence must not be confused with the acquisition of knowledges and skills, although the latter must be used to a certain extent as a means of measuring the for-

[26] Dearborn and Rothney, *op. cit.*, p. 342.

mer. Growth of intelligence is the increase in the ability to learn or adapt on levels of ever increasing complexity rather than being merely the amount learned or the adequacy with which one adapts to a particular situation.

As the individual develops mentally, he is able to understand and adjust on ever increasing levels. At any one level of development, he may understand or develop any amount of the materials, facts, and abilities on that level which time and inclination allow. But it is most difficult and a decided waste of time to attempt material on higher levels of understanding. When a person has reached his maximum intellectual growth, he has reached the greatest level of understanding that will probably ever be possible for that person. He may continue indefinitely to increase his knowledge and skill within those levels, but is doomed to almost certain failure if he attempts tasks requiring a higher level of understanding. Although the fund of knowledge a person has is usually in proportion to his level of understanding, this is not necessarily so. A less intelligent person with enthusiasm and perseverance may master an enormous body of facts and abilities within his level of understanding, while a person with considerably more intelligence and ability to understand on a much more complex level may be relatively barren of knowledge.

When does growth of intelligence cease? As to the cessation of the growth of intelligence among people of varying abilities the problem is still unsettled. Evidence has come from various sources. One rather comprehensive experiment gives evidence as far as the lower end of the scale is concerned. Kuhlmann [27] re-tested 639 feeble-minded children ranging from a low idiot level to almost normal and from one to twenty-one years. The conclusion was that their mental ages increased at a rate "proportionate to the degree of mental deficiency. Also the greater the deficiency, the sooner the mental growth appeared to cease." Other experiments have given evidence that this same condition may hold good at the other end of the scale and that the more intelligent the child, the longer his development may be expected to continue.

However, Freeman [28] draws other conclusions. By studying a group of 100 children in attendance at University of Chicago schools, which he divided into three groups on the basis of IQ's derived in the middle years, he noted these conditions:

> The children in the bright group begin to advance at an accelerated rate at about ten years of age. Their curve then advances more steeply for two or three years than do the curves of the other two groups. The curves of these bright children, however, begin to slow down sooner than do those of the others. None of the groups reach their complete development by seventeen, so that it is impos-

[27] F. Kuhlmann, "The Results of Repeated Mental Re-examinations of 639 Feeble-Minded Over a Period of Ten Years," *Journal of Applied Psychology*, Vol. 5, September, 1921, pp. 195-224.

[28] Frank N. Freeman, "Individual Differences in Mental Growth," *Scientific Monthly*, Vol. 37, September, 1933, pp. 263-266.

sible to say how far apart they will be when their growth reaches its final level. By seventeen, however, the upper curve is slowing up, whereas the lower group of children is continuing to advance at an undiminished rate.

Results of these two studies are given as typical of the varied and inconsistent results obtained from the many researches of this type. It seems fairly evident that those of lower intelligence continue growing mentally longer than was formerly supposed, whether or not this growth continues as long as that of the brighter child.

Thorndike's monumental study of 1922 to 1925 when the C.A.V.D. tests were developed puts a very rational, logical face on many phases of mental testing. In discussing the cessation of growth in intellectual level he bases his conclusions on the results of his study and several others as well. He says [29] there is no

> ... justification for the doctrine that the gain in altitude of intellect of the sort measured by existing intelligence tests is zero after 14, or after 15, or even after 16. It decreases, but it should not become inappreciable until 18 or later. According to our results, the decrease from 14 to 18 is not an abrupt slowing up of a gain that has been steady hitherto, but is part of a general negative acceleration which began long before the age of 6½.

This may throw some light on the question of cessation of growth at the lower end of the scale—the yearly growth being already small, much sooner diminishes to an unmeasurable amount. It was also Thorndike's belief that the age at which intelligence ceased increasing depended on the material with which intelligence was tested. Certain abilities might increase up to a certain age which was younger or older than the limit of some other ability. There are many things yet to be learned about the development of intelligence and its limits of growth.

Racial differences. There now exist slight differences between various races in what is measured as intelligence by our tests. However, the similarity is much greater than the differences.[30] And this must be considered, in every case the race which measures the lowest has great handicaps with which to contend. There is a difference in language, there is prejudice, there is lack of educational opportunity. Caucasians, faced with one or more of these handicaps, would not show up so well either.

Illustrations of intellectual growth. The growth of mental ability can be best illustrated from the various sub-tests in the Terman-Merrill revision of the Stanford-Binet.[31] In the standardization, each of the sub-tests were, generally speaking, so assigned to various age levels that 50 per cent

[29] Edward L. Thorndike, and others, *The Measurement of Intelligence* (New York, Teachers College, Columbia University, 1926), p. 467.

[30] Paul Witty and Sol Garfield, "Trends in Discussions of Intelligence: Race Differences," *Journal of Educational Psychology*, Vol. 33, Nov. 1942, pp. 584-594.

[31] Lewis M. Terman and Maud A. Merrill, *Directions for Administering Forms L and M—Revision of the Stanford-Binet Tests of Intelligence* (Boston, Houghton Mifflin Company, 1937).

of the children of that age failed and 50 per cent passed.[32] They are also passed by a larger percentage of older pupils and failed by a larger percentage of younger pupils. Thus, they illustrate to a certain extent the stage of development of the child's intelligence or mental growth.

Memory. Tests of memory which require the child to reproduce just what the examiner has said or shown, demonstrate the following development. At two years and a half, a child can repeat two digits; at three years, three digits; at four years and a half, four digits; at seven years, five digits; and at ten years, six digits. But it is not till the thirteenth year that he can be expected to repeat five unrelated one-syllable words. However, meaningful sentences are much easier. At five years he repeats a sentence of twelve syllables; at eight years, he repeats sixteen syllables; and at eleven years, he repeats twenty syllables.

These facts should be studied with some care, as there are several implications involved. First, it is a vivid illustration of the difference in memory for meaningful material and for that without any meaningful connection. At five a child can repeat more than twice as much meaningful material as a thirteen-year-old can repeat of material without meaning. An important point is that the material must have meaning for that particular child.

TABLE I

SOME OF THE MEMORY TESTS OF THE TERMAN-MERRILL STANDARD-BINET * AT VARIOUS AGE LEVELS

Age on Scale	*Ability to Repeat After Hearing*		
	Digits	*Meaningful Sentences (Syllables)*	*Unrelated Words*
2½	2		
3	3		
4½	4	12	
7	5		
8		16	
10	6		
11		20	
13			5

* Lewis M. Terman and Maud A. Merrill, *Directions for Administering Forms L and M—Revision of the Stanford-Binet Tests of Intelligence* (Boston, Houghton Mifflin Company, 1937).

The second implication is the basis for some of the principles of learning. It is really a very limited amount that can be repeated exactly after a single hearing, even when there is a minimum lapse of time. Thus, ideas and facts must be presented in small units. One must come back to them again and again if learning is expected to take place. The younger the child, the more this is true, but it is still true to a very large extent with all ages.

[32] Lewis M. Terman and Maud A. Merrill, *Measuring Intelligence* (Boston, Houghton Mifflin Company, 1937), p. 9.

Language comprehension. As far as vocabulary is concerned, that develops gradually through the child's school life. At six years he should know 5 of the words in the vocabulary test; at eight, 8 words; at ten, 11 words; and at twelve, 14 words. Some abstract words can be defined in the eleventh year. This in itself has little meaning except to show gradual progress. Growth in children's actual vocabularies is presented in Section V under language development. Opposite analogies such as "Brother is a boy; sister is a ——," or "A bird flies; a fish ——," can be given by the time the child enters school.

Motor coördination. The few tests used which have to do with motor coördination show two factors: First, they show the relative difficulty of drawing certain forms, and second, they show the time when such abilities may be expected to develop. At three and a half the child should be able to make a cross. At five he should be able to copy a square and at seven, a diamond. From nine on he should be able to copy from memory designs composed of straight lines but extending in various directions and at various angles.

Number concepts. Number concepts regardless of training, assuming normal experience, show development with age. At five years the child should count four objects. At six he should select the required number of blocks from a pile of twelve. By nine he should be able to make change from money up to a quarter, if either the expenditure or the change is less than five cents.

Higher thought processes. The higher thought processes involve many factors, of course. Comprehension tests show development when at three and a half he answers, "What must you do when you are thirsty?" or at four years he tells: "Why do we have houses?"; at seven he tells: "What's the thing for you to do when you have broken something that belongs to some one else?"; at eight he answers: "What makes a sail-boat move?"; and at eleven a problem situation is set up which he must explain. At thirteen a more complicated problem situation can be analyzed. At fourteen a problem is solved by inductive reasoning.

In verbal absurdities, that is, statements of situations that contain something absurd, the child may be able to locate the factor in question by the time he is eight. Development in this process is demonstrated by more difficult and subtle situations at succeeding age levels. At seven a child can tell some way in which two objects are alike. At eight he can give both a similarity and a difference. And at eleven he can see the similarity between three objects.

It is difficult to say when mental imagery is used and when it is not. But some situations are more appropriate than others. At nine years a child repeats four digits reversed; at twelve, five digits reversed. The problem in induction on the fourteen-year level calls for a more difficult type, if mental imagery is used.

This brief analysis may serve to show the development of various

abilities of the child as he grows at an average rate in an average environment, and to some extent the order and time of some phases of mental growth.

Is the IQ "constant"? Ever since the first studies involving retests of mental level, the IQ has been supposed to be constant. Variations where found were usually thought due to variations in some of the testing conditions and the unreliability of the tests. Some of the first studies to disturb the supposedly settled fact were reported in the *Twenty-Seventh Yearbook* of the National Society for the Study of Education.[33]

The next important study to further challenge the immutability of the IQ was by Stoddard and Wellman who have been doing considerable work on the IQ in the last twenty years at the Child Welfare Research Station of the University of Iowa. Their study dealt with the effect of schooling on the IQ. In 1932 Wellman reported [34] the effect of preschool attendance on the intelligence of some six hundred children at the school there. Two years later she reported on the effect on the IQ of schooling in different environments. Their findings were quite astounding.[35] In the particular school studied, they found substantial increases in IQ of the preschool children attending one or two years. The change occurred during the winter rather than the summer, was appreciably more for those attending two years than those attending just one. The third year had a noticeable effect, too. It does not seem possible that the practice effect of taking the test could account for the increases, as the amount of this factor is pretty well established. The increases were inversely proportional to the original intelligence level, the largest gains being made by the children with below average initial IQ, the next largest by the average children and so on, the extremely gifted showing no appreciable gain. The average IQ for the 194 children having one semester of preschool increased from about 112 to about 121. For the 90 children having two years of preschool, it increased from about 114 to about 126.

Wellman also found that when these children continued in the University school they continued to gain. Those children who transferred to other schools, maintained the gains established in preschool but in most cases did not make further increases. From this it would seem that increase in IQ was dependent, partially at least, on the type of school attended.

These findings have been bitterly attacked as are any findings which are in opposition to peoples' cherished beliefs. Some have claimed that the tests at that level are not valid but have not explained why the same tests still show differences between the two groups. Others object to the

[33] National Society for the Study of Education, *Nature and Nurture, Twenty-Seventh Yearbook*, Part I (Bloomington, Ill., Public School Publishing Co., 1928).

[34] Beth L. Wellman, "The Effect of Preschool Attendance upon the I.Q.," *Journal of Experimental Education*, Vol. 1, December, 1932, pp. 48-69.

[35] Beth L. Wellman, "Growth in Intelligence under Differing School Environments," *Journal of Experimental Education*, Vol. 3, December, 1934, pp. 59-83.

statistical methods used. More profitable than trying to settle this particular argument seems to be to see what others have found in similar investigations.

A summary of the literature was made [36] in which some fifty such articles were located. Most of the children were tested on a revision of the Binet, but some of them had the Merrill-Palmer test. The preschool group had attended nursery school for about one school year in most cases. The non-preschool children were of comparable ages but had not attended nursery school at all.

For those tested on the Binet the mean change per child was + 5.4 for the preschool group of 1537 children. For the non-preschool groups the mean change per child was + 0.5 for a total of 597 children. For those tested on the Merrill-Palmer the mean change per child was + 14.5 for 267 preschool children. The mean change for the non-preschool groups per child was +6.7 for 73 children. All children showed greater gains on the Merrill-Palmer than on the Binet and this is conceivably due to the standardization of the test. However, the contrast between the preschool and non-preschool groups still holds.

The consistency of the results of so many studies certainly gives us encouragement that children's ability can be improved. It seems more profitable to head our efforts toward finding practices and procedures which will accomplish such aims most effectively rather than quarreling over the statistics of a certain study.

One such study describes the type of experiences given to nursery school or kindergarten aged children. While the number of children was too small to add much to the already large body of research, the consistency of the results and the feeling of those working with the children make the study important.

"The group which had the analytic training improved significantly in mean score in intelligence quotient, in social quotient on the Vineland scale, in sociability on the Merrill-Palmer scale, and in personality as estimated from personal observation." [37]

Miss Leahy has conducted one of the more comprehensive studies [38] of the changes in intelligence of children placed in foster homes. Her conclusion is that a child's IQ may change on the average of three or four points up or down, depending on the type of home in which he is placed. This is not far from the usual result obtained from such studies. There is always a fairly wide variation of IQ changes, but the average is about

[36] Beth Wellman, "I.Q. Changes of Preschool and Non-Preschool Groups During the Preschool Years: A Summary of the Literature," *Journal of Psychology*, Vol. 20, October, 1945, pp. 347-368.

[37] Charles C. Peters and Agnes R. McElwee, "Improving Functioning Intelligence by Analytical Training in a Nursery School," *Elementary School Journal*, Vol. 45, December, 1944, p. 213.

[38] Alice M. Leahy, "Nature-Nurture and Intelligence," *Genetic Psychology Monographs*, Vol. 17, No. 4 (1935), pp. 235-306.

as she finds or a little more.[39] In light of recent developments it may be the range and not the average of changes with which we should be concerned. There are a few downward changes and some which show a gain of twenty or more points. We have been losing sight of the most significant data by being concerned only with statistical averages. If we ask what is the most we can possibly expect from a child under the most favorable conditions, we get a very different answer from that if we ask what will be the average gain of all children under a mixture of good, bad, and indifferent conditions. For developing educational plans and philosophy, the first is the much more meaningful.

There is also a question as to whether or not the really pertinent factors in such studies are given due prominence. Too often a rating on a socio-economic scale is the criterion for the type of home. The thing that seems to be of value to the child is whether his environment is stimulating, whether he is given opportunity and encouragement to develop his own abilities, whether he is presented with situations really challenging to him so that his interest and effort toward development are continuous. When we can judge home situations on such bases, we may find a different picture.

A more recent follow-up study of children in adoptive homes presents most interesting and hopeful data. The children in the study were placed before they were six months old in above average and superior homes. The children whose mothers were mentally defective have continued to show average and above average rates of development and cannot be differentiated from the total group on the basis of intelligence. When they were an average of 7.7 years old they continued to show a mental development which is consistent with expectations from the children in homes of the same socio-economic level as the foster parents. The children continue to be markedly superior to the intelligence level of the true parents as measured by tests and as indicated by information relating to education and occupational level.[40]

The next significant study to be reported is the Harvard Growth Study,[41] which began in the fall of 1922 and continued for twelve years. The material was studied, summarized, and published by 1941. It is a longitudinal study, which has many advantages over the cross-sectional study. It probably represents the best of its kind as regards number of cases and length of records. Another study[42] is in progress which involves a smaller number of cases over a longer period of time, studies children from birth on, and uses a wider range of data.

The completed study involved measurements of 3500 boys and girls

[39] See *Twenty-Seventh Yearbook* of the National Society for the Study of Education.

[40] Marie Skodak and Harold M. Skeels, "A Follow-up Study of Children in Adoptive Homes," *Journal of Genetic Psychology*, Vol. 66, March, 1945, pp. 21-58.

[41] Walter F. Dearborn and John W. M. Rothney, *Predicting the Child's Development* (Cambridge, Mass., Science-Art Publishers, 1941).

[42] Harold C. Stuart and staff. Another Harvard Growth Study begun in 1930.

entering first grade, with follow-up measurements for the next twelve years. The measurements included were physical, mental, and educational. Many interesting results were reported, but light is shed on our present problem by the following findings:

> Growth, both mental and physical, seems to be characterized not infrequently by cycles. Whether these cycles are due to a biological mechanism or to environmental factors, defined so as to include internal stimuli, or both, remains yet to be determined. Our best guess is that they are due to both. It is conceivable, however, that environment, as defined above, is the dominant factor.
>
> One recalls the learning curve in this connection. It was first thought that the plateaus of the learning curve were necessary. Now there is evidence that under the proper motivation these plateaus need not occur. To what extent we may minimize the cycles of mental growth by providing the proper motivation and stimuli for the growing pupil remains to be seen.[43]

At another point the authors say that their findings allow them to suggest some very tentative conclusions. One is that

> In general, girls tend to remain throughout their period of mental growth to age sixteen in the same classification as they were at age eight. Girls who are very high in mental tests at an early age are apt to make lower scores and move down toward the mean at maturity. Girls who score very low on mental tests at an early age have about an even chance to score higher at maturity. Those children who score near the average to begin with are apt to remain near the average at maturity.[44]

Even more significant perhaps is this statement:

> The charts and figures... reveal that great variation exists among cases. According to the average curves one might judge that cases having identical mental ages at age eight would have approximately identical mental ages at age sixteen, but we find that individual fluctuations have been covered up in the smooth average curve. We cannot predict with certainty that a girl who has a superior mental age at age eight will remain superior at age sixteen, or that children who start out below the average at an early age may not rise above the average at maturity.[45]

Again we see that by talking about averages we may have been concealing the much more significant information as to what can happen to individuals.

The report on a single case also seems pertinent at this point. Murphy reports that a four-year-old was not making normal development and showed an IQ of 65. With psychiatric help and guidance this went to 140 over a period of years. She goes on to say, "We do not say that all instances of severely retarded children in normal families are due to emotional stress, but we have seen enough of such instances to be sure that psychiatric help can often succeed with such children."[46] There is noth-

[43] Dearborn and Rothney, *op. cit.*, p. 232.

[44] *Ibid.*, p. 186.

[45] *Ibid.*, p. 184.

[46] Lois Barclay Murphy, "Who Are the Children Who Need Psychiatric Guidance?" *Journal of Home Economics*, Vol. 39, January, 1947, pp. 27-29.

ing peculiarly different about "normal families" to make this type of help applicable only to them. The question is open as to which children and to what extent psychiatric help might be effective.

The next important study which throws new light on mental development provides a great deal of food for thought. It is the work of Bernadine Schmidt who studied the "Changes in Personal, Social, and Intellectual Behavior of Children Originally Classified as Feeble-minded." [47] The results [48] she obtained were more astounding than any previously reported and have been severely criticized. After some preliminary study and experimentation Dr. Schmidt set up a controlled experiment. The experimental group was comprised of 254 boys and girls between the ages of twelve and fourteen, all of whom were classified as feeble-minded on the basis of clinically administered intelligence tests. Their IQ's ranged from twenty-seven to sixty-nine with the mean at 51.7. This group was paired with a control group on the basis of IQ, amount of previous school experience, initial academic achievement, sex, and socio-economic background. Each child in the experimental group spent three years in a special center. The aims in these centers were the development of social awareness, civic competence, critical thinking, and social usefulness. The school environment was planned to develop emotional stability, further social interaction, self-confidence, and a sense of personal worth. The program was written as a doctoral dissertation at Northwestern University under the title, "A Description and Evaluation of an Experimental Curriculum for Adolescent Children Classified as Feeble-minded."

At the end of three years the results were almost unbelievable. The 254 children showed an average gain of three years, eight months in composite achievement. The average gain in reading was 4.1, almost two years more than expected.

These children were followed for the five years succeeding their three-year special school. Clinical retests of mental growth over the eight years showed changes in IQ ranging from -4 to $+71$ points. At the end of the eight years 59.7% of the group were classified as low or high normal and only 7% were still listed as feeble-minded.

On objective measures 79% of the group were shown to have attained a level of personal and social adjustment equal to or better than the highest one fifth of well-adjusted adults. A high statistical correlation ($.923 \pm .029$) was found between change in test intelligence and change in objective measures of emotional stability, when computed as from the close of the study over the original status eight years before.

At the end of the eight years 83.4% were regularly employed, 5.4%

[47] Published in *Psychological Monograph,* Vol. 60, No. 5, American Psychological Association.

[48] The following report was summarized from Bernadine Schmidt, "The Rehabilitation of Feeble-Minded Adolescents", *School and Society,* Vol. 62, Dec. 29, 1945, pp. 409-412.

were in military service (including two WACs), 3.5% of the girls were married and homemakers, 3.1% temporarily idle, 2.4% in full time school attendance. Only one person was permanently idle and two had died.

Now let us see what had happened to the paired control group. The IQ changes were from +4 to −22 with the mean −3.6. There was little change in any of the areas of behavior investigated in this study.

This study has been severely criticized from several points of view[49] and to a certain extent at least apparently justly so. From the very nature of the study results are difficult to substantiate. The people involved in the study are not "guinea pigs" to be paraded for public verification. In fact, any identification of them now as "cases" in the study has the possibility of doing irreparable harm. On the other hand, some of the statistics used are open to question, and it hardly seems feasible to use some of the tests which were a part of the study. Several studies have been set up to repeat the experiment, but much time must elapse before we have further information.

Needed Research. Let us reconsider recent studies and see what, if any, conclusion or suggestive leads may be drawn. One conclusion which is now incontrovertible is that further research should be conducted. If there is to be such research, what factors must be included? The factor in Peters' and McElwee's and Dr. Wellman's studies which seemed most important was the *type* of training the children received. Skodak and Skeels found that the home environment of people of average and above average ability was effective. Gardner found psychiatric care to be helpful. The Schmidt study was the first one of importance to specifically plan to "develop emotional stability, further social interaction, develop self-confidence and a sense of personal worth."

There is a growing body of teachers who conduct their group in such a way as to show that they believe this development of the child is of far greater importance than any particular facts or figures, any subject matter or skills. They are, however, more apt to be found in University training schools than in public schools. Could it be that this type of approach makes possible greater and more rapid development than the traditional approach? The practice of research people of putting together the records of children from different schools and under different teachers may be masking just the factors that are most important. It may be that the occasional large increase which is always found may not be a "statistical probability" but may contain the key to our problem. Instead of averaging these large gains in to get an "average gain," we might better analyze the home and school experiences of such pupils.

The studies then seem to show that a good home environment, stimu-

[49] Samuel A. Kirk, "An Evaluation of the Study by Bernardine G. Schmidt Entitled 'Changes in Personal, Social, and Intellectual Behavior of Children Originally Classified as Feeble-minded,'" *Psychological Bulletin*, Vol. 45, July, 1948, pp. 321-333.
Bernardine G. Schmidt, "A Reply," pp. 334-343.

lating and challenging experiences, and conditions promoting emotional health and stability are some of those which favor the better development of youngsters. Careful and thoughtful case studies should also be made of the children who show outstanding change in pace of development. All factors which are in any way pertinent should be discovered and recorded. From such studies, leads may be found for further experimentation.

V. DEVELOPMENT OF CERTAIN MENTAL ABILITIES

Time concept. There are considerable differences in the development of various time concepts in children. They depend partly on ability and partly on experience. However, there is a common underlying plan of growth. Among others, Ames has reported a study of the child's expression of his time concepts. First, he expresses the present, then the future, and finally the past. Complete mastery of any one time concept does not develop all at once. Children tell when a thing happens in relation to some activity before they can give a clock time. Specifically she lists some of the abilities that generally occur at certain age levels. At five a child can tell what day it is, name days of the week, tell how old he will be. At six he can name the four seasons and has an increasing knowledge of duration. At seven he can tell the seasons, the months, specific clock hours and minutes, but not the year. By eight he can handle extremes of time as well as the year.[50]

Oakden and Sturt,[51] in studying children's concepts of historical chronology, report that the power to think of the past as different from the present seems to develop at about eight years. This agrees very nicely with the above study. From this age on there is a beginning in the distinguishing of historical periods. Historical epochs more removed from our own time are most readily distinguished. Subdivisions in the past are at first ignored. Historical continuity should probably not be introduced before the child is eleven. Before that age, time concepts should be meaningfully interpreted in terms of time units that he can understand.

If this is true in general and for the average child, it suggests a basis for placing historical materials. Beginning in the third grade certain definite units of history could be studied. Long ago people did this and lived so. By the sixth grade history could be profitably introduced as a unified sequence of interdependent events. This factor should be studied again by the social-science people.

Attention. The length of time a child's attention can be held varies with the stage of mental development, interest, and training. Any one who has dealt with very young children has immediately become aware

[50] Louise Bates Ames, "The Development of the Sense of Time in the Young Child," *Journal of Genetic Psychology*, Vol. 68, March, 1946, pp. 99-125.

[51] E. C. Oakden and Mary Sturt, "The Development of the Knowledge of Time in Children," *British Journal of Psychology*, Vol. 12, April, 1922, pp. 309-336.

of the short period of attention given to any one thing. As the mental ability increases, this attention span usually also increases. Probably a young child's attention should not be kept on one thing more than ten minutes. With older pupils some sort of a break should be provided after not more than twenty minutes. This does not mean a complete change of materials, but maybe a short interval of rest or exercise, or a shift to another phase of the topic in hand.

Interest is a potent factor in the length of the attention span. Even small children will concentrate on something which happens to be of great interest to them for a surprisingly long time. This factor should not be exploited much beyond the limits suggested. However, it should be recognized as one of the most potent factors in the development of an increasing attention span. When a child is absorbed in a piece of work, he should not be disturbed simply because the clock says time to do something else unless it is absolutely necessary. Within natural limits, attention is largely a habit. Absorbing interest leading to concentrated attention makes for further interest and a longer period of attention. "Attention cannot be demanded. It is a by product of interest and maturity." [52]

Memory. As was illustrated on page 36, memory is so largely dependent on understanding that its development can scarcely be considered apart from it. We all remember much of what we understand well and some of what we understand a little. Before there is much understanding there can be little more than rote memory. Rote memory, except in instances of overlearning, is memory of short duration. As understanding increases there is more organization of pertinent facts or details around a meaningful concept. This tends to make for more accurate recall and longer memory span.

The problem, for which teachers should watch, comes when the child does not progress to meaningful, organized remembering but continues with rote memory to too great an extent. In the first two grades, the teacher should be conscious of trying to develop this more mature system of memory, for by the age of eight or nine [53] considerable progress should have been made in this direction. Teaching on the basis of understanding, rather than on the "memorization" of lists of words or facts more or less unrelated, helps greatly to develop a good memory system.

Reasoning. The development of thinking or reasoning in the child has been a fascinating as well as most important topic of conjecture and discussion. Relatively little research has been done and that has not always been successful. The first study of importance was the monumental study of Piaget.[54] Although some of the conclusions have been discredited, yet

[52] Strang, *op. cit.*, p. 335.

[53] Gertrude Driscoll, *How to Study the Behavior of Children* (New York, Bureau of Publications, Teachers College, Columbia University, 1941), p. 38.

[54] Jean Piaget, *The Language and Thought of the Child* (New York, Harcourt, Brace & Company, Inc., 1926).

the work on this as well as the other phases of the thought process [55] furnished the inspiration and motivation for much of the work done since. One of Piaget's beliefs that seems to be often true and helpful in understanding children, is explained in *The Language and Thought of the Child.* It is that: [56]

> Up till the age of seven or eight, children make no effort to stick to one opinion on any given subject. They do not, indeed, believe what is self-contradictory, but they adopt, successively, opinions, which if they were compared, would contradict one another. They are insensible to contradiction in this sense, that in passing from one point of view to another they always forget the point of view which they had first adopted.

Syllogism is one method of thinking described by Symonds as [57] "the act of applying the principle or meanings to the data at hand." He has found evidence that the [58] "mastery of syllogism is for most persons learned between the ages of six and ten by actual experience with manipulating syllogisms and checking the results with experience." He continues to discuss various syllogisms and common fallacies in this type of reasoning.

Keliher [59] believes that genuine logical reasoning only begins at seven or eight. Reasoning is a developing ability beginning way back in babyhood. However, the using of abstract ideas depends not only on experience, but on a complex of maturational factors. She believes that reading and many other problems should be delayed until adequate reasoning has developed. The solution of problems and the making of decisions need experience as do social understanding and coöperation. Readiness is a major factor in all learning.

Stoddard and Wellman [60] take a somewhat different attitude. They believe that child's thinking does not differ radically from adults'. Rather, that in discussing the problem we should compare trained and experienced minds with untrained and inexperienced. When adults deal with unfamiliar situations they make the same mistakes. The thought processes not only develop by experience but may be hindered by the wrong type of experience. Teasing, poor or too rigid discipline, or any highly emo-

[55] Jean Piaget, *Judgment and Reasoning in the Child* (New York, Harcourt, Brace & Company, Inc., 1928).

——, *The Child's Conception of the World* (New York, Harcourt, Brace & Company, Inc., 1929).

——, *The Child's Conception of Physical Causality* (New York, Harcourt, Brace & Company, Inc., 1930).

——, *The Moral Judgment of the Child* (New York, Harcourt, Brace & Company, Inc., 1932).

[56] Piaget, *The Language and Thought of the Child,* p. 74.

[57] Percival M. Symonds, *Education and the Psychology of Thinking* (New York, McGraw-Hill Book Company, 1936), p. 128.

[58] *Ibid.,* p. 209.

[59] Keliher, *loc. cit.,* pp. 44-45.

[60] George D. Stoddard and Beth L. Wellman, *Child Psychology* (New York, The Macmillan Company, 1934).

tional factor may cause a blocking that hinders the natural development of thinking and reasoning.

Wheeler and Perkins[61] also emphasize the development of the ability to reason. By six a child can recognize a problem as a problem to be solved. The ability to detect absurdities, which involves reasoning, develops faster after eleven years. The increase in the ability to reason results from the development of concepts from experience and maturity.

Huang believes that the characteristic of a child's explanation is not mysticism or animism as Piaget has said, but naïveté. He gives a critical review of fifty-six references dealing with children's reactions to problems of physical causality.[62]

Causal thinking. The most comprehensive and important research in this field, perhaps, has been done by Deutsche.[63] Her experiment consisted of a test in two forms. The first presented eleven everyday problems, the explanation of which involved principles of physics. The second form was a series of twelve questions concerning natural phenomena which were to be answered. The test was given to 732 pupils from eight to sixteen years in grades three through eight. "Quantified" ratings were made on the basis of the adequacy of the answers. Among the conclusions reached by Deutsche in her experiments were the following:

There was a consistent increase with age in the adequacy of the answers. The greatest increase was from eleven to twelve years. Boys received higher quantified (adequacy) scores than girls, particularly when the influence of direct training was probably less.

There was but a slight relationship between quantified scores and socio-economic status as measured by occupational groupings.

There was only a low correlation with intelligence, but a fairly high relation between quantified scores and school grade.

The classification of all the answers into Piaget's seventeen types of causal thinking makes it appear that the classification is no longer useful. The difficulty of classification, the inadequacy of the "types," and the interpretation that such a classification forces upon the child's thought, suggest that the classification contributes little to an understanding of children's reasoning. Only four types of thinking (phenomonistic, dynamic, mechanical, and logical deduction) were found in large enough frequency to warrant further analysis.

There was a small sex difference in the types of answers given, boys giving slightly higher percentages of the more advanced types.

Between upper and lower socio-economic groups there was a slight difference in types of explanation in the expected direction.

The overlapping between ages in types of answers was marked. No type of answer was characteristic of a single age; most types were distributed over the entire age range; and many types were found at all ages.

[61] Raymond H. Wheeler and Francis T. Perkins, *Principles of Mental Development* (New York, Thomas Y. Crowell Company, 1932).

[62] J. Huang, "Children's Conception of Physical Causality: A Critical Summary," *Pedagogical Seminary and Journal of Genetic Psychology*, Vol. 63, March, 1943, pp. 71-121.

[63] Jean Marquis Deutsche, *The Development of Children's Concepts of Causal Relations* (Minneapolis, Minn., University of Minnesota Press, 1937).

Large differences were found between the individual items on the two forms as to the percentage of each type of answer given. For example, some items elicited much higher percentages of mechanical and logical explanations than others.

A striking increase of superior answers was found with advancing age, the older children giving much more nearly correct accounts of cause-and-effect relations and principles.

Answers given by thirteen kindergarten children, tested individually but by the same general procedure, were analyzed. The quantified analysis showed surprisingly high scores, with many superior answers. The qualitative analysis showed that a large percentage of the answers were of the mechanical and logical deduction types, and only a few pre-causal; that 62 per cent of the answers were materialistic and only 19 per cent non-materialistic.

No evidence was found that children's reasoning develops by stages. Both quantified and qualitative analyses show a gradual progression in answers with advancing age, and all kinds of answers are found spread widely over the age range.

Evidence was found of specificity in children's causal thinking as opposed to a general level of thinking. The child responds to different questions with answers differing in qualitative as well as quantified value.

The adequacy of the answers to these questions appears to be determined more by the tuitional or experiential factors related to schooling than by intelligence or socio-economic status. This suggests that although perhaps maturational and innate factors have a delimiting effect, specific answers are more dependent on direct or indirect instruction and training.

The implications then are that reasoning ability is a developing factor, which is present in considerable amounts, by the kindergarten level. This means that it has been developing for some time, undoubtedly in its simpler forms, since babyhood. As with all other factors, there is great individual difference both in amount and time of development. It increases with age but other factors seem to show that it is increased background experience and training which are more important than maturation or intelligence.

This directly challenges the elementary school to provide instruction and experience which will develop habits of accurate reasoning and causal thinking. A wide familiarity with the phenomena of nature, and experience in thinking about them for themselves, should be a large part of all children's school life.

VI. SOCIAL DEVELOPMENT OF THE CHILD

Children develop not only in physical growth, and various physical and mental abilities, but also in the ways in which they react to other persons and social situations in general. There is a considerable body of literature [64] tracing the social development of the infant and preschool child. An increasing but still inadequate amount of study has been given the child from this period until adolescence. This is most unfortunate, for it

[64] See Bibliography. Breckenridge and Vincent, Hurlock, Stoddard, and Wellman are especially valuable.

is during this period from six to twelve years that many of his attitudes and reaction patterns toward social situations are developed.

When the child enters school, he meets an entirely new situation. Until this time the center of his social life has been his home and the neighborhood group. In the home he commanded a considerable share of the attention of all the members of the family, who have adapted themselves to his ways almost as much as he has to theirs. In the neighborhood group he was still "close to home base" and the group was relatively small. At school he now finds himself in a group of from twenty-five to forty children, many or most of whom are strangers. The teacher gives no more attention to him than she does to any one else in the group. He has no special privileges; no special concessions are made to him. None of his personal idiosyncrasies are catered to or even recognized. Here more than ever before he must adjust himself to others. He must learn how to meet social situations.

This is a long and gradual process, and the study of it throws light on many of the problems of social development. Some of these problems which will be discussed in this section are his relation to group life, his friendships, his moral judgment, and his language and play development. Discussing some factors which are important in influencing this social development helps us to understand these problems.

Research findings on personal and group relationships. The knowledge concerning these problems is meager, and often it is founded only on limited observations; some of the more reliable findings of studies have been summarized as follows: [65]

1. Leadership in the first grade is confined to a small group, in contrast to the fifth grade where class leaders with influence in groups of thirty to forty children can be distinguished. (Reininger)
2. First-grade children are not able to rank the least and most important members of the class. (Reininger)
3. In the first grade there are many intersexual attractions or friendships, while in the sixth grade there may be none at all. Intersexual choices decline sharply after the third grade, not to reappear until the eighth. (Moreno)
4. The lowest number of mutual pairs (children who choose each other for activities) and the highest number of isolated children are found in the kindergarten, first and second grades, "indicating that children of this age are seldom sufficiently certain whom to choose." From the fourth grade on there is an increase in the number of mutual pairs of friends and an increasing complexity in group structure. At the earlier levels the isolated child may be merely forgotten, but after thirteen years children may be unchosen because of definite negative attitudes of other members of the group toward them. (Moreno)
5. Leaders are likely to make a more extroverted score on the Marston scale than the average child. (Caldwell and Wellman)
6. Shy children become attached to self-assertive members of the group. (Reininger)

[65] Gardner Murphy, Lois B. Murphy, and Theodore W. Newcomb, *Experimental Social Psychology* (New York, Harper and Brothers, rev. ed., 1937), pp. 631-632. Reprinted by permission.

7. Children early show a tendency toward certain rôles or types of behavior in a group, such as the protective type, the popular or beloved type, the leader, the despot, and the socially unsuccessful child. (Reininger)

8. Quantitative descriptions of the rôles of children in a group disclose the isolated child, the nucleus of a group, the link in a chain of relationships. (Moreno)

9. Friends are usually of the same sex, age, height, IQ, and children who describe the kinds of boys and girls they prefer for friends use terms like *friendly, fun, fair.*

10. The child who is extremely superior is not chosen as a leader by average groups as often as is the moderately superior child. (Hollingworth)

The child as a part of the group. As might be expected, children in the first grades of school form small groups; there will be little "group spirit" where the whole group is involved. The leaders are leaders of small groups. Pupils cannot evaluate individual children in terms of the total group. At this stage too, the comradeship is casual, the group membership and the "chums" changing from time to time. As the children develop, a group feeling develops in larger and larger units, and as a corollary the leaders may be leaders of the larger group. By the fifth grade there can be a definite feeling of allegiance to the class as a whole. This same development, it will be recognized, increases gradually until by adulthood one can feel a sense of belonging and allegiance to a whole political, racial, or religious group.

The "five to eights". From five to eight the child frees himself from dependence on adults, substituting by the end of this period dependence on and interdependence with strongly socialized child groups. Biber[66] discusses various other characteristics of this period. The child is broadening his horizon and accepts vicarious experience to the degree to which he can relate it to personal experience. He is interested in facts. He wants to do the things that grown-ups can do and is deeply affected by attitudes and viewpoints of adults. It is at this time that he develops the deepest prejudices. Thus it is extremely important that teachers as well as parents consistently keep their own attitudes and actions as closely in line as possible with the objectives we hope the children will reach.

Children are developing competitive impulses and begin to evaluate their own work as well as that of others. Too often schools have made unfortunate use of this competitive spirit. They continually urge the child to get more work done than someone else, to get a higher grade than someone else, to run faster than someone else, to read better than someone else, and so on through the day, the weeks, and the years. While children enjoy a certain amount of competitive activity, enough to add zest and interest, more can be extremely detrimental. For the slow child, it builds up tensions, and the feeling that he never can win anyway, so what is the use of trying. For the bright, quick child it develops habits

[66] Barbara Biber, "The Five to Eights and How They Grow," *Childhood Education,* Vol. 18, Oct. 1941, pp. 57-74.

of always winning, and what is even worse, winning without much effort. For all children it builds up habits of constantly comparing themselves with others to the detriment of one or the other. None of these attitudes is good from the standpoint of emotional health or effectiveness in democratic living.

From another point of view it is also undesirable. If we believe in a democratic society we must develop coöperative living where each person respects all others for whatever contribution they can make. Driscoll,[67] says:

> Acceptance of the obligation of contributing to a group is the most important learning that occurs in the primary grades.

We want children to learn to work together either on individual or coöperative projects, each contributing what he can for the good of each and all. The schools have developed far too much of the attitude "I'm going to grab and keep all I can get by hook or by crook so that I will have the most" even if both he and others would be better off if he helped out those behind so that, being strengthened, they could later return the help tenfold. This is the place to minimize the competitive and emphasize the coöperative. A democratically organized classroom will develop more democratic personalities. If the teacher in this situation leads, directs, and supports the children, they can then:

> accept leadership and authority without cringing before it or be leaders without needing to be despots.[68]

The "eight to twelves". This whole period up to preadolescence is often called the latency period. It does not mean that there is no interest in sex but rather that other interests predominate. Since their friendships are largely with their own sex it is at this period that we are most likely to find a variety of types of "homosexual" experimentation.[69] As a rule this sort of thing is not something to be greatly disturbed about. If it persists and seems to be of too great importance to the child, a careful check should be made into the child's emotional life to see what makes this so interesting and necessary at this time. "Bad words" may be brought home but usually a calm acceptance and explanation is all that is necessary. They have found that some child has caused consternation by using them and they are trying out the same thing without any real understanding of what they are saying.

There is also a development of close and personal friendships which take the place of the casual earlier contacts. Nimkoff[70] believes that in

[67] Driscoll, *op. cit.*, pp. 40-41.

[68] Biber, *op. cit.*, p. 74.

[69] Lawson G. Lowrey, "Sex Development during the School Age," *Child Study*, Vol. 22, Nov. 1944, pp. 6-8+.

[70] Meyer F. Nimkoff, *The Child* (Philadelphia, J. B. Lippincott Company, 1934), p. 127.

general definite allegiance does not appear until the child is eight. This is interesting in light of other findings that the gang begins its development at about this time. Children are now imitating other children more than adults. "Chums" as well as group activities play a more important part in the child's life. There is a strong desire to conform to the standards of the group. They can learn to coöperate more and more.

At this stage, children are becoming socially adjusted to the group and are substituting the approval of the group for teacher and parent approval.

Dr. Zachry has done much to give understanding here. She discusses children and particularly the boy, during the "latency" period.[71] At this time children are interested mainly in doing things with their hands. Then interests have shifted to the literal and factual. Anything that involves construction or manipulation holds the attention. This carries over to the shops and the graphic and plastic arts as well as sports. The child's standards are his own satisfaction and the approval of his schoolmates.

This period has its own characteristics. Children are apt to show slovenly habits, bad manners, and disrespect for authority. This should be recognized, and though certain habits and attitudes must be required, too much emphasis should not be placed on this phase at this time. Maturation alone will do much toward correcting these difficulties.

This is the age of the gang. Children form their gangs on the basis of sex first, then on the same general age, intelligence, and physique. The gang sets its own standards, and these are apt to be accepted by its members rather than the standards of the home. They are not apt to share their confidences with adults at this stage, rather they "shroud in secrecy from their misunderstanding and alien eyes" the things that are most important to them. Only in cases of rare understanding is an adult allowed to be "in on things."

The gang can be one of the greatest educative factors in a child's life. Here he learns fair play, to face reality, adaptability, and the give and take of social contacts. He will take and heed corrections given by members of the gang far better than those by adults. The difference between the childhood gang and gangsterism must be recognized. Where it is of the former type, "it would be much wiser if schools and parents permitted the gang as much freedom as can reasonably be given. That really means a great deal of freedom; it means that supervision would be imposed only when the activities of the gang become either physically or morally dangerous." [72]

What then should be the school's responsibility to this age group? First, it must recognize the situation and deal with children as they are, not as

[71] Caroline B. Zachry, "Understanding the Child during the Latency Period," *Educational Method*, Vol. 17, January, 1938, pp. 162-165.

[72] *Ibid.*, p. 165.

it thinks they should be. Second, it should give each child the understanding he needs. This is frequently proposed and recommended but seldom done. Third, the school must furnish activities in its curriculum that meet the interest and needs of the child while he is in school and which also may form a basis and direction for his out-of-school activities in the gang. Fourth, we must furnish a supervisor to sponsor out-of-school activities, such as playgrounds, cub and regular scouting, model-airplane clubs, and the like. If those responsibilities are fulfilled, the gang's activities will be indirectly guided, and there will be some one who will have the confidence of the children to the extent that needed supervision can be given in an acceptable way.

Friendships are apparently formed on factors of propinquity and some point of basic similarity. One study in grades three to eight showed that nearness of the homes, the same grade, age, and mental age were of first importance. Of secondary importance were the personal characteristics of the children themselves. In the later elementary grades the fact that children are of the same sex is perhaps the greatest factor in friendships. Among the primary group boys and girls play and work together with little or no consideration of difference in sex. By the third grade boys tend to play with boys and girls with girls until by the sixth grade, on the part of most children, there is a definite avoidance of contacts between boys and girls. At adolescence this begins to break down into a definite interest in the opposite sex, although there is considerable self-consciousness about the contacts.

These factors of gangs and gang allegiances, as well as personal allegiances, of sex avoidance and sex attraction, form a large part of social adjustment. They are some of the more emotional of the adjustments to be made and as such are apt to be the cause of many of the difficulties. This phase of a child's life must be understood if there is to be any real understanding and help for his problems.

Moral judgments. The stage of development of a child's moral judgment is important both as a basis of control and for understanding his actions. Piaget [73] studied children from four to fourteen as to the rules of the game, adult constraint, and ideas of justice. The findings indicated four general stages: individual regularity, imitation of seniors, coöperation, and codification. Up to seven or eight years a majority of the children subordinated justice to adult authority. From eight to eleven there was a progressive idea of fairness until from eleven or twelve on most children believed in established justice and fair play. The conditions of this experiment were repeated with a similar group by Harrower [74] and similar results obtained. But when a group of children with superior backgrounds was used, the results suggested that in certain environments

[73] Jean Piaget, *The Moral Judgment of the Child, op. cit.*

[74] M. R. Harrower, "Social Status and the Moral Development of the Child," *British Journal of Educational Psychology*, Vol. 4, February, 1934, pp. 75-95.

these stages can be so far accelerated that children exhibiting characteristics of the most developed stage may be found at the same ages as the beginning stage.

Another approach to the problem has been made by McGrath.[75] Two-thirds of the children she studied appreciated the necessity of the act of obedience at four years, but only about half appreciated the "why" at seven years, although some children did at three and a half. By the use of such questions as "If you broke your mama's sugar bowl, what would you do?" "If mama asked you who broke it, what would you do?" she determined that at six years over half the children showed concepts of courage, honesty, and justice. It is, however, possible that it was naïveté rather than courage and honesty.

Brooks[76] discusses moral development and describes four levels of conduct. On the first level the child's behavior is modified by natural consequences of his act, as when touching something hot. The second level is that of reward and punishment administered by those in control. A third level is the social approval or disapproval of his own group. The fourth and highest level is that of altruism.

Eberhart[77] studied attitudes toward property in various situations. At age six there was a great variation in attitude. Rapid progress was made by the third grade, with more gradual progress from there on. In the upper grades there was a clearer distinction between the seriousness of various offenses but still no classification of type of offense as taking home property, lost property, property of many owners or one owner, was significant. Actual stealing was rated most serious, while hoodwinking utilities, keeping found property, using belongings of siblings were less serious.

All these studies seem to point to the same conclusion, that moral codes are learned. They obviously are learned by the youngsters at home and at school and quite probably reflect the attitudes of the adults who are around them, and later those of the "gang" with which they identify themselves.

The School's Responsibility. One of the school's responsibilities is to recognize these conflicting codes which are influencing the child's actions. Teachers need a broad background and a large measure of tolerance so that they may comprehend the wide diversities in the children's backgrounds. Then they will not regard as sin what others take for granted. Instead they can recognize the cause of the conflict and help the child to understand it too. They will not then brand him a "bad boy" or a crimi-

[75] Sister Mary McGrath, "Some Moral Concepts of Young Children," *Catholic Educational Review*, Vol. 31, October, 1933, pp. 477-487.

[76] Fowler D. Brooks, *Child Psychology* (Boston, Houghton Mifflin Company, 1937), pp. 403-406.

[77] John C. Eberhart, "Attitudes Toward Property: A Genetic Study by the Paired Comparisons Rating of Offenses," *Pedagogical Seminary and Genetic Psychology*, Vol. 60, March, 1942, pp. 3-35.

Appleton Series in Supervision and Teaching

EDITED BY

A. S. BARR AND WILLIAM H. BURTON

The Child and His Curriculum

nal because the code he was brought up by happened to differ from the one they learned.[78]

Teachers should check their own code with that of the community or district in which their pupils live. They should also check their behavior against what they believe is their own code. Many teachers commit serious offenses which they would not tolerate from a member of their class. They may be rude by scolding or in other ways showing disrespect for the personalities of their pupils. They may be unjust by accusing pupils of doing things they did not do. They may be untrustworthy in not keeping a pupil's confidence. The school must create within itself an attitude and spirit which will make such things impossible. It can not be done by superficial schemes for discussion, but must grow out of the sincerely democratic practices of the school itself and all its attitudes, developed by the staff sincerely working together to this end.

Language development. The ability to use language is one of the most fundamental and perhaps has the longest period of development. It is enormously important for nearly all phases of life. As with adults, so with children, language is most of all an effective tool in promoting social organization.[79]

372.1 L47C

Terman says when speaking of the Stanford-Binet Intelligence Scale: [80] "The vocabulary test has a far higher value than any other single test of the scale.... Our statistics show that in a large majority of cases the vocabulary test alone will give us an intelligence quotient within 10 per cent of that secured by the entire scale."

Vocabulary development has more relationship to mental age than to chronological age. However, by the time pupils reach the first grade, the average child will have a vocabulary of approximately 2,500 words. He will speak in sentences of an average of five words in length. He knows some of the letters and may be able to read a few words.

From here on, the vocabulary increases gradually all through life. There is an enormous amount of individual difference in the size of vocabularies. A direct count of any number of cases is practically impossible; hence the best answer is approximations based on tests. Cuff [81] tested 1,100 pupils from the third grade through the first year of college and from the results estimated average vocabularies. His figures vary from those of other investigators, but the procedures and tests are far

[78] William Clark Trow, "Conflicting Codes of Morality in the Life of the Child," *Childhood Education*, February, 1942, Vol. 18, pp. 256-262. See also the studies on sex reported by Kinsey. It is clear that persons from one cultural or social level have little concept or understanding of the mores or attitudes of other levels.

[79] Sidney O. Janus, "An Investigation of the Relationship Between Children's Language and Their Play," *Pedagogical Seminary and Journal of Genetic Psychology*, March, 1943, Vol. 62, pp. 3-61.

[80] Lewis M. Terman, *Measurement of Intelligence* (Boston, Houghton Mifflin Company, 1916), p. 230.

[81] Noel B. Cuff, "Vocabulary Tests," *Journal of Educational Psychology*, Vol. 21, March, 1930, pp. 212-220.

from uniform. The main value is to show the relative amount of growth at various ages. His estimates are shown in Table II, below.

Thus it is clear where the greatest period of vocabulary development lies. During the first six years the child acquires about 2,500 words. In the next two years he adds twice that amount, about 2,500 a year. During the next year he makes even greater progress, increasing his number of words by 3,000. By the fifth grade the rate of increase is dropping and continues decreasing progressively from then on. There is another factor that probably keeps the amount of increase spuriously high throughout high school and especially on the college level. That is the increasing selection of the students. Since vocabulary is highly correlated with intelligence and, in general, the less intelligent drop out of school during those years, Cuff is testing an increasingly intelligent group. It is impossible to tell what per cent of vocabulary increase on those levels is due to increase of each pupil's vocabulary or to increased selection.

TABLE II

ESTIMATED VOCABULARIES OF PUPILS IN GRADES THREE THROUGH FIRST YEAR COLLEGE

Grade	*Cases*	*Vocabulary*
3	117	7,425
4	120	10,395
5	117	12,460
6	104	13,965
7	99	14,910
8	96	16,800
9	88	19,110
10	46	20,930
11	51	21,245
12	45	21,840
College (first year)	227	22,295

* Cuff, *op. cit.*

From the beginning of school the problem is one of increasing the child's vocabularies, the number of words he understands, uses in talking, in reading, and in writing. Words take on more exact meanings. Sentences are more complete and more adequate. The tendency to use an increasing proportion of subordinate clauses is a mark of increasing language development in grades four through nine. This tendency depends upon experience as well as mental ability as it is a function of both mental and chronological age.[82] Girls are more advanced in language development than boys as a rule. LaBrant found that girls write an average of 148.3 words per theme, whereas the boys writing on the same topic and for the same length of time write an average of only 124.7 words. At the same

[82] Lou L. LaBrant, "A Study of Certain Language Developments of Children in Grades Four to Twelve, Inclusive," *Genetic Psychology Monographs,* Vol. 14, No. 5 (November, 1933), pp. 483-484.

time boys' papers give evidence of as much interest in the subject as do girls'.[83]

In obtaining answers to problems involving causal relations, Deutsche[84] found several interesting relationships. The number of words used increased somewhat with age. There was a slight relationship between the number of words used and the socio-economic status of the child, a correlation of .35 between words used and intelligence, and a slight relationship between number of words and the school grade. The number of words used was definitely related to the adequacy of the answer. In this study it appeared that the number of words a child used in an explanation was in part dependent upon his understanding of the phenomenon.

TABLE III

THE RELATIONSHIP OF THE CHILD'S VOCABULARY TO VARIOUS OTHER FACTORS *

Item	*Correlation*
Composite of environmental factors	.70 ± .04
Minnesota scale of socio-economic level	.67 ± .04
Mother's education	.65 ± .05
Cleanliness scale	.63 ± .05
Number of children's books child sees	.60 ± .05
Overcrowding ratio	.59 ± .05
Opportunity for constructive play materials	.58 ± .05
Father's education	.58 ± .05
Mother's vocabulary (intelligence) test	.57 ± .05
Total number of hours child is read to, told stories to, etc.	.56 ± .05
Father's occupation (Barr Scale)	.55 ± .05
Number of adults in daily contact with child	.53 ± .06
Number of hours mother reads to child, tells stories, etc.	.52 ± .06
Child's height	.48 ± .06
Number of hours adults spend daily with the child	.45 ± .06
Suitable "extensions of environment"	.44 ± .06
Number of hours adults in household (including parents) spend with child	.42 ± .06
Number of Kuhlmann subtests definitely taught	.41 ± .06
Number of playmates in other homes	.40 ± .07
Number of siblings	—.51 ± .06

* Adapted from Dorothy Van Alstyne, *The Environment of Three-Year-Old Children: Factors Related to Intelligence and Vocabulary Tests*, Contributions to Education, No. 366 (New York, Teachers College, Columbia University, 1929), pp. 99-101.

There seem to be many factors influencing language development. Various phases of the environment are important. Many factors have been correlated with the child's vocabulary. One comprehensive study[85] which is typical found the composite of environmental factors gave the highest positive correlation and number of siblings the highest negative.

Since the combination of environmental factors gave the highest corre-

[83] *Ibid.*, p. 486.

[84] Deutsche, *op. cit.*

[85] See footnote to Table III, above.

lation with language development, we can at least say that it is of considerable importance. What kind of experiences for developing language ability are the schools providing? In many classrooms one might think it was the teacher's ability which needed development, since she does by far the greatest amount of talking. It might be interesting for each teacher to keep a chart on her desk for one day with a list of all her pupils. She would put a check after each child's name for each sentence or idea he expressed which was not in answer to her direct question. This would give a rough idea of the child's experience in expressing his thoughts. When this is evaluated against the fact that the child's learning to think for himself and express these thoughts clearly and adequately is one of the most important abilities for which the school is aiming, the results are a little disconcerting.

Many classrooms are actually preventing and inhibiting normal language development by their formal organization, where whispering is a cardinal sin and the only permitted conversation is between teacher and child.

Play development. With the very young child play is entirely individual and according to no rule or dictates but his own. With group contacts play gradually becomes imitative and socialized. Hetzer[86] observed a large number of group games as played without supervision. She found two general types of games played: those with definite rules which prescribe everything that is to be done and another type in which the rules are only schematic and general and where there is complete freedom in regard to the individual's activities within this general scheme. Circle and singing games illustrate the first type and "hide and seek" or "the robber and the princess" belong to the second type. There was a definite tendency for the games with the definite rules to prevail among children from four to ten years of age, but from that age on the games with free organization are more popular. It seems that a group of children under ten years needs a definite plan to keep it together, whereas the older group keeps together even when the order is left free and only a general scheme is prescribed. Bühler comments that this conception has been confirmed by various observations.

A comprehensive study of children's play has been conducted by Lehman and Witty.[87] They studied children from eight and one-half years to twenty-two and one-half and found that "there is considerable permanence of the play interests of groups of children of various ages. The changes are not sudden and sporadic. The play trends which characterize a given age group seem to be the result of gradual changes occurring during the growth period. It was found that no age between eight and

[86] As reported by Bühler in Carl Murchison, *Handbook of Child Psychology* (Worcester, Mass., Clark University Press, Second edition revised, 1933), p. 387.

[87] Harvey C. Lehman and Paul A. Witty, *The Psychology of Play Activities* (New York, A. S. Barnes and Co., 1927).

one-half and twenty-two and one-half inclusive could be designated social or individualistic on the basis of the play behavior therein revealed." This does not conflict with the other study for Hetzer found that most of the contacts had become fairly well socialized by the age of eight and one-half.

Within the range studied, the older the child the fewer the activities in which he took part until at sixteen and one-half the number was only half that at eight and one-half.

Sex differences in play were not as pronounced as had been anticipated. When found, they showed that boys take part in more active, vigorous plays and games, plays and games involving muscular dexterity and skill, games involving competition, and organized plays and games. Girls engaged more frequently in sedentary activities involving restricted range of action.

There is considerable difference in the play of town and country children, but it is largely explained by opportunity, or lack of it, because of the smaller number of children in the rural areas and the lack of certain facilities available in cities.

A later study of versatility and sociability of play interest suggested some tentative relationships. In summarizing, it is stated that, "It seems from the data presented in this study, that one should not encourage indiscriminate sociability if one desires the most wholesome development of the growing child. It appears to be the kind of social contacts, not the number which should be of great concern to the person charged with the guidance of children." [88] An average amount of versatility of play activities seems to go with many of the desirable traits of personality.

Some factors influencing social development. We know very little concerning the child's social development. We know even less concerning the factors involved in it. There have been some studies in this field, but relatively few of them have made much contribution.

Janus [89] says "A child does not develop from a little egoist into a social human being but plays both parts concomitantly. He is no more a 'nonconformist, or relatively unsocial being' than he is motivated to be. True he is motivated egocentrically more *apparently* than his elders, but not more frequently."

Culture. We know that, broadly speaking, social learnings depend to a large extent upon the culture in which the child is reared. He learns these things by suggestion, by imitation, by approval and disapproval, simply by familiarity, by knowing of "no other way of doing things." Family ways, manners, and traits; customs of small communities, or even large ones; mores of national or racial groups are all evidences of social adaptation to certain cultural settings.

[88] Paul Andrew Witty, *A Study of Deviates in Versatility and Sociability of Play Interest* (New York, Teachers College, Columbia University, 1931), p. 50.

[89] Janus, *op. cit.*

There is a great need for some rather careful studies of the social effect of particular environmental situations. Bühler [90] has summarized some studies made largely in Europe which may be suggestive of work that may be done. In a number of the investigations two groups were contacted, the children of poor cultural milieu and those of good. They are for convenience referred to as *p*-children and *g*-children. The *p*-children seem to prefer group games, and the *g*-children individual activities. In one study the proportion was 90 per cent in group games in the case of *p*-children and only 38 per cent in the case of *g*-children of all age groups.

The *p*-children show a greater adaptation to reality. In answer to a questionnaire as to whether the adult's authority is to be recognized or not, half the *p*-children and only a third of the *g*-children mention practical reasons for an affirmative answer. Answering the question as to whether lying is necessary or not, 50 per cent of the *g*-children and only 1 per cent of the *p*-children answer negatively with moral arguments. Most of the *p*-children think that life makes lying necessary. On the other hand the *p*-children tend to adapt themselves more to their life conditions. Their vocational ambitions do not exceed their concrete possibilities, their willingness to obey or to fulfill certain tasks is greater; practical necessities and responsibilities are earlier respected by the *p*-children. On the other hand, their interest in the general problems of civilization stops much behind the *g*-children.

A recent study in New York City attempted to determine whether there are behavior differences in groups of children in different social levels. A group from poor homes of a low general social status were compared with a similar group who came from middle-class homes. The Haggerty-Olson-Wickman Behavior Rating Schedules showed reliably higher problem tendency scores for the poorer group. Springer concludes that: [91]

> The general implications of the results are that behavior adjustment is closely related to the general social status of the individual. The children who come from good, middle-class homes make better and more satisfactory adjustments, while those from a poor general social level, show more maladjustment and undesirable personal characteristics.

Maturation. Maturation is another major factor in social development. Certain types of social responses to groups and to individuals seem to be fairly well associated with certain age ranges as has been indicated. Development of mental ability, attention span, sexual maturity—all show definite influence on the social development process.

Order of birth. The order of birth has often been cited as an important factor in social behavior. Studies in this field have been summarized [92]

[90] Murchison, *op. cit.*, pp. 405-406.

[91] N. Norton Springer, "The Influence of General Social Status on School Children's Behavior," *Journal of Educational Research*, Vol. 32, April, 1939, p. 591.

[92] Gardner Murphy, Lois B. Murphy, and Theodore M. Newcomb, *Experimental Social Psychology* (New York, Harper and Bros., Revised edition, 1937), pp. 348-363.

and the results are not clear. There do, however, seem to be particular types of problems that are more frequent in children in certain positions in the family. The only child may not be more or less of a problem than other children, but he does seem to have problems of a certain type oftener than others. Certain difficulties show up more often in the second child, others in the oldest child and still different ones in the youngest. So far, these are only indications of possible trends, but should probably at least be considered whenever an individual youngster's problems are studied.

The school's responsibility. Although the effect of the environment itself and of maturation is enormously important, there is still room for planned direction. Little has been done in our schools toward consciously guiding or stimulating this process of social development. It is in this field as much as any other perhaps, that the new education has a contribution to make. In this area a large part of the learning is of the unrecognized type. It is learning of which the learner may be totally unaware at that time or at any time. Ways of speaking, ways of doing things, attitudes, are often things of which the person is unaware until some one or something calls them to his attention. Yet they have been learned in his various contacts with his particular environment. Imitation and indirect suggestion account for much of such learnings. Teachers should be aware that what they are and say and do is fully as important to the child as what they teach.

Suggested Learning Experiences

1. Under the heading "Posture" are given certain seating standards. Check a class to determine which seats are satisfactory.
2. If an elementary class is available, physical measurements of the group should be made. Distributions of the measurements should be kept separated—for each year and also the boys from the girls. What increase takes place from one year to another? What differences are there between boys and girls of the same age?
3. Visit a primary class. What did you observe that violated what is known about the physical development of the child?
4. Visit a first, third, and fifth grade. What evidences of development in physical, mental, and social growth did you observe?
5. Make a distribution of the mental ages and intelligence quotients of a class. What is the range in mental ages in the class?
6. Summarize in one page a list of implications from the chapter for the grade in which you are most interested.
7. Locate one or more children who are problems to their teachers. Take their height and weight and compare with the norms. Are they within the normal range? Is the variance due to that particular child's natural build, or to other factors?
8. Have the child given a Binet intelligence test, if this has not already been done. Study the blank to find evidences of the various phases of mental growth. Make a chart showing his relative development in each phase.
9. Observe a class and note what was done to give opportunity for language development. Can you plan other experiences which would be more effective?

10. Study any discrepancies in growth, physical, mental, social, or academic, and see if they may be having any effect on the child's personality.

SELECTED REFERENCES

AMES, Viola Coprez, and FLORY, Charles D., "Physical Growth from Birth to Maturity," *Review of Educational Research*, Vol. 14, No. 5 (December, 1944), pp. 427-437. Reviews curve of growth, external dimensions and body form, organismic age, components of stature, factors conditioning growth, appraisal of physical status, build, and weight. Fifty-five references.

BOYNTON, Paul L., *Psychology of Child Development* (Minneapolis, Minn., Educational Publishers, Inc., 1938). Has summed up the main research in many fields of the development of children.

BRECHENRIDGE, Marian E., and VINCENT, E. Lee, *Child Development* 2d ed. (Philadelphia, W. B. Saunders Company, 1949), 622 pp. A comprehensive discussion with a valuable point of view.

BROWN, Francis J., *The Sociology of Childhood* (New York, Prentice-Hall, Inc., 1939). Consistently applies the principles of sociology to the entire field of the social development of the child.

CARMICHAEL, Leonard, editor, *Manual of Child Psychology* (New York, John Wiley & Sons, Inc., 1946), 1068 pp. A most comprehensive review of all the major research findings in the field of Child Development. Each of nineteen chapters written by a specialist in the field.

DEARBORN, Walter, and ROTHNEY, John W. M., *Predicting the Child's Development* (Cambridge, Mass., Science Art Publishers, 1941), 360 pp. A summary of the Harvard Growth Studies.

DEUTSCHE, Jean Marquis, *The Development of Children's Concepts of Causal Relations* (Minneapolis, Minn., University of Minnesota Press, 1937). A study of causal thinking with science data.

GESELL, Arnold, and ILG, Frances L., *The Child from Five to Ten* (New York, Harper and Brothers, 1946), 475 pp. An extensive description of boys and girls of these ages, taken year by year to show development of many phases, and also by growth gradients. This is now published with *Infant and Child in the Culture of To-day*, by the same authors, as a single volume, 1949.

"Growth and Development," *Review of Educational Research*, Vol. 17, No. 5 (December, 1947), pp. 305-379. Summarizes latest research on intellectual, personality, social and physical growth and development.

HURLOCK, Elizabeth B., *Child Development* (McGraw-Hill Book Company, 1942), 478 pp. A comprehensive treatment.

JERSILD, Arthur T., *Child Development and the Curriculum* (New York, Bureau of Publications, Teachers College, Columbia University, 1946), 271 pp. Discusses development through various stages and especially with implications for the curriculum.

LACEY, Joy Muchmore, *Social Studies Concepts of Children in the First Three Grades*, Contributions to Education, No. 548 (New York, Teachers College, Columbia University, 1932). Shows the development through the first three grades of many concepts.

MURPHY, Gardner, MURPHY, Lois B., and NEWCOMB, Theodore M., *Experimental Social Psychology* (New York, Harper and Brothers, rev. ed., 1937). An extensive treatment of the sociological aspects in the development of the child.

National Society for the Study of Education, *Child Development and the Curriculum, Thirty-Eighth Yearbook* (Bloomington, Ill., Public School Publishing Co., 1939). Chapter I discusses child development and the growth process; Chapter XVIII, emotional and social development; and Chapter XIX, implications of the data on development.

REDL, Fritz, "Pre-Adolescents—What Makes them Tick?" *Child Study*, Vol. 21, February, 1944, pp. 44-8+. An excellent discussion of the stage from nine to thirteen and what to do about these children. Every person dealing with this age should read this article.

SKODAK, Marie, *Children in Foster Homes: A Study of Mental Development*, University of Iowa Studies in Child Welfare, Vol. 16, No. 1 (Iowa City, Iowa, 1939). A recent

study which seems to show that it is the home rather than the child's true-family background which for practical purposes sets the limits of his mental development.

SKODAK, Marie, and SKEELS, Harold M., "A Follow-up Study of Children in Adoptive Homes," *Journal of Genetic Psychology,* Vol. 66, March, 1945, pp. 21-58. Confirms tentative conclusions of the study.

STODDARD, George B., *The Meaning of Intelligence* (New York, The Macmillan Company, 1943), 504 pp. A comprehensive discussion. Particularly pertinent are Chapters XIII to XVI on heredity and environment and the educational and social implications.

STRANG, Ruth, *An Introduction to Child Study,* rev. ed. (New York, The Macmillan Company, 1938). Has sections on growth and development in the primary period and from the primary to adolescent years, as well as preschool and adolescent periods.

THORNDIKE, Edward L., and others, *The Measurement of Intelligence* (New York, Teachers College, Columbia University, 1926). A most comprehensive and thorough study and interpretation.

THORPE, Louis P., *Child Psychology and Development* (New York, Ronald Press Company, 1946), 781 pp. A thorough treatment of many of the growth phases discussed.

TYLER, Leona E., *The Psychology of Human Differences* (New York, Appleton-Century-Crofts, Inc., 1947), 420 pp. Presented in readable form, information on individual differences in many areas.

WATTS, A. F., *The Language and Mental Development of Children* (D. C. Heath & Company, 1944), 342 pp. A comprehensive treatment of language, its development and relationship to the child's development, personality, and feeling.

WELLMAN, Beth L., "Growth in Intelligence under Differing School Environments," *Journal of Experimental Education,* Vol. 3, December, 1934, pp. 59-83. Reports the main findings in the Iowa study of increase of intelligence.

3

The Child and His Developing Emotions[1]

I. EMOTIONAL HEALTH: BALANCE OR BREAK-UP?

Just as a child grows and develops physically in height and weight and muscle coördination; just as he grows and develops mentally in memory and reasoning and ingenuity; just so does he grow and develop emotionally in his feeling toward himself, toward other people, and toward his place in the world. The physical, mental, and emotional do not represent three separate and clearly distinguished categories to which all information about the child can be assigned. Far from it! Nearly every fact about the child is a result of the interaction of these phases and has been affected by them to a certain extent.

Does one aspect of a child affect another? A child's build is affected by his emotions. A tense and insecure person is apt to be "thin as a rail," quick, and restless. A "red head with freckles and homely as a rail fence" can feel very much out of things, and avoiding his unhappy association with people, refuse to become a participating member of society. Or he may try to get even with a "hostile" world and become a trouble-maker, a delinquent, or perhaps a criminal.

A child's ability to learn the lessons taught in school make him a praised, accepted, or envied member of the group, in which case he may be happy and well satisfied. Or he may develop ideas that he is better than everybody else and be very unhappy when he finds something at which he does not excel. Under these circumstances some children avoid all those things which they can not do to perfection and thus narrow down their field of interests. Others, in spite of all their areas of success, feel that they are failures because they can not excel at everything.

If the child does not receive approval for his school work he may feel he never can succeed at anything and avoid all attempts which he is afraid may end in failure. He may search for those things which he can

[1] In the original edition this chapter was called "The Child as a Developing Personality." After further consideration it is apparent that the phases of the child discussed in Chapter 2 are just as much a part of his personality as any other. There we have considered the child mainly from the physical and mental standpoints. Here we consider the emotional. The next two chapters consider his interests and the way he learns not only subject matter but how to live in our complex democratic society. At this point we cannot feel but that each of these four chapters is mutually and inextricably related and that the total picture must be considered in order to portray the child's personality.

do well. Usually these are things like annoying the teacher or pestering his classmates, or losing himself in his daydreams and a full scale "problem child" results.

Recently there has been accumulating evidence that the reverse is also true. If the child is unhappy and insecure it may affect adversely not only his ability to do school work but all his abilities which we put together and label intelligence. Thus by improving a child's emotional development we may not only make him a happier child but a more intelligent one as well.

These are only a few examples in much simplified form which show how completely interdependent are all the aspects of a child. It shows why we should never come to even a tentative conclusion about a child until we have put in considerable study on all phases of his development.

Can emotional development be influenced? Emotional development seems to be that phase of a child's life which is most easily influenced by outside contacts, and influenced to the greatest extent. Those who have studied it believe that even the happenings of the first few hours of a baby's life have an influence on his future behavior. Many studies have shown that the first few years of a child's life are tremendously important in determining the kind of a person he will be. Educators have been pessimistic about the effectiveness of the school to make any appreciable amount of change in behavioral habits so well established in preschool environment. But as more and more studies of this type are made we find we can be more and more optimistic about the possibility of change. Both the atmosphere of the classroom and the type of contact of the teacher with the child, seem to have considerable effect when measured over a period of a few months. What the effect might be over the child's whole school life is almost frightening to consider when we realize our responsibility for it.

Mental Health or Emotional Health? First perhaps our thinking will be clarified if we say "emotional health" instead of "mental health." Our terminology is a holdover from the days when all reactions of a person could be classified as either physical or mental. Then when "mentality" began to be measured and designated as intelligence, "mental" became nearly synonymous with "intellectual." Since that time no one is quite sure to what "mental" refers unless it is specifically stated each time. Emotions,[2] however, have to do with feelings; how we feel about ourselves, about others, about people's reactions to us. Thus, mental ill

[2] Emotion here is used in the broad, general sense. There is still a great deal of haggling among the scientists as to just what emotions are and what is their physical basis; and whether or not they are different in degree or in kind from feelings, and where the dividing line is. Since with all their study and experimentation they can not be sure, it seems pointless for us to try to distinguish between them. Especially is this true since the means of developing and controlling them in a practical situation is the same. For our purposes here, then, emotional will refer to the whole range of feelings from mild to intense. It is distinguished from mental, which has to do with knowing and understanding.

health would be more truly spoken of as emotional ill health. Although often the intellectual abilities of a "mentally ill" person are affected, they are not necessarily so. It is mainly their feelings about the world about them and their relation to it which is out of line.

How Important is the Development of Emotional Health? The importance of emotional health can not be over estimated. Let us read the reactions of a man who is in an excellent position to know. Menninger is a psychiatrist, one of the founders of the Menninger Clinic in Topeka, Kansas, and was president of the American Psychiatric Association and Chief of Army Neuropsychiatric Services during World War II. Here is his evaluation.[3]

Though there are no complete or totally accurate figures, some indices leave no doubt as the extensiveness of personality disorders, including mental illness.

There were 88,000 more beds in nervous and mental hospitals in 1947 than in all of the general hospitals in America. Between 50 and 60 per cent of all the patients in our veterans' hospitals have some type of sickness in their personalities. During the last war, the total judged not sufficiently adjusted emotionally to be good risks in military service amounted to nearly two million, or one out of every eight men who came to the induction center. There were 718,000 men who had to be discharged from military service because of some type of personality problem—more than for all other types of medical illnesses or disorders put together.

It is estimated that 50 per cent of *all* patients who consult physicians become ill from the stress and strain of life on their personalities. Mismanaged emotions reflect themselves in hearts and stomachs, intestines and joints, so that patients complain about the discomfort or misfunction of these organs.

All of the above figures pale into relative insignificance in comparison to the total amount of mental illness. Any estimate would have to include emotional upsets which incapacitate people temporarily. Transient emotional disturbances, which do not necessarily keep a person from his work, reduce efficiency and satisfaction.

Emotional maladjustment costs energy and therefore money. One pays in some way for disappointment, frustration, insecurity, hostility. Many varied symptoms result, in the form of depression, anxiety, fear, suspicion. It is acted out in marital problems, misbehavior, prejudice, discrimination, and antisocial acts. The incidence of crime, an expression of maladjustment, has reached an all-time high. The federal government spends nearly ten times as much to handle social failure—delinquents and criminals—as to improve mental health. The cost of operating the penitentiaries and reformatories is "chicken feed" in comparison to the actual cost of crime to the country—estimated to be between eight and ten billion dollars a year.

Prevention and early relief of troublesome conflict are important. Even mild maladjustment may become chronic or acutely severe if not corrected. There is an imperative need for society—that is, for individuals like you and me—to initiate corrective measures.

The expected incidence of problems has also been put in terms of school children.

[3] William C. Menninger, M.C., "Recreation and Mental Health," *Recreation,* Vol. 62, Nov., 1948, pp. 340-342, and *Education Digest,* Vol. 14, January, 1949, pp. 1-2.

One writer has estimated that a teacher of an average class of forty children may expect that in later life seventeen to twenty-six of her pupils will suffer from conditions ranging from unhappiness and a sense of futility to criminal behavior or insanity. Included with this is the estimate that out of one hundred typical school children one or two will commit major crimes and spend part of their lives in jail. Eight to ten will develop serious mental illnesses and will spend part of their lives in mental hospitals or under private care. Three or four will be so retarded that without special training they will have great difficulty in becoming self-supporting or useful citizens. This author also estimates that thirty to fifty will be maladjusted individuals with maladjustments taking such forms as petty crime, vocational failure, chronic unemployment, emotional instability, marital unhappiness or divorce, and other forms of failure to make a satisfactory go of things.[4]

What relation has all this to the development of emotional health in the schools? By far the greater number of those of whom Menninger and Jersild wrote are "curable" with the proper treatment. If they are curable their illness could have been prevented. Psychiatrists also believe that the illness of many so-called "incurably insane" could also have been prevented. If then such a great proportion of such an immense problem is preventable, no effort should be spared in that direction. The public schools have the greatest responsibility. They are the only agency which has contact with all children. And they have this contact from a minimum of six to eight years up to fourteen or fifteen years. The elementary school contacts all children for at least six years. It reaches children at a time in their life when help can be most effectively given. Its personnel are trained, certificated, and are accessible to any widespread planned program of study. It is up to us, as a group and individually, to assume the major part of this responsibility.

What specifically can the schools do in carrying out this responsibility? The schools basically have two major responsibilities: (1) to permit and insure the satisfaction of the basic emotional needs of children; and (2) to recognize and provide adequate remedial care for pupils already emotionally ill.

What are the basic emotional needs of children? In order to satisfy the child's basic emotional needs the school personnel must recognize what these needs are and further know how they may best be satisfied. Several authorities in the field have presented lists of basic needs and they are very similar. Elsbree [5] lists the following:

(1) urge for success, achievement, mastery and desire to avoid failure, frustration, and disappointment.

(2) craving recognition, approval, and admiration—(attitude of others plus inner feeling of achievement).

[4] As quoted by Arthur T. Jersild, "Child Development and the Curriculum" (New York, Bureau of Publications, Teachers College, Columbia University, 1946), p. 145.

[5] Willard S. Elsbree, "School Practices that Help and Hurt Personality," *Teachers College Record,* Vol. 43, October, 1941, pp. 21-34.

(3) sympathy, affection, intimacy, and a deeper understanding of one's self.
(4) security, freedom from physical want, a sense of possession, release from worry and anxiety.
(5) adventure, new scenes and experiences, exhilarating activity, change from monotony, dullness, and routine.

Hopkins [6] writes with a slightly different emphasis. He lists the "essentials" as:

(1) Each child must be reared in emotionally stable, consistent environment.
(2) Each child must have security in or with adults.
(3) Every child must have status with his peers.
(4) The child must be free from fears and anxieties of all kinds.
(5) The child must have freedom to explore his environment.
(6) Children must have sympathetic guidance in building intelligence within their own experiences.
(7) Children must have protection from situations in which they are unable to act intelligently.
(8) Children must have plenty of opportunity to work in we-relationships.
(9) Children must have aid in clarifying their meanings.
(10) Children must have aid in distinguishing between a world of reality and a world of phantasy.
(11) Children must understand the process of learning, of working relationships with others, of coöperative resolution of their problems.

Thorpe [7] classifies the basic needs of the child under organic needs and psychological needs. The organic needs require no comment as they are pretty universally accepted. The psychological needs he combines under two headings, *need for maintaining a sense of personal worth* and the *mutuality need,* or the extending to other individuals the same recognition and status that one needs for the support of his own personality. To maintain a sense of personal worth children need favorable notice, social approval, distinction, or individuality. They resent being shunned, ignored, or disparaged. They have a need for status or feeling of belonging and for affection.

The other side of the picture, the mutuality need, Thorpe believes is not sufficiently recognized. Children need to extend respect, recognition, and generous service to others, particularly to those with whom they associate. It has great value for mental health and social harmony. The process of growing up socially and emotionally is one of becoming less and less individualistic and increasingly social so that they understand others' needs and use sincere social skills in dealing with them in every day relations.

Prescott has done a great deal of work in the field of emotions and emotional needs. He lists the following as social and integrative needs:

[6] L. Thomas Hopkins, "What are the Essentials?" *Teachers College Record,* Vol. 46, May, 1945, pp. 493-500.
[7] Louis P. Thorpe, *Child Psychology and Development* (New York, Ronald Press Co., 1946), pp. 188-191.

affection, belonging, likeness to others, contact with reality, harmony with reality, progressiveness, symbolization, increasing self-direction, a fair balance between success and failure, attaining selfhood or individuality.[8]

Each authority has summarized his thinking in a somewhat different way, with slightly different emphasis but with basically the same needs included. In addition to these emotional needs there are some of the physiological, with which the school should be particularly concerned in their effect on emotional development. These are need for rest and activity, and the urge to get rid of painful or disagreeable substances or conditions.

Schools are doing a very good job of fulfilling some of these needs for many of the children. Other of these needs have not been recognized or accepted as a responsibility of the school. In very few cases are many of the needs of *all* children being met. The "problem child," the one whose needs have up to that time been least well met by home, school, and out-of-school environments, is the one whom the school is doing the least for. Don't misunderstand, he is the one they are undoubtedly doing the most *to,* but still the least *for.*

What can or should the school feel is their responsibility in fulfilling the needs of all the children in their care? Let us summarize and recombine the needs as given above and look at each one in turn. Let us look at it in terms of youngsters and at least suggest some of the things schools and teachers must take the responsibility of doing if we are to meet our obligation of developing emotionally healthy, well-adjusted individuals. Let us use Thorpe's main headings, the *need for maintaining a sense of personal worth* and *mutuality,* and study the various specific needs under them.

II. BASIC NEEDS: A SENSE OF PERSONAL WORTH

Security. This is almost as broad as a sense of personal worth, but perhaps we can find a few specific responsibilities that belong here more than anywhere else. Perhaps security may be thought of as a freedom from fears and anxieties of all kinds. Do schools engender fears and anxieties in children? If so we are tearing down rather than building up security.

What fears and anxieties does the school create? First, many teachers still set a standard of work, both as to amount and kind, which is expected of all children. Many of the children in each room realize only too well that they can never meet these standards to the satisfaction of the teacher. They are licked before they start and they know it. At first, they may try very hard to do a job that is beyond them. If they only meet with criticism for not having done better, the docile ones continue to try in a half-hearted fashion, hindered by constant fear of the reproof they

[8] Daniel A. Prescott, *Emotion and the Educative Process,* (Washington, D. C., American Council on Education, 1938), Chapter VI.

know is coming. The less docile rebel, and by passive resistance or active revolt, refuse to make more than a token attempt. For who among even adults willingly work hard at a job which they know will only bring them shame and reproof?

The school's responsibility here seems to be to expect from each child only what he can do at that time. That is all he will do anyway. If these efforts are met with approval, he is given confidence instead of anxiety. His next efforts have a great deal better chance of being more successful.

Another way in which the school creates fears and anxieties is by presenting concepts which are beyond the interest and understanding of the children. The conventional history and geography books contain much that is almost meaningless to most children. Many arithmetic problems have no relation to the child's experience. Spelling words are clear beyond the child's speaking vocabulary, to say nothing of his writing needs. In all these cases, if a child is to succeed it must be a matter of pure memory. He has no other means of recall because it has no connection with his past experience. Having to depend upon such a slender thread, especially when one's rote memory isn't too good anyway, is bound to create anxiety and uncertainty.

The school's responsibility here is to provide learning experiences which are within the experience of the child or which can be built on his experience. They then have his interest and in turn become a part of his experience. He understands them and does not have to depend on rote memory to come up with the "right answer." Incidentally, this is the only way learning of any real value takes place.

A third major way in which teachers create fears and anxieties is by the atmosphere of the classroom. It should be calm and as free as possible from tensions and hurry. There are few things more contagious than tension. If the teacher will remain relaxed and unhurried and remember that "easy does it" she will have a far calmer room where the children will get much more accomplished in the long run. Hurry and tension build anxiety.

The atmosphere should also be emotionally stable and consistent. Inconsistency in handling children is a most effective way to create insecurity. If a teacher one day or one minute is helping children to live together democratically, solving their own problems, and the next, lays down an authoritarian edict, they never know what to expect. If she works along with various pupils at their own rate and level and then sends out report cards all based on a class standard, a good share of her good work is undone as well as anxieties incurred. If she lays down a rule, and for a few days keeps to it, then lets the children get by without observing it, only to crack down on it later, the children are always wondering when they can get by. This leads to their trying it out again and again because they feel they must know what will happen. Not knowing causes too much anxiety. This leads to what they call "testing the limits." We

almost always find children "deliberately doing what they are told not to" under this type of discipline. It is not because they want to do wrong, but because they just have to know where the limits are, and that they are there consistently no matter when or by whom they are tested.

The school's responsibility, of course, is to establish a policy of tranquillity and consistency with good teacher-pupil relationships. It should make it possible for teachers to work in this way and actively assist their classes. Most of the following needs of the child, when met by the school situation, also increase his sense of security.

Success. The key here is the proper balance between success and failure, as Prescott puts it. If a child seldom or never has even a temporary failure he is not doing work which challenges or is commensurate with his ability. He gets a feeling that he can do anything. When he does find something at which he fails, it is often more of a shock than he can successfully weather. He may avoid the whole area in which his failure occurred so as to prevent any possible recurrence. He may lose confidence in himself and have more failures which were unnecessary and begin developing feelings of inferiority. Ackerson [9] found that higher intelligence tends to be associated with inferiority attitudes, and this is undoubtedly one reason.

So often a single standard of work is expected of all children. When this is true, it is necessary to have that standard geared to the average or low average of the group. This makes the work so easy for the bright pupils that, if they have not lost interest, they can not help but succeed, and with little effort at that. This sets the stage for the problem discussed above.

Now let us look at the other side of the problem. Continuous failure is much more devastating than continuous success. Even much less failure than that can cause a child to give up trying for he knows it is of no use. Repeated failure can also destroy enough of his self-confidence so that he is unable to do as much as he could otherwise.

The school's responsibility then is to provide learning experiences of proper difficulty for each child. They should be difficult enough to be challenging to him and so that occasionally he has a temporary failure before he succeeds. They should also be sufficiently within his ability so that he may have every confidence that with a little work he will succeed. This sounds like a big order and would be under the textbook teaching system. However, when material is organized around units of experience with children interested in solving the problems which they have recognized as inherent to such units, most of them, with a little guidance, do work quite commensurate with their ability. Those who do not, need a little more guidance.

[9] Luton Ackerson, "Inferiority Attitudes and their Correlation among Children Examined in a Behavior Clinic," *Journal of Genetic Psychology*, Vol. 62, March, 1943, pp. 85-96.

Recognition. Children need recognition. Every child needs recognition for something. It might be well for every teacher to keep a chart for herself for a week and check each time she has sincerely given praise or recognition. At the end of the week she may find some names with many, many checks, others with a few, and several with none at all. Among these last will probably be the "problems" and the quiet unobtrusive children that you almost forget are there. And these are the ones which need it the most. You may say, "But they don't do anything that merits praise." This can hardly be literally true, for no child is wholly bad. Rather it is the result of what is called the "halo effect." A child to whom people react favorably on most occasions can do something for which a "problem child" would be reprimanded and be either praised for it or have it ignored. This is because one expects a good child to do good things and a problem child to cause trouble. Our expectations color our reactions to what children do to a considerable extent. If we are very objective about it for a while we may be surprised. Watch carefully for something to praise and when possible ignore undesirable behavior. Do not expect reformations in a day or a week but some progress should be noted in a month and a definite change in a term.

Recognition is such a powerful need that, if praise can not be obtained, the child will prefer criticism to being ignored. Children tend to repeat those things for which they have received attention, so it is important to watch on which things we comment. Usually the worst problems concern those behaviors over which we have made an issue. It is amazing how a little praise and recognition of the group will turn the child's attention to constructive activities.

As to the child who is so quiet as to be forgotten, he needs recognition too. But not for being quiet! Try to get him to take part gradually in group activities. Each success, no matter how minor, should receive recognition.

The child who always wants to talk during group discussions should receive recognition for letting others have a turn. The child who has difficulty with his reading should receive recognition for bringing a story to read to the group even though it be a very simple one. The child who has never yet made a run in baseball should receive recognition for hitting the ball even if it did turn out to be a fly. And so it goes. Find their weaknesses, their needs, and recognize each gain, no matter how small.

Sympathetic Understanding. Various authorities list sympathy and understanding as basic needs. It seems perhaps that the combination of the two terms is even more meaningful. Sympathy is too often thought of as maudlin sentimentality. Understanding may be merely an intellectual analysis of the child and his problems and needs. Neither of these is what we mean. There must be clear unbiased intellectual analysis; but in doing something for the child one needs more, much more. There must be a sincere liking for the child, a belief that as a person he is worthwhile

and that to him his life, his happiness, is as important as ours is to us. This understanding children is a big job and probably the very most important we have as teachers. Some people by their previous experience have learned to be sensitive to the feelings and needs of others which are carefully hidden behind the protective front they put up to the world. All of us can learn to be more so. (See sections IV and V.)

The responsibility of the school is to help all teachers through whatever means are available, to learn to better understand the children for whose development they are responsible.

Acceptance as he is, with respect. The caricatured school-teacher attitude is one of immediately finding faults in the child and setting about correcting them in no uncertain terms. We hope by now this is true only in comic strips. We may still, however, need to guard ourselves against this attitude. If we do accept the child as he is and he can feel that we do, we have a great deal better chance of helping him. As soon as he feels we are critical immediately his defenses are up. He resents us as we resent those who are openly critical of us. He may know that we disapprove of some of the things he does but he should never feel that we disapprove of him as a person.

Now let us look at the implications of the phrase "with respect." What do we do when we treat some one with respect? Certainly we are always courteous. We never nag or yell or scold. We never use sarcasm or otherwise humiliate him. If we have personal matters to discuss with him we do it with him alone and not before the whole group. We build him up before his friends by mentioning his successes rather than tear him down by discussing his failures.

With children we must be sure our respect is sincere. When we are getting ready to plan a new unit, if we decide ahead of time just what it will include, and just how it is going to be carried out, we are not sincere when we ask the children what they would like to study about and how they would like to work. They feel this lack of sincerity and our lack of respect for their thinking. If for various reasons certain areas of material must be covered, tell them so frankly. Let them plan with you whatever part of the unit permits of variation and choice. Be sure you are taking their own suggestions and not accepting those which you have indirectly put into their mouths.

Another way of showing respect is by letting them realize that you "don't have all the answers." Especially with the older children, they may very well add to the factual material available on a topic from outside sources or their own experiences. If you respect a child's contribution it adds to his confidence and self-respect. With all ages of children, they may sincerely contribute to a solution of behavioral problems. Their very thinking and planning in this direction, when they know that their suggestions will be considered seriously, makes a big step in the solution of the problem.

Status with his peers. It used to be that the only relationships in the classroom were teacher-pupil relationships. At least the teacher tried to limit them to such. The children's relationships outside would take care of themselves, and after all it was just play and not important. A very different attitude is taken today. We realize now the importance of children's relationships with other children. In fact, it probably makes more difference to children what other children think about them than what the teacher does. A great deal of work has been done in the last ten years in sociometry, the measurement of the social interrelations of groups. A more extended discussion of it appears in section V.

Our responsibility for developing these important social relations lies in several directions. It lies in our attitude in the classroom. By showing respect for all pupils at all times we increase the respect of their classmates for them. By giving recognition to the shy retiring child we call the attention of others to him and increase the chances of building up inter-pupil relations around him.

Our responsibility also lies in our management of the classroom. If we have each child keep to his own seat and punish him for conversing with his neighbor we are inhibiting this very important development and missing great opportunities. If instead there are periods in the day that are work periods, where children are divided into groups, opportunity for much important development is provided. Here we have socialization under supervision. Each child is then a member of a group ranging in number from two upward. He and his partner or other members of his group have a chance to learn to work together on a common problem, give and take suggestions, and develop common interests. Much of this may carry over to their out-of-school contacts.

Still another area of responsibility is on the playground. A great deal more supervision is needed here than is usually given. Too often the letter of the law, "have a teacher on the playground whenever children are there," is followed by a teacher's standing on the playground correcting papers or standing in the doorway talking with another teacher. She feels she is doing her duty if she settles "scraps" that the children bring to her, and applies first aid when needed. But think of the opportunities she is missing! Does she do anything about, or even see, poor little lonely Mary, who stands by with her finger in her mouth while a group of her classmates play house and ignore her? Does she help nine-year-old Johnny hold his bat correctly so that he will be accepted as a useful member of the baseball team instead of ridiculed till he retreats to the sidelines feeling he will never try again? And so again and again, a word of encouragement here, a suggestion there, an idea for a new game for a group who are getting bored and irritated over the one they are playing and don't know what to do about it: all these add tremendously to the social development of children. It gives them added status with their peers, greater security, and an added sense of personal worth.

Increasing self-direction. Self-control and self-direction are an essential part of maturity. Children do not learn these by continual direction and control from outside. They must have experience in them, largely successful experience. We set the stage by planning with the children what they will do and then turn over to them an increasing amount of the responsibility for carrying it out. As long as it works out successfully with a child, growth is being made and self-confidence developed. When it breaks down it means the child needs a little more planning or help from outside. One must be careful not to take away responsibilities which the child can carry out, but only to give help where needed. Self-control and self-direction give a child added self-respect. They increase his learning activities and make the freer, more informal, more effective classroom possible. However, all this seldom happens by itself, at least not as soon or to as great an extent as when its development is planned. Children enjoy working at acquiring control and direction, and a great deal of progress can be made. It is in a situation like this where teacher-pupil planning can be particularly effective.

Contact and harmony with reality. Little children often get confused between fantasy and reality. They are not sure whether something happened in a dream or in real life. They have not learned to tell the difference between fairy stories and true stories. With a little careful explanation this problem is easily solved in the first or second grade. However, we must be very sure that we recognize this for what it is and never accuse a child of telling a falsehood just because he has not yet learned to distinguish between reality and his daydreams. This only creates further problems and solves nothing.

There is another problem of facing reality that is not so easily solved. When a child feels that he is inadequate in some way, he may spend hours in daydreaming and wishful thinking. He may pretend he is handsome, or popular, or so brave that everyone looks up to him and is amazed at his deeds. He tries to fill the need for approval and recognition by his peers and his teacher, by pretending he has what he feels sure he lacks. A certain amount of daydreaming is normal and desirable. However, a child can never be really happy and emotionally healthy until he can accept himself as he is and gain satisfactions from it.

When such a child is located, study may show what it is that he finds hard to accept. It may be a real handicap such as a socially or economically inadequate family, or a physical deformity or low intelligence. If so, help him to accept it as far as possible by setting his goals in harmony with the handicap. Then track down the abilities he does have and help to build these up. As he gets real recognition for these, acceptance of his shortcomings will be easier.

If, on the other hand, his problem is one that is not a real handicap but one he has only thought of as such, that is a different matter. It may be easy or difficult to get him to recognize that his is no serious problem.

At times it is easier to get a child to accept a real handicap than to realize the unimportance of a fancied one.

Adventure. Few school people have thought of adventure as a basic need of a child. Fewer still have felt it the responsibility of the school to supply it. We certainly can't take children hunting lions in Africa, but there are many other experiences that we can supply. Children, in their need, seek adventure on their own. If they are not allowed to do the things which satisfy this need, they take forbidden means of satisfaction or develop other unhealthy signs of frustration.

Some of the usual means children take for finding adventure are groups doing daring and "dangerous" deeds, going to adventure movies, listening to adventure stories on the radio and reading "comic" books. All of these are frowned on in greater or lesser degree by many parents and teachers. If they are eliminated or nearly so, and no substitute furnished which fills the child's need, trouble is in the making. Most children should be allowed or even encouraged to get their adventure vicariously in some of these ways. There are two points to watch, however. It should be carried on within reason and not to excess. Second, it should be supervised only to the extent that we can be sure it is pretty good, clean, adventure. Too highly sophisticated, immoral, or lascivious literature or shows should, of course, not be a part of children's experience. But otherwise adventure stories, even though they include a lot of "blood and thunder" or are quite divorced from the realities, probably contribute to his emotional health. It is only when children read comics, go to movies, and listen to radio thrillers and such things in excess that we should be concerned. It is not that doing them in excess is going to harm them particularly. It is an indication, rather, that the child's adjustment to the rest of his life is not what it should be. In a study on the reading of comic books Heisler [10] found that the only difference between the ones who did and those who didn't was in the personal and social adjustment score, where the comic book readers had a lower score. The chronological and mental ages, the educational achievement, and the socio-economic rating were the same for both groups.

In what other ways can the school provide adventure in a constructive way? First they can make the children's learning experiences alive and meaningful. There is a great deal of adventure in history, in science, in literature. Too often, the excitement is practically eliminated by the drill on the facts. If, instead, the adventure of the occasion were played up, the children would remember more of the facts with no drill, and gain a great deal more besides.

We can eliminate monotony, or most of it. Routine is necessary and desirable, but an occasional break in it is a great lift to the spirits. Other

[10] Florence Heisler, "A Comparison of Comic Book and Non-Comic Book Readers of the Elementary School," *Journal of Educational Research,* Vol. 40, Feb. 1947, pp. 458-464.

places in which monotony can be eliminated are dress, tone of voice, and appearance of the classroom. A new picture on the wall may be a real adventure, even if it is only a borrowed one.

III. BASIC NEEDS: MUTUALITY

The need of social contribution. Until now we have been considering needs which contribute to a sense of personal worth. They had to do with how the child felt about himself and what others thought about him. Now we are approaching emotional health and development from the other point of view—how he feels about, and what he can do for, others. Surprising as it may seem, many writers have missed this important need. When they discuss social needs they refer to such things as a feeling of belonging to the group, and status with his peers. This is quite a different thing from social contribution.

Thorpe [11] discusses mutuality, which according to the dictionary means *reciprocity*. In brief, he believes that the social motive involves extending to other individuals the same recognition and status that one needs for the support of his own personal integrity. It is important for the balanced living of children as well as adults to learn to extend sympathy and aid to those in distress and to adopt a humanitarian attitude toward unfortunate and underprivileged individuals. Mutuality, as Thorpe uses it, also includes an understanding of people's needs and the use of sincere social skills in dealing with them in everyday relations.

Infants are, of course, individualistic in that they need constant care without giving service or recognition in return. A portion of maturity consists in developing attitudes and abilities of social reciprocity. He "must learn to win his status and approval through the avenue of social skills. The acceptance of social obligations is essential to development beyond the infant stage, thus one of the most fundamental needs of children is that they become independent but reciprocal personalities within the larger social framework." [12] If we can then teach the child how to make himself liked, his sense of personal worth is more easily maintained and we have more likelihood of developing an emotionally healthy individual.

Unsocialness is the most serious problem. A group of fifty-five mental hygienists agree that unsocialness is the most serious behavior problem of children. Mitchell [13] in 1940-1941 repeated Wickman's study of *Children's Behavior and Teachers' Attitudes.*[14] He issued forty-nine problem

[11] Thorpe, *op. cit.*, pp. 190-192.

[12] H. G. Miller, "The Transformation of the Self in Children," *American Journal of Mental Deficiency*, Vol. 48, 1944, pp. 374-378, as quoted by Thorpe, *op. cit.*, p. 191.

[13] John C. Mitchell, "A Study of Teachers' and Mental Hygienists' Ratings of Certain Behavior Problems of Children," *Journal of Educational Research*, Dec. 1942, Vol. 36, pp. 292-307.

[14] E. K. Wickman (New York, Commonwealth Fund, 1929).

traits and had both mental hygienists and teachers rate them in order of seriousness. Further results of this study are given on page 80. Unsocialness was also rated highest and "of Extremely Great Importance" by the thirty mental hygiene clinicians in Wickman's study.

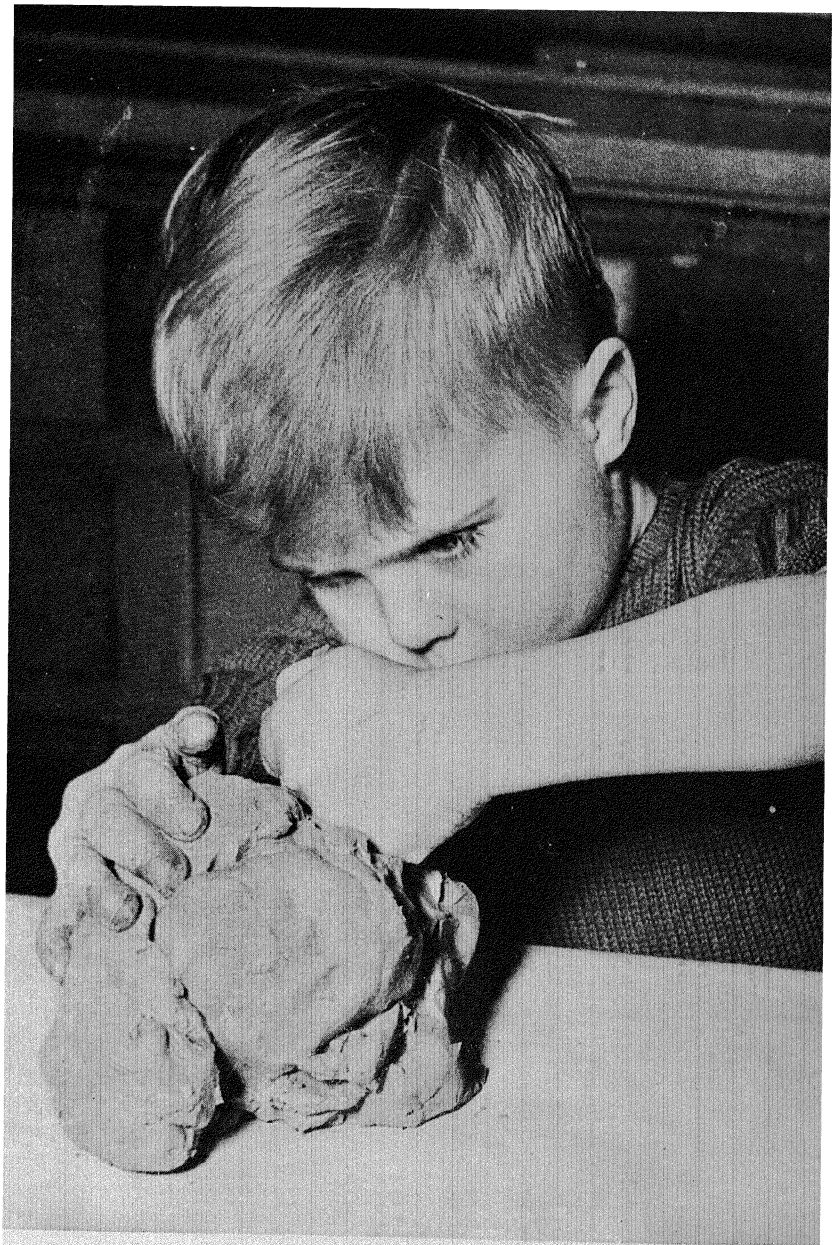
With this evaluation of the problem in mind, let us consider the responsibility of the school concerning it. If a child is going to learn social skills and competencies then he must have guided, supervised experience. But what do we find in many classrooms? Whispering or communication of any kind is forbidden. Children are not even supposed to watch other children. They must face the front, pay no attention to their neighbor, and just attend to their own work. Their only social contacts are before and after school and at recesses, which are supervised inadequately or not at all. What supervision there is is usually just to "keep the peace." Too many schools are not only doing nothing to solve this important problem, but are bending every effort to prevent its solution.

One responsibility then is to provide learning situations where children work and play together in groups, under supervision and guidance. The groups should vary in size from one partner to three, four, or five, and on up till the whole class is actively working together. The groups need to be shifted so that during the term each child gets a chance to work closely with many of the children. Grouping is further discussed on page 50.

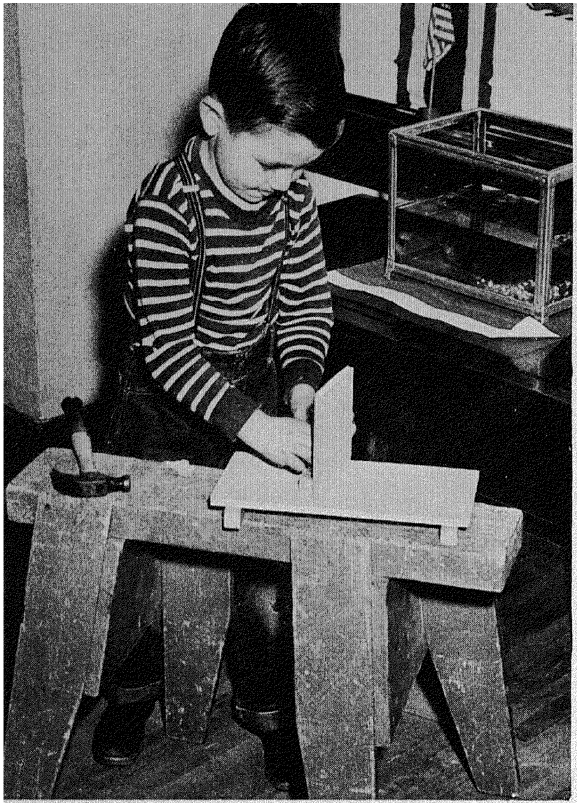
Is there any further responsibility on the part of the teacher to develop socialization? There is a very clear answer to this in the series of studies of *Teachers' Classroom Personalities.*[15] Among the findings was the fact that teachers' classroom personalities definitely affected the social contributions of children in their room. The contacts the teachers made with individuals and groups were rated among other things for "domination with evidence of conflict" and "integration with evidence of working together." There was definite statistical evidence that socially integrative contacts, where the teacher and pupil were working toward the same end, produced considerably more social contributions than all the other types recorded. Correlations between integrative contacts and social contributions ran as high as .82. This study and its findings are further discussed in section VIII.

Opportunity to work in we-relationship. When the child has the chance to work on a project of any sort with other children or with the teacher in a sincere we-relationship, it does many things. It gives him a feeling of belonging, of status, and of being accepted with respect. Besides this, and perhaps of more importance, it provides an experience where there is a give and take on equal footing. It is a situation where social skills may

[15] Harold H. Anderson and Joseph E. Brewer, "Studies of Teachers' Classroom Personalities, II," *Applied Psychology Monographs,* No. 8, American Psychological Association (Stanford University, California, Stanford University Press, June, 1946). Discussed at length beginning with p. 112.



Self-expression



Accomplishment
(at left)

"One responsibility, then, is to provide learning situations where children work and play together in groups."
(below)

be tried out or practiced. There is a chance to contribute to others as well as a chance to accept suggestions from others.

Responsibility for their group through democratic processes. This is carrying the previously mentioned need one step farther. Working in a we-relationship is a coöperative project, but one does not necessarily feel responsibility for the progress of the group. However, when a group is organized democratically, the purposes and plans are established by all. Then each one assumes responsibility for carrying out his particular part of the project so that it will fit in with everyone else's contribution. Together then they have solved a problem of interest or of use to all. This is a very dynamic and effective type of social contribution. It is within the possibilities of every school to provide. It is a challenge to the responsibility of every school in its development of emotional health.

These foregoing pages have summarized the most important of the needs. They have suggested in a general way the responsibility of the school for meeting those needs. The next problem is to recognize the problems of children due to the frustration of one or more of these needs. After these problems are recognized it is then up to the school to do something constructive about solving them, either within the school program or if the problem is too great, by calling in the help of experts trained to this purpose.

IV. HOW CAN WE RECOGNIZE THE PROBLEMS OF CHILDREN?

"Problem children" or "Problems of children?" First let us consider the wording of this topic. It does not say problem children! When we say problem children we think of them as being somehow different from ordinary children, at least by implication, because of something inherent in them. It has been said there are no problem children, just problem parents and problem teachers. This attitude is little, if any, better. Rather let us say all children have problems, some more than others. The problems are brought about by their own particular world, which consists largely, first of parents and home, and secondly of teachers and fellow pupils. Problems then can be solved by making some adjustment in either one or both of these.

First we have to recognize the problems of children. How are we to know which behavior is a symptom of a serious problem and which is a normal and natural reaction which is doing more to build emotional health than to tear it down? Are we going to judge by the extent to which it disturbs the teacher, by the extent to which the child conforms or refuses to conform to the imposed regime of the school?

How well do teachers recognize problems of children? The school setup has been such that a premium was placed on quiet and order; on the child's passively following the orders of those in charge, and docilely learning that which was presented for his consumption. Behavior that

hindered any of these processes lowered the rating of those in authority as disciplinarians and "teachers," and hence in their eyes immediately became serious problems. This introduction may throw some light on the results of one of the most illuminating and interesting series of studies in this field.

In 1926 Wickman had teachers list all the kinds of behavior problems they had encountered in their teaching careers. Many interesting side-lights were thus obtained. By studying each teacher's list of problems separately, it is usually fairly easy to tell the type of discipline carried on in each room. With one teacher, 90 per cent of the items on her list were of the general type and seriousness of these: "not putting pens down when told in writing class," "standing on wrong side of seat when ready to answer," "disorderly lines when passing."

When the teachers reported the incidence of various problems, some other variations were notable.

> Disorderliness in the classroom was reported by two teachers to occur in 100 per cent of their pupils, while seven other teachers observed it in less than 15 per cent of their pupils. One teacher found 92 per cent of her pupils dishonest, while two declared they had observed no instances of untruthfulness in any of their children. Three teachers reported wilful disobedience of over one-third of their pupils, while nine teachers had never observed it in a single child.[16]

When the total combined lists made by all the teachers were studied, there were still several interesting points. With very few exceptions the problems represented disturbances. Most of the items listed the undesirable things children do, not what they fail to do. There were scarcely any items indicating social and emotional maladjustment if it did not interfere with school routine. Less than one-fifth of the teachers included such personal problems.

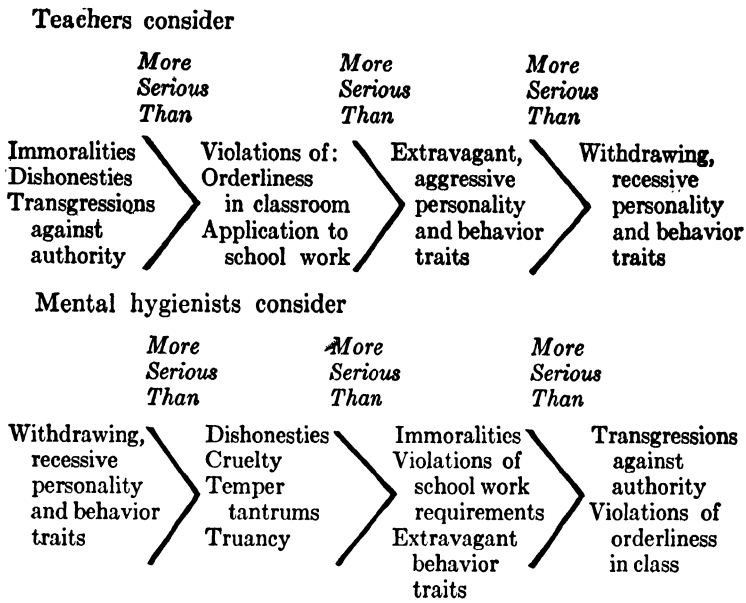
How do teachers' and mental hygienists' attitudes compare? The combined list obtained from the teachers contained some fifty items. These Wickman asked teachers to rate quickly in order of seriousness of the problem. His next step was to ask some thirty mental hygienists to rate the same list, giving their "professional evaluation of the seriousness or importance of these behavior traits as they may affect the future welfare of the child who shows such "traits." Thus, he had a most valuable comparison of the emotional reaction of the teacher to certain types of behavior in the classroom and the best professional advice as to which behavior was really likely to have serious effects. The results are not unexpected but none the less discouraging.

Among others Ellis and Miller [17] repeated Wickman's study of teachers' attitudes in Denver with some variation. The principal contribution of

[16] E. K. Wickman, *Children's Behavior and Teachers' Attitudes* (New York, Commonwealth Fund, 1929), p. 48.

[17] D. B. Ellis and L. W. Miller, "Teachers' Attitudes and Child Behavior Problems," *Journal of Educational Psychology*, Vol. 27, October, 1936, pp. 501-511.

this study is the fact that when given time to think seriously about the question, teachers recognize certain traits that are likely to handicap a child in his future development and adjustments as an adult which they do not spontaneously recognize as serious problems. Further, that even with considered judgment they are far from the mental hygienist's point of view.



These results take on importance when we realize that most classroom situations are handled on the basis of the teacher's immediate and often emotional reaction. Here we can see the great importance of the teacher's acquiring the mental-hygienist point of view, not for purposes of examinations in a course, but as a working part of her everyday contacts with pupils.

What do successive studies show? Wickman's study has been attacked on various bases and many have tried to discredit it, mainly perhaps because they did not like what its results revealed. Each succeeding research worker has hoped to find more acceptable results. The general trend of the studies [18] confirms the major findings only too well. There is a tendency, however, for teachers to gradually come closer to the mental hygienist point of view, which is encouraging.

In 1940-1941, Mitchell repeated Wickman's study with other teachers and twice as many mental hygienists. He found that the clinicians had also changed their point of view to a certain extent. However, basically

[18] "Mental and Physical Health," *Review of Educational Research*, Vol. 16, Dec. 1946 pp. 389-488.

there were few changes. The later study shows that they consider enuresis, nervousness, and destructiveness more serious than did the other group.

Another comparison. Out of the list of forty-nine traits the specialists rate the following ten items as most serious. The number in parenthesis is the rating the teachers gave that item.

1. Unsocialness (7)
2. Unhappiness (13)
3. Cruelty (4)
4. Fearfulness (9)
5. Stealing (2)
6. Nervousness (15)
7. Suspiciousness (29)
8. Enuresis (17)
9. Cowardliness (23)
10. Easily discouraged (14)

The ten items which the teachers rated most serious, with the mental hygienists' ratings in parenthesis, are:

1. Heterosexual activity (20)
2. Stealing (5)
3. Obscene notes (25)
4. Cruelty (3)
5. Untruthfulness (15)
6. Masturbation (35)
7. Unsocialness (1)
8. Destructiveness (22)
9. Fearfulness (4)
10. Cheating (16.5)

Still differing points of view. By studying these two lists and their rating we find that while there is considerable general agreement, there is still too much difference in point of view. The offenses against the teacher's authority and against the school situation loom up as more important to them than many of the pupil's own personal problems, and more important than they are to the mental hygienists. The teachers seem to be concerned from a moralistic standpoint rather than from the standpoint of emotional health. The cause is partially one of social pressure rather than a consideration of the child's own welfare. If teachers understand the causes behind such activities and the ways to proceed to correct them, these would automatically fall more nearly into the rank the mental hygienists accord them.

If the teachers were familiar with the medical and scientific conclusions as to the extent and relative unimportance of masturbation and heterosexual activity of the young child, they would have no cause to rate it thus among the most serious problems except on the old moralistic standards.[19] For it is quite agreed that the main harm that comes from such activity is that which results when adults attempt to stop it with lurid tales of the serious harm caused. Only occasionally should it be a cause for worry. When, because of serious personality maladjustment and insecurity, masturbation has developed into a major source of satisfaction and escape, then the attack should be on the general personality problem which was the cause, and not on the masturbation which was the result. This is true in large degree also of the other moral problems.

[19] Kinsey has shown that standards and practices vary markedly according to cultural levels. Differences between cultural levels of the teacher and the pupils may be a source of conflict and misunderstanding. See Kinsey, *Sexual Behavior of the Human Male.*

As for problems of school management such as cheating, truancy, and destroying of school materials, if the teachers but realized it, it is their behavior and not the pupil's that often needs attention. To the extent that the work is interesting and well adjusted to the needs and interests of the pupils, and the atmosphere is one of friendly coöperation, just to that extent do these problems disappear.

The real problem before the teachers is to adjust their own ideas and educate their own emotions to the point where they can see the child in their classroom, not as a student who must learn so much and not be a disturbance, but as a growing individual who reacts in certain ways, largely according to his past and present experience; one whose behavior may be modified, not by condemnation, but by a change in the environment and by arousing a sincere desire on his part to change.

Guides for recognizing pupil problems. The list used by Wickman and Mitchell is a help in evaluating pupil problems. Prichard and Ojemann [20] developed a rating scale for measuring insecurity. They listed the following behaviors:

Voluntary withdrawal from group
Non-acceptance by group
Bidding for attention of adult
Crying
Hyperactivity
Apprehensiveness

Ratings using this scale correlated .88 with records of trained observers, which indicates that it has considerable value.

Driscoll [21] gives some suggestions as to how to "screen" the misfits. She suggests that these are indicators of problems: the "work hard" attitude out of proportion to achievement and normal satisfaction, frequent illnesses, marked discrepancy between ability and achievement. She feels that "In her daily contacts with children the classroom teacher is the primary agent in fostering or handicapping normal emotional adjustment."

Alsop [22] lists ten traits of deviation which have been selected arbitrarily as probably being the easiest and most significant for a busy teacher to use. If any of these children listed below are identified in a classroom, something constructive should be done right away. In many of these cases a physical examination should be the first step. In light of the results of this, further plans can be made.

1. the noisy, overexcitable, pugnacious child.
2. the angel child who never makes any trouble.

[20] Elinor Prichard and Ralph H. Ojemann, "An Approach to the Measurement of Insecurity," *Journal of Experimental Education*, Vol. 10, December, 1941, pp. 114-118.

[21] Gertrude P. Driscoll, "Mental Health of Children—Whose Responsibility?" *Teachers College Record*, Vol. 46, May, 1945, pp. 501-507.

[22] Gulielma Alsop, "How to Recognize Psychoneurotic Pupils," *Clearing House*, Vol. 20, January, 1946, pp. 269-273.

3. the sleepy child who puts his head down on his desk and falls asleep.
4. the liar.
5. the thief.
6. the sullen child.
7. the child with obvious neurotic traits, such as: biting fingernails, grimacing, eyetwitching, mouth activity, excretory activity, crying, giggling, sniffling, throat clearing, fidgeting, making contortions.
8. the moody, variable child who is now gay and now depressed.
9. the cruel and malicious child.
10. the cowardly child.

Criteria for the study of mental health problems were developed for use in Columbus, Ohio.[23] Children in grades four, five, and six were rated on nine scores and were considered serious problems if they received an adverse rating in four or more of these. They were considered mild problems if they received any adverse ratings. In the primary grades some of the ratings were not applicable and observation was added. So here three adverse ratings were considered as indicating serious problems. Case studies of some of the children thus pointed out bore out the effectiveness of this technique.

These are the criteria used:

1. An age problem if the child's chronological age differed from the median of the group by more than a year.
2. An ability problem if the child's mental age was more than one year below or two years above the median.
3. An academic problem if his reading level was more than one year below or two years above the median.
4. A reading disability if his reading is more than a year below his mental age.
5. A school failure if he is repeating the grade.
6. A truant if he has been a truant during the current term.
7. A behavior or personality problem from the teacher's standpoint if he has a score of 150 or more in the Behavior scale (The Haggerty-Olson-Wickman Behavior rating scale was used with added items on withdrawing type of behavior, with all items weighted).
8. Maladjusted from his own standpoint if he has a score of more than 40 on the Personal Index or less than 96 on the California Personality Test. (The Personal Index is one by Loofbourows and Keys, designed for the Junior High School but usable in sixth grade. It was considered most reliable for selecting discipline problems and delinquents.)
9. Maladjusted according to his companions if one-seventh or more of the class wrote in his name in one or more of the significant items of the Guess Who Game.
10. (Used in primary only) Maladjusted according to observer if rated as showing moderately serious or serious maladjustment.

Children in three elementary schools in Columbus were rated on these criteria. One of the schools was in a very good neighborhood, one in a

[23] Carl R. Rogers, "The Criteria Used in a Study of Mental Health Problems," *Educational Research Bulletin*, Vol. 21, February, 1942, pp. 29-40.

very poor, and one in a good average district. Results were most interesting.

1 child out of 3 was regarded as a problem by the teacher.
1 child out of 4 was regarded as an intellectual misfit in his grade.
1 child out of 4 had a serious reading deficiency.
1 child out of 6 was maladjusted according to the personality test.
1 child out of 20 was repeating his grade.
12% of the 1524 children studied were serious problems.
30% more showed evidence of being poorly adjusted.

One interesting comparison shows the percentage of relatively well-adjusted children by grades.

Grade 1—71%; Grade 2—70%; Grade 4—67%; Grade 5—41%; Grade 6—49%.

One definite conclusion is that some schools are not diminishing children's problems. Quite the contrary seems to be the case.

The "good neighborhood" children had almost no serious problems when they entered school, but by the sixth grade they had almost as many as the school in the poor neighborhood, which started out with a high percentage. In fact, the serious problems did diminish in the poor neighborhood school but not as fast as they appeared in the good neighborhood school. And this conclusion was drawn: There seems to be evidence from the study that educational policies may serve to create and increase mental health problems or to prevent and decrease them.

Murphy [24] probably has the best answer of all to the question "Who are the children who need psychiatric guidance?" when she says practically all, at one time or another. She believes that a minimum of 10% of the children need psychiatric aid to pull through to satisfactory work in school and emotional adjustment. She feels that this estimate is low, for five percent of the entire population spend some time in a mental hospital, which might have been prevented with proper care in childhood. In addition, a large proportion of physical illnesses, including gastro-intestinal trouble, gastric ulcers, and circulatory trouble like high blood pressure, have emotional factors as primary or secondary causes. Some delinquency and crime, some divorces also should be included at the adult level as the end result of stresses that could have been relieved in childhood.

The children she would be concerned about are the too good, the too bad, those not so happy as they could be, those who are making their parents unhappy, and those not developing as well as they should. One little girl in nursery school seemed very immature and backward. She was not acquiring any of the physical skills or social abilities that the rest of the group were. She was just not developing normally. Her IQ was 65. She was given psychiatric help, and over a period of years her IQ rose to

[24] Lois Barclay Murphy, "Who Are the Children Who Need Psychiatric Guidance?" *Journal of Home Economics*, Vol. 39, January, 1917, pp. 27-29.

140. "We do not say that all instances of severely retarded children in normal families are due to emotional stress, but we have seen enough of such instances to be sure that psychiatric help can often succeed with such children." [25]

School practice which has helped teachers. If many teachers are not now able to evaluate children's behavior in terms of its seriousness, what are some means of helping them? One study [26] shows that a mental hygiene course is much more effective than one in educational guidance.

The great majority of those who have studied the problem believe that direct, personal experience in studying children is by far the most helpful. Many teachers feel that they don't know how to begin, that they wouldn't get enough out of it, or that they haven't enough time. This is all understandable, but the recorded experience of those who have had the desire and the courage to try tell quite a different story. Here is the experience of some groups.

In a Wisconsin school,[27] teachers gave a personality test to their pupils. They studied the results and tried to work with the children whose tests showed they had problems. With no other help than the test itself and their own ideas, they made definite measurable gains in the children's emotional adjustment during that school year.

In another situation [28] the teacher in one room was given information about each child's personal problems and conflicts. In another comparable room the teacher was given no special information. At the end of the year they felt there was a great difference in the teacher's attitudes toward the children. There was also a difference in the children's attitudes and their learnings. Understanding the problems of the children had enabled the teacher to approach them more helpfully. This had helped solve some of the children's problems, which improved their attitudes. This in turn had enabled them to get more out of their school experience and improved their achievement.

In Norfolk, Virginia,[29] teachers worked in groups. They gathered anecdotal records, discussed them in group meetings and interpreted them by various forms of analysis. There were consultants available for work with groups or with individuals. They wrote up some of their case studies and the results of their study. They felt they had a clearer understanding of

[25] *Ibid.*, p. 28.

[26] Salvator G. DiMichael, "Comparative Changes in Teacher's Attitudes Resulting from Courses in Mental Hygiene and Educational Guidance," *Journal of Educational Research*, Vol. 37, May, 1944, pp. 656-669.

[27] Charles D. Flory, Elizabeth Alden, and Madeline Simmons, "Classroom Teachers Improve the Personality Adjustment of Their Pupils," *Journal of Educational Research*, Vol. 38, September, 1944, pp. 1-8.

[28] Ralph H. Ojemann and Frances R. Wilkinson, "The Effect on Pupil Growth of an Increase in Teacher's Understanding of Pupil Behavior," *Journal of Experimental Education*, Vol. 8, December, 1939, pp. 143-147.

[29] Norfolk City Teachers, *Some Studies of Children*, (Norfolk, Virginia, Norfolk City Schools) 1946.

pupils and their problems, that they were more conscious that all behavior is caused, more sensitive to the close relationship of the total experiences of the child, that they had a greater challenge to help the child solve his problems.

In Clinch County, Georgia, the curriculum counselor, initiated a child study plan.[30] She feels that it is usable with modifications in many situations. Each teacher in the county chose two children in her room to study in any way she wished. The most common procedure used was to (1) get better acquainted with the parents and home background, (2) give reading tests and mental tests, (3) have personal conferences with the child to find out about his feelings and interests, (4) see that he has a health examination, (5) keep a folder for the child into which she puts any and all pertinent information about him.

Monthly meetings were held at which this information was discussed and teachers helped with their diagnosis. Plans were made for helping the child solve his problem. Some of the better plans were:

(1) The work was planned so that the children could contribute in light of their abilities rather than the so-called grade standards. The best teachers made such assignments as would challenge superior students and at the same time made it possible for the less able to succeed.

(2) The best teachers placed emphasis on evaluation of results in light of changes in the lives of the children rather than in terms of particular memory tests on prescribed facts in a certain book.

(3) They corrected health problems by coöperating with the home and supplementing that with assistance from the school where desirable.

(4) Probably most essential though often least amenable to change is the teacher's personality. Many were uncertain and insecure in their handling of children which brought about or increased the children's problems. However, a study of the human material with which they worked, helped make teaching more interesting, satisfying, and successful for many of the teachers. This aided the teacher's own security so that she could do a still better job.

In evaluating the results of the first year's work it was felt that the teachers had grown in their ability to teach all children. They put less emphasis on subject matter as an end and took the point of view that a better life for each child was more important.

One group of supervisors and teachers took advantage of the fact that Dr. Prescott was conducting a study in a near-by area. The Fifth District of Louisiana[31] had arrived at the point where the major interest of the group was child development. The teachers decided each to study one child and keep records which would be discussed at their bi-monthly

[30] Jane Franseth and S. C. Patterson, "Teacher Growth Through Individual Child Study," *Curriculum Journal*, Vol. 14, March, 1943, pp. 124-127.

[31] The study was reported to the authors by a letter from Maggie Haws, Supervisor Morehouse Parish Schools, Bostrop, Louisiana.

meetings. Dr. Prescott or a member of his staff met with the supervisory group for two days at least three times during the year. Then the supervisors worked with the teachers. This plan is different from many but has been very effective. Workshops have been organized and study is progressing very well. Since the work has been kept on a voluntary basis, teachers are interested and enjoy the meetings. The problem on which they are now working is to increase the degree to which the changed attitudes of the teacher affect classroom practice. This needs to be planned for and studied as well as any other part of the program.

For teachers who are interested in studying children, Driscoll has prepared a most helpful booklet.[32] A teacher could work through it by herself with her own class and gain much insight. A group of teachers could work together using this and clarifying their ideas and their problems through group discussion. It discusses opportunities for studying children's behavior in the classroom under various conditions, on the playground, in out-of-school activities, in parent-teacher contacts. It offers concrete suggestions as to how to study children's behavior, giving clues for discovering developmental age in its physical, intellectual, social, and emotional phases; for studying personal-social relations in the classroom, and the rôle of the teacher. Finally, it gives help in using one's knowledge of children's behavior. It deals with many concrete school situations and gives a number of illustrative thumb-nail sketches.

Perhaps the most useful book in the field is *Helping Teachers Understand Children.*[33] It is as easy to read and as interesting as it is helpful, for it is literally full of short sketches of real children with comments. It is the report of an American Council on Education Study which was headed by Daniel Prescott. In one school system teachers had been keeping cumulative records including anecdotes on the "social attitude and behavior" of the child. They felt that they were a lot of work and that they did not get much from them. A meeting was called to discuss them. A typical record was selected and mimeographed. The consultant had been asked to analyze, interpret, and criticize this record for the benefit of the group. Excerpts are given below from this record and the consultant's comments.

Teachers' Notes	*Consultant's Comment*
GRADE II	
Ernest is a most peculiar child; eyes and ears bad; gets along poorly with other children.	How? What does he do that shows this? List specific cases—too general to mean anything.
Not capable of taking any responsibility.	Too general; what responsibilities were tried with him? Where did he fail?

[32] Gertrude Driscoll, *How to Study the Behavior of Children* (New York, Bureau of Publications, Teachers College, Columbia University, 1941).

[33] (Washington, D. C., American Council on Education), 1945, 468 pp.

Has many fights with other children.	About what were he and the others fighting?
Very slow in everything he does.	This is an indication; it tells something about the personality that is very important to know.
Not capable of doing very much.	Be more specific; what *did* he do?

GRADE III

Ernest shows a very thoughtful, considerate attitude at times.	How? On what occasions? This shows he is not *all* bad. This, in his third year, is the first remark to show that he tries to do certain things. *What* things is not evident in the report.

GRADE IV

Does mean little things; tore up candles other children made.	This is being a little more specific but still not enough. Was he envious because they had made good candles and he could not? Perhaps he liked his teacher, and she did not meet his need for affection. Perhaps he was envious because the good candles made by other children were praised and his was not mentioned. Perhaps there was some feeling of getting even with boys who had teased him on other occasions. Perhaps something had happened at home which caused him to do this.

GRADE V

Cannot stay at anything long.	Cannot stay at what things long? There are bound to be some things on which he will concentrate. Is it the things the teacher requires of him which he will not do? Perhaps he is not interested. Specify those things which he will not conclude.
Hunts up trouble and often finds it.	This tells a bit more but not enough. List what trouble he has started. This may be a vicious circle. He is teased, he picks on children. Again they tease and pick back.
Had to be punished and it helped him. Tried harder to behave.	How did the punishment help him? Teacher should try to answer that. Did it help Ernest to conform to the wishes of the teacher, or did it help him to have a better attitude toward behavior and against fights? Teacher may succeed in changing the outward appearances but not the inner thoughts and feelings. The trouble may be smouldering and at home or after school hours,

	when away from the teacher, Ernest may continue his fights. There may be a place for punishment, but it needs to be weighed carefully. Group displeasure is one punishment if it is honest—no artificial attitude just because "teacher expects us to take that attitude toward it." Later pupils may talk sympathetically to Ernest and then no good is done.
Has questionable mentality.	Teacher should not dare to make such a statement. Instead, give an intelligence test and list his IQ, also level of work and indications of reasoning-ability or lack of it. Draw no generalizations.

The teachers in the study group were surprised by this analysis. They were struck by the fact that they had gone on year after year putting down judgments about this child with so little supporting evidence. They could see that they had described how they themselves had reacted to the boy more often than how he had really behaved. They noticed that the record seldom provided information that would indicate the child's own motives and attitudes and that it did not supply a convincing picture of how the school had helped him in the process of growing up. The teachers then began to examine the cumulative records of other children; they looked up what they individually had written about particular boys and girls. In the end they came to the conclusion that most of the statements they had made were empty and worthless generalizations.[34]

As a result of this discussion the teachers decided to keep records on two children in their room. One of the children was to be normal, well-adjusted, and without acute problems, so that they might get a picture of what an average child faces in the course of growing up. The second child studied could have something of a problem if the teacher wished. At first they would write two or three brief anecdotes a week. They gathered whatever other information was available.

At each meeting they read and discussed their anecdotal records. They began to realize several things: (1) that these records told how the teachers reacted to the children rather than what the children actually did, (2) that they were in the habit of thinking of children's personalities as being characterized by a single prominent trait or way of behavior, (3) that they were very apt to offer an immediate explanation of behavior without marshalling any considerable body of facts, and without figuring out what psychological principles are suggested by the data as providing valid hypotheses on which to work with that individual.

After this experience they began to see that the most helpful anecdote was one that told exactly what the child did or said, that described concretely the situation in which the action or comment occurred, and that told clearly what other persons also did or said. Teachers found it very

[34] *Ibid.*, pp. 22-27.

difficult at first to break their long-time habits of expressing their own reaction and spur-of-the-moment evaluating or characterizing a child in terms of a single personality trait. Gradually they began to think in more objective terms and save attempts at interpretation until more material had been assembled on which to base it.

Gradually too the teachers learned to recognize significant incidents to record instead of trying to base their selection on various factors. They planned home visits to each child with the purpose of making a friend of the family and getting to know and thus to better understand each child.

And so the study went on for three years. The teachers advanced with their groups so they could learn to know their pupils better instead of starting all over with a new group. They continued to meet and discuss and learn to interpret, and the results are rather amazing. None of these teachers had more than the usual amount of training. Yet the progress they made and the proficiency they achieved were heartening, to say the least.

Teachers evaluate their child-study work. Perhaps the most significant and encouraging evaluation of this study is the chapter in which the teachers evaluate the study. They were asked to appraise the study program in terms of its worth to them. Only a very few excerpts may be given here, but they illustrate the type of things the teachers were saying and the ways in which they reacted. One teacher wrote this after only one year of study:

> By being a member of the child growth and development group I have grown in understanding children, and because of this I believe I am doing a better job in the classroom, and I know I am happier while doing my job. I'd have got much from the study if I'd got nothing more than this one fact—that all behavior is caused. As self-evident as it is to me now, I'd never before consciously thought that back of all behavior, both pleasant and unpleasant, there lie causes, and from these causes we can solve or modify particular behavior.
>
> This technique of looking for causes has given me much more patience, maybe because I rather get the feeling of a doctor trying to diagnose a patient in order to prescribe the proper medicine.[35]

This was written by a teacher at the end of the three year study program:

> Not only in Jack's case but in working with the others, I have tried to give each child many opportunities to express his thoughts and feelings through writing, rhythms, art, and dramatic plays. I have learned that healthy release of fear or excess energy can be gained through such activities. A child who has a certain fear may get release of this fear through painting pictures or dramatic play.
>
> This year I have recognized my opportunities for helping children to become better adjusted socially on the playground. I see now why it is important that children learn to play games well. They hate exclusions in any type of activity, but especially in games. After learning this fact in my child study, I observed

[35] *Ibid.*, pp. 365-366.

my group more carefully at play. I noticed that Jeff and Bob seldom played ball with the boys. I found out that the others did not want them on their sides because they always made an out. I talked with the boys. Why couldn't we teach Jeff and Bob to play better? Jack, the leader in all games, took them under his wing. Now Jeff and Bob join the others even though they aren't very good players.

I have made changes in my techniques of handling children. This one thought has helped me tremendously in handling behavior problems: if you want a child to stop doing something, furnish him with something better to do. I have applied the above technique to the group also. A change to a story, a song, or a game has relieved boredom, restlessness, and confusion.[36]

The following excerpts give a small indication of the changes in attitudes of teachers and principals and their handling of behavior problems:

Keeping the journals has strengthened my belief that I should never fight symptoms but always study causes of children's behavior.

I am beginning to see more and more the importance of studying a personality from many different angles in order to accomplish the greatest good for the child. To accomplish this a great deal more must be considered than just the present tense of the case. One must go back into the child's history from infancy, and if possible, even the prenatal conditions affecting his birth.

Many other things should also be considered when dealing with this child, which in other days would not have occurred to me as being important, but which now have taken on weight and meaning as bearing on the case. His home, family, environment, health, preschool history, out-of-school activities, economic and social status in the community, church affiliation, past record in school, data from other teachers, best friends, classroom relationships, contacts through various experiences such as radio, reading, movies, newspapers, etc.—all of these and many more should enter as far as possible into the consideration of the child's whole personality. Just so far as we, as teachers, can find time and take time to look into these things, just so far will we progress in the thorough understanding of these youthful individuals committed to our care.

In some of our reports and in our reading I found that social classes and standards more deeply affect people than I knew. I remember we discussed the fact that we as teachers of one class, in working with some children of other classes, were guilty of trying to make sudden changes in standards and customs of living—customs that fit our own patterns.

This teacher says that a few years ago she would have made herself and the child miserable by trying to teach him the required amount of work in skills that she felt every first-grade child should know. Now she realizes that making choices, adjusting to the group, and facing situations are growth also. For learning takes place when we act on our own thinking. Teacher is planning to promote him, as she feels that he will read readily when he reaches that stage of maturity and feels the need for reading.

The homes of the community have been visited more often this year as the teachers have tried to learn more of the background of the children. These contacts with the parents have established a more harmonious relationship between parents and teachers, thereby reducing many "discipline" problems that have arisen in other years. At any rate complaints from parents have been almost nil this year.

In short, I have been better able to relax, to enjoy personalities, and to be

[36] *Ibid.*, pp. 368-369.

happier in my work. It was wonderful to have our attention shifted from teaching techniques to child study.

This year has been our best and easiest as far as problems between children and teachers, and children and school are concerned. It would be overestimating to say all this has been due to our child study, because I feel that there are two other factors which have played a very definite part in this. But I do feel that we have developed a much deeper and stronger understanding of children and that what they are feeling and thinking may be deeper than we as teachers are conscious of. This is shown daily by (1) more loyalty from the children, (2) more respect from the children, (3) more pride in trying to do the right things, (4) more tolerance on the part of children toward each other and the teachers, (5) more unity and closeness of teachers and children. Dealing with children as individuals and considering their wishes and needs have brought about these attitudes. Since the teachers have attained such attitudes a great number of problems just did not present themselves.[37]

V. TECHNIQUES WHICH HELP IN CHILD STUDY

The use of tests. The development of techniques with which to study children has progressed remarkably. At first a comparison of a child's intelligence and his achievement was considered to be a great forward step in the scientific study of the child. Then personality tests and rating scales of various types and kinds were constructed, and an era followed in which they were used extensively. The best of these [38] are still used, for they give a measure of something we can get in no other way. However, today we are supplementing them in almost every case with other types of data.

One interesting test is the Self-Portrait-N.[39] The test is a series of groups of four statements. In each group the child marks the one which is most like him and the one least like him. Each one indicates the presence or the fulfillment of one of eight basic emotional needs. If any child shows more than a certain number of instances of an unfulfilled need it probably indicates a problem in that area. The needs included are to belong, to achieve, to have feelings of economic security, to be free from fear, to love and be loved, to be free from intense feelings of guilt, to share in decision making, and to understand the world. The use of the test results showed that achievement can be greatly facilitated by acting upon the results as if each problem did represent a block to learning. This confirms the idea that these emotional needs are frustrated.

Anecdotal records. Anecdotal records were introduced to supplement objective tests and have been used with a variety of success. Such a record can be no better than the insight and objectivity of the person who keeps it. One study [40] of their use, suggested the cardinal principles of elemen-

[37] *Ibid.*, pp. 375-376, 378, 383, 391, 392.

[38] For lists of these see Chapter 15.

[39] Louis Raths, "A Test of Emotional Needs," *Educational Research Bulletin,* Vol. 26, January, 1947, pp. 14-16 ff.

[40] Hamalainen, Arthur E., "An Appraisal of Anecdotal Records," (A Summary of Contributions to Education No. 891), *Teachers College Record,* Vol. 45, October, 1944, pp. 351-352.

tary education as an outline of behavior about which incidents were to be recorded. This study found anecdotal records to have guidance opportunities. They seemed to be complimentary to a personality sketch of pupils and interest inventories, and all of them have their place in the classroom. The author concludes that they are a fruitful means of focusing teacher's attention more sharply on the needs of individual children. They are used in most of the child study groups which have been discussed in this chapter.

Projective techniques. A relatively new method for studying children is the new projective techniques. The Rorschach test is the best known and most used. It is still in its infancy and is criticized for lack of objectivity, reliance on personal norms, subjective evaluation, and validation.[41] All this is a result of its still being in its infancy as a measuring device. A great deal more work needs to be done with the technique before it can come into common use. However, it gives promise of being one of the most helpful and illuminating devices to have been invented for some time. Already it has thrown new light on several problems.

There are many variations and simplifications of the projective technique. In one case the Interest Questionnaire for Industrial Arts was given and from it analyses made of personality problems, using it as a projection technique.[42]

With smaller children particularly, the doll-projection technique is used. They find that the way a child plays with a doll can give insight into the child's other thoughts and feelings. Children express in their play with the doll feelings that they can not or dare not express otherwise.

Fantasy can be helpful in the same way. If children are encouraged to make up stories which are imaginative and are accepted as such, often very meaningful material results. One of course must use care in interpreting it and care in using the information thus obtained. One piece of research using the play-interview technique with kindergarten and fourth-grade children concluded that "the amount and quality of phantasy material given spontaneously by the children of both age groups indicate that the play interview is an effective technique for uncovering attitudes and interests of young children."[43]

Sociometry. Another new and more immediately useful technique for studying children is sociometry. That is the study of the interrelationships among the children in a class, what they think of each other, and how they feel about their classmates. This is a method any teacher may use with her group and gain a great deal of insight.

[41] Marguerite R. Hertz, Albert Ellis, and Percival M. Symonds, "Rorschach Methods and Other Projective Techniques," *Review of Educational Research,* Vol. 17, February, 1947, pp. 78-100.

[42] C. H. Waller, "Adjustment Through the Arts," *Industrial Arts and Vocational Education,* Vol. 30, December, 1941, pp. 424-426.

[43] Ruth W. Howard, "Fantasy and the Play Interview," *Character and Personality,* Vol. 13, December, 1944, p. 165.

As Prescott [44] says, our basic educational policy must be determined by understanding all phases of a child, and one of the most important is the individual in relation to other human beings. In every group there come to be interpersonal attractions and repulsions (dynamic and emotional). There are children on the fringe and isolates. We see prestige, competition, aggression, and arguments arise from this. Hierarchies of class and caste exist within our culture. The child is conditioned by these hierarchies and they influence his behavior, beliefs, attitudes, and values. In turn this influences others' reactions to him.

We can not understand a child and his behavior unless we can know, to some extent at least, what reactions and interactions are affecting him.

Social climate. This opens up the question of his social adjustment and his place in his social group. Formerly, few teachers considered adjustment to the group even within their province. More and more they are realizing that not only is it their concern, but further, they can not adequately understand or help a child until they do have a fairly good idea of these social relationships.

Teachers were apt to say that at least the school environment is the same for all children even if their outside environment is different. Many still do not realize how absolutely false this statement is. Is every child treated the same by the teacher? Probably not. Is every child treated the same by each other member of the class? Of course not. Then consider the social climate in which a child lives at school who is nagged or scolded or rejected by his teacher, and avoided or rejected by his classmates. Compare this with the social climate of the beloved, successful child, the apple of the teacher's eye, and the leader of a group. Even if they were equal in ability and background, they would have far from equal chances of success.

Observational technique. Murphy studied sympathy at the nursery-school level (See Figure 1), believing it was "intimately connected with all the other responses of a friendly and constructive nature that are the foundation of a coöperative society." [45] Records were kept for each child of his responses of sympathy to other children when they fell down or otherwise hurt themselves. This figure from her study shows the tremendous difference between two boys close to the same age and developmental level.

Julius received 24 expressions of sympathy (and one unsympathetic response) to Alex's two; Julius made 77 sympathetic responses and 22 unsympathetic to Alex's four and one. Certainly the world is quite a different place for these two boys. Besides this, out of all 99 responses

[44] Daniel A. Prescott, "Recent Progress in the Understanding of Pupil Growth and Development and the Factors that Influence Learning," *Supplementary Educational Monograph,* Vol. 52 (Chicago, University of Chicago Press, 1941), p. 39.

[45] Lois B. Murphy, *Social Behavior and Child Personality,* (New York, Columbia University Press, 1937), p. 3.

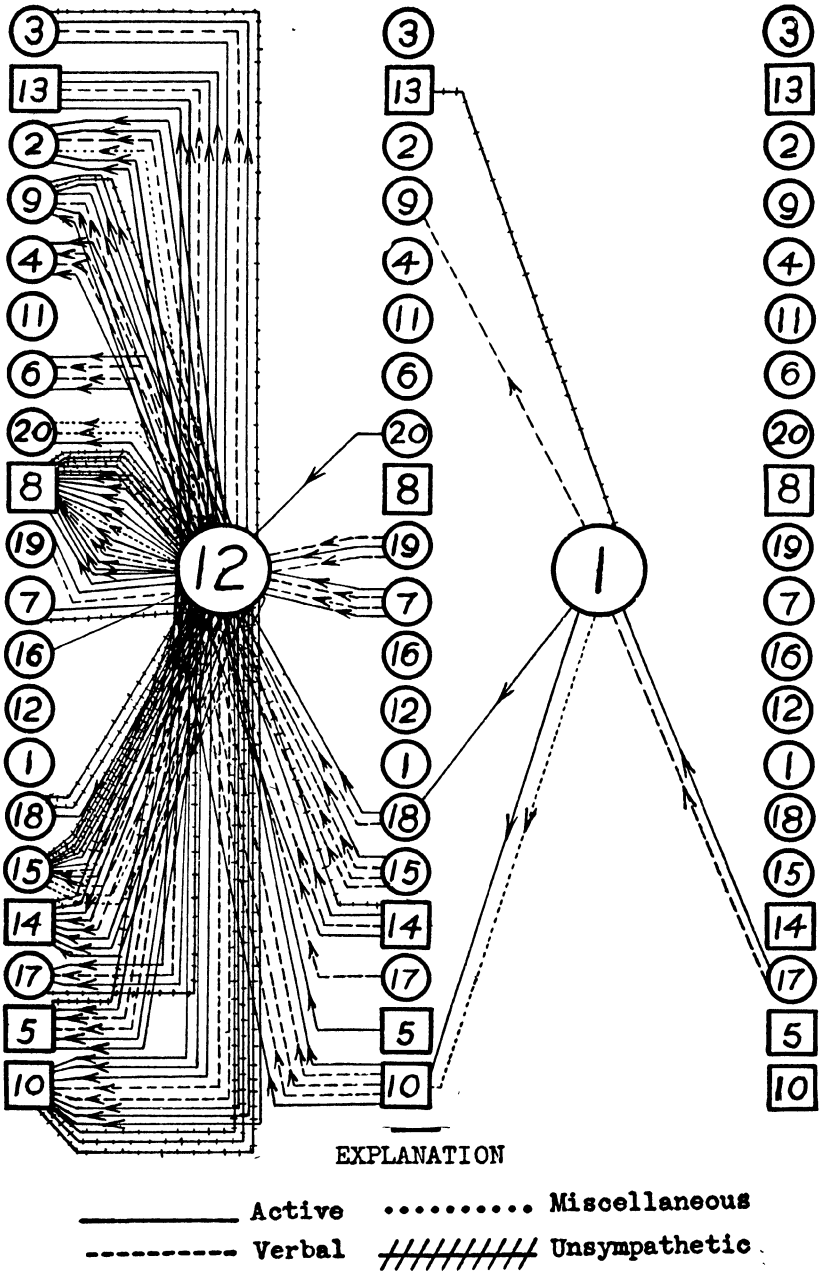


FIG. 1. DIAGRAM OF INDIVIDUAL RÔLES IN THE GROUP: JULIUS (12), 49 MONTHS, AND ALEX (1), 51 MONTHS.

Although close to the same age and developmental level, this markedly extroverted boy and extremely introverted boy have strongly contrasting rôles in the group. (Girls are numbered in squares, boys in circles, from the youngest at the top to the oldest at the bottom.) After Murphy, *Social Behavior and Child Personality*.

which Julius made, not even one was directed at Alex. In fact he was one of only three to whom Julius did not react. The two contacts he did receive were from the same child and these were not accepted to the extent that he returned them, although there was opportunity, for Julius reacted to him four times. This would make it even more obvious that he had little or no part in this group, that he just did not belong, and was not accepted. This observational technique then is one means of measuring the social relationship of children.

The sociogram. Another means of getting some of this information is with the sociogram. The procedure is like this. A teacher will ask her class to put down the name of the child they would like to sit next to, the one they can work best with, the one they would like as a partner on an excursion, or their best friend. Any one or more of these may be asked for and the child may be asked to name one, two, or three in each category. Let it here be said that this questioning must be done seriously. If we ask which person the child would like to work with, we must follow out his desires as nearly as possible in organizing work-groups. It is probably better to limit it to choice for one purpose at a time, or not more than two at the most.

Next make a list of the class, boys and girls separately, with space for two columns of tabulation, times chosen and times choosing. Then tally each choice once for the person doing the choosing and once for the one chosen. This tally in itself will be illuminating.

Now you are ready for your diagram. Probably there was little choosing between boys and girls. So the boys will be placed on one half of the diagram and the girls on the other. Or a circle may be used for one and perhaps a square or triangle for the other. Each child's initials are put in the proper figure. Place circles and squares for the children receiving most choices toward the center of their half of the diagram. Place those not chosen quite so often next, arranging it so that lines indicating choice can be readily added without too many of them being too long or crossing over a figure. Isolates, those with few or no choices, would be placed around the edge. When one child chooses another a line is drawn between them with an arrow indicating the direction of choice. Mutual choice can be indicated by double arrows, or double lines. Now you are ready to study your picture. As one of the teachers in Prescott's study said, "Some of this I knew already, but more of it surprised me greatly."

An illustration. The sociogram on Figure 2[46] illustrates many types of relationships and children's reactions. The most obvious thing is the almost total separation of sexes. Grade four is probably the time when this is most extreme. First grade shows almost a third of the choices to be intersexual. From here it diminishes and begins to reappear in the late elementary and high school. This of course is an expression of the latency period in sexual development.

[46] J. L. Moreno, *Who Shall Survive* (New York, Beacon House, 1934, p. 38).

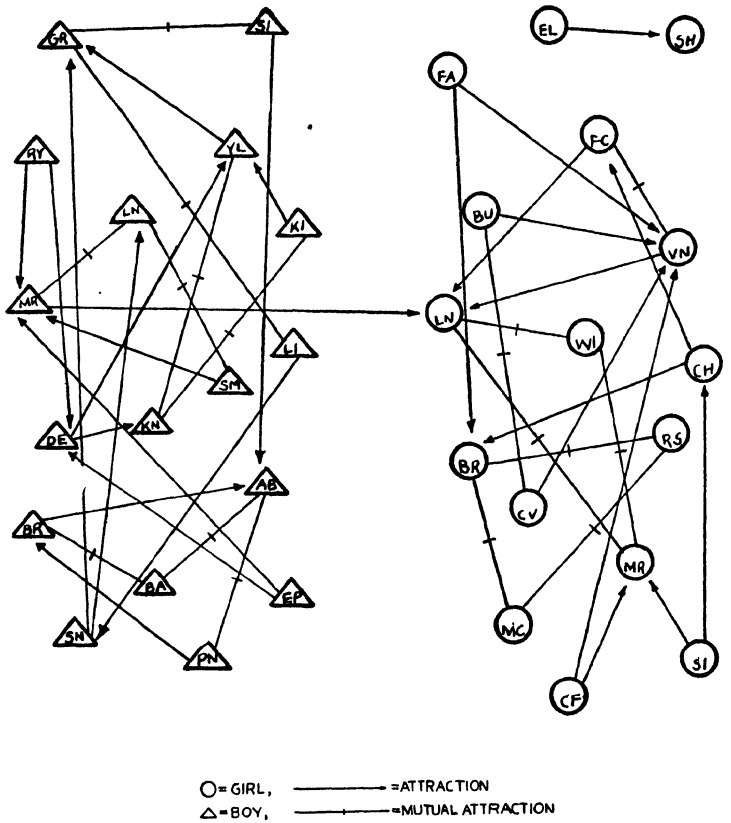


FIG. 2. CLASS STRUCTURE, FOURTH GRADE

Class of 17 boys and 16 girls. Unchosen, 6; pairs, 47; stars, 2; chains, 0; triangles, 2; intersexual attractions, 1. After Moreno, *Who Shall Survive?*, p. 38.

The diagram was based on the results of asking the children to name the two people whom they wanted to sit by them. This question, by the way, is one which seems to give the best indication of strong mutual relationship. Among the boys there are 9 mutual pairs involving 13 of the 17 boys. There are only two boys unchosen. Among the girls these 8 mutual pairs involve only 10 of the 16 girls. There are also two triangles, that is, three girls who mutually choose each other, and no one outside of their own group. In one of these triangles two of these girls are chosen by others, but in the other only one of them is. In this diagram this would have stood out more clearly if this triangle BR-RS-MC had been drawn with RS to the left of the other two so there would have been no unnecessary crossing of lines. We see that there are 4 girls unchosen. Besides, there is something else which we do not find at all among the boys and

that is girls naming only one or no friend as EL and SH did. Children who are not chosen are called "isolates."

At the opposite extreme we have the "stars," those chosen by many children. No boy was chosen by more than four but two girls were chosen by five each.

What do we know from this analysis? In this class there are many mutual friendships. The girls seem to have their own exclusive groups more than do the boys, who are more apt to form "chains" of friendship and include a greater proportion of their number (76% to 62% for the girls). There are no stars and fewer isolates among the boys. They all felt free at least to name two whom they would like to sit near. Two of the girls did not.

Let us look at the stars for a minute and see who chose them. VN was chosen by both members of a pair and by two isolates besides her mutual friend. Her other choice went to the other star who ignored her and chose the other two in her triangle. Is VN trying to join the group of which LN is the "star"? LN besides being chosen by her two friends was chosen by both members of the pair VN-FC and also was the recipient of the only boys' choice of a girl. Is then LN the stronger leader?

Now, what about the isolates? FA chose a "star" and a member of a closed triangle, and so did CF. Is this wishful thinking on the part of these girls? It doesn't seem very realistic. However, the choices were limited to two. It would help to know who the third choice would have been. SI chose a member of a triangle and one who was chosen only by her. EL chose only an isolate and one who chose no one at all. The teacher may be able to assist the friendship of CH and SI if other factors make that seem desirable. It may also be that EL and SH can form a pair, other things being favorable, which would make them both happier and help to develop social skills.

Conclusions? All the above analysis needs to be done, but no definite conclusions should be drawn until one checks all these findings with other things one knows and can find out about each child. None of these relationships means anything definite about the social adjustment of the children. That must be determined from understanding why the sociogram turned out the way it did. It does tell something of the social climate in which these children live and opens up all sorts of questions to be answered. In other words, this is just a fine beginning.

"Guess Who" technique. Another similar device for further studying the emotional and social climate of children is the "Guess Who" technique. It may also be called a reputation test or Identification Sheet. Such tests are published [47] or they may be made up by the teacher or the school. They are composed of paragraphs describing behavior, both desirable and undesirable. The children are asked which boys or girls in

[47] *Ohio Recognition Scale,* Printed and distributed by Ohio Scholarship Tests, State Department of Education, Columbus, Ohio.

the room each paragraph reminds them of. They may list several names or none under each. The test may range from nine to twenty items and their opposites; the younger the children the shorter should be the test. The following items give an idea of the type of behavior which may be included:

Here is someone who likes to talk a lot, always has something to say.

Here is someone who doesn't like to talk very much, is very quiet, even when nearly everyone else is talking.

Here is someone who is always ready to take a chance at things that are new and unusual, is never worried or frightened.

Here is someone who is always worried or scared, who won't take a chance when something unexpected or unusual happens.

Here is someone whom everybody likes; people are always glad to have him (or her) around.

Here is someone whom nobody seems to care much about; people do not notice when he (or she) is around.

Here is someone who can enjoy a joke and see the fun in it even when the joke is on himself (or herself).

Here is someone who can never appreciate a joke when it is on himself (or herself).[48]

The test may end up with the statement that here is someone who is the child's best friend.

How should the "Guess Who" test be given? First of all, this type of test should only be used in groups where the children thoroughly know each other. Otherwise one can not expect to get any meaningful results.

Second, and fully as important, rapport must be established. The children must have confidence in the sincerity and integrity of the person giving the test. They must know beyond the shadow of a doubt that the things they write will be kept confidential. If the teacher has always respected their confidences and never humiliated any of the group with personal comments she will have no trouble getting free responses.

The tests may be signed by the students or they may be done anonymously. On some occasions the instructions have included the suggestion to write in their own name or "myself" when the statement fitted them. In this case of course the tests should be signed.

How are these tests scored? One of the most useful ways to record the results of these tests is a chart. The names of the pupils, boys and girls separately, should be listed down the left-hand side of the page. The paired paragraphs should be listed by key words across the top. Each child's name filled in on the test is then tallied in its proper square. When the child names himself this should be tallied with an "s" rather than a tally mark. The chart should be made so that the whole record for each

[48] These are taken from a test reproduced in Stuart Stake, *The Social Analysis of the Classroom,* Unpublished leaflet, Division on Child Development and Teacher Personnel, Commission on Teacher Education, American Council on Education, Washington, D. C., January, 1940.

child can be studied at once. This is the only way to get a picture of the kind of social and emotional world in which the child lives.

How may these results be used? It is important to remember that this chart does not necessarily tell us what a particular child is like. It only tells what his classmates *think he is like.* It gives leads for further study and investigation. More importantly, it gives us a picture of the social climate to which this child is reacting.

If self-ratings were included it gives a very clear picture of how realistic or effective the child may be. If he rates himself as "happy," and whenever he is mentioned for this test by others it is to rate him as unhappy, then the child is doing a lot of wishful thinking, or he certainly does not know how to express his happiness adequately. Another possibility is that it may be a relative matter; he may be much happier this year than last and think he is happy by comparison. However if he lists himself as friendly and is marked unfriendly, certainly something is wrong.

An acceptance scale. An acceptance scale is similar to the identification sheet but has a somewhat different purpose. In the Ohio Acceptance Scale[49] the child indicates the degree of friendship he feels toward other members of his group from very close association to definite rejection. He does this by assigning a descriptive paragraph to each child in the room. When this is tallied it gives a fairly complete acceptance-rejection picture for each child. A great deal of caution should be observed however in giving this test. It should not be used unless a teacher feels that she can ask that the children not discuss any part of the test or their reactions to it outside and have her request honored. Also, it has been found to be better to have such a test given by an outside source. A teacher in whom children have confidence may explain that this person is doing a piece of research and needs certain information; that it is perfectly all right to answer the test completely and freely, for all information will be strictly confidential. And the teacher must see that it is kept so!

How valid and reliable are sociometric measures? Because of their very nature it is difficult to determine statistically the validity and reliability of sociometric measures. Those who have worked with them to any great extent feel that in general they are quite valid and reliable. One thing they are sure of, and that is that they give us insights and leads which we could obtain in no other way. Moreno and Jennings[50] have studied social structures as obtained for sociometric testing and have shown that these structures do differ significantly from chance relationships.

Tryon made a careful study of the reputation test. She found very few cases where a pupil was named for both positive and negative aspects of

[49] Of the Evaluation Division of the Bureau of Educational Research, Ohio State University.

[50] J. L. Moreno and H. H. Jennings, "Statistics of Social Configurations," *Sociometry,* Vol. 1, Jan.-April, 1938, pp. 342-374.

a trait. She also correlated scores given by half the class with those by the other half and found coefficients in the .80's and .90's.[51]

Some have questioned the test results because they do not agree with the previous judgment of the teacher. This is one of their greatest strengths. A teacher is so apt to judge the relationship of children by their relationships with her, and this certainly is not valid. Nothing found by means of these measures should be taken as the final answer, but it does pretty closely represent the way other children feel at the time.

Care must be used in checking validity for this very reason. One study[52] concluded that the sociogram built on the question "By whom would you like to sit?" was quite unreliable. The author had made such a diagram and then arranged seating according to the children's wishes. Six weeks later he repeated his question and received a number of different answers. About 42% of the children changed either first or second choices, 20% changed both choices but mutual or reciprocated choices had relatively high stability. The study was carried out in grades one, two, six, seven, and eight. From all this he concluded the method was unreliable. This conclusion is totally unfounded. The whole situation had been changed and some of the children had had time to become annoyed by little habits of those whom they had chosen which had not been apparent before. They might still be friends with them and would continue to value their friendship as long as they were out of arm's reach. Then many children are just always ready for change, for something new and different; this is the need for adventure which was mentioned.

All of this shows why caution should be used in interpreting the data and why these results alone are never enough. They furnish leads or confirmation or suggestions, but never the final answer.

What have we learned about children's relationships from sociometric measures? There is so much more to be learned about children's relationships that really the surface has only been scratched so far. However there are a few things we do know. We know that the children in the top eighth of the class in popularity when compared with the bottom one-eighth "proved definitely to be more extroverted, to have a higher sense of personal worth, a stronger feeling of belonging, to express more acceptable social standards, to possess superior school relations, and to be more attractive in facial appearance."[53] Whether popularity caused these various factors or was caused by them, there is no objective evidence. Even attractive facial appearance is greatly influenced by the child's attitudes and feelings. A sullen, rebellious face is never as attractive as a happy

[51] Caroline Tryon, *Evaluations of Adolescent Personality by Adolescents,* Monograph of the Society for Research in Child Development, Vol. IV, No. 4, Washington, D. C., National Research Council, 1939.

[52] Jean Criswell, "Social Structure Revealed in a Sociometric Retest," *Sociometry,* Vol. 2, October, 1939, pp. 69-75.

[53] Lyle L. Young and Dan H. Cooper, "Some Factors Associated with Popularity," *Journal of Educational Psychology,* Vol. 35, December, 1944, p. 534.

eager one. It is most probable that popularity and these other factors all develop along together, each influencing the others.

In studying the social acceptance of children[54] they have found that neither race, color, high social position, intelligence, nor achievement necessarily determine acceptability. There is a positive relationship between social acceptance and personal ability in intelligence and achievement, but it is not high. There is a desire on the part of most children for friendship with leaders. This was shown in the sociogram on page 98, where the isolates chose "stars" or near stars.

Pupils choose different children for different purposes. When they were asked to designate the one they had most fun with and a workmate there was little relation between these two choices. High IQ and scholastic proficiency by themselves have not proved to be sufficient qualities for acceptance as workmates.[55]

Children recognize ability to do things and tend to enter into social relationships with the child who possesses and demonstrates such ability.

In general, the more social relationships a child has the happier he is. There is some indication that in general the brighter the child, the more social relationships he has, although other factors are more important.

A very important fact is that the earlier the attempt is made to improve relationships the better are the chances for satisfying and lasting results.[56] In fact, if such relationships haven't been pretty well established by the end of the sixth grade, the chances are very much less that they will be. It is also quite certain that the child will not be able to do it without specific, direct, and understanding help.[57]

What is the school's responsibility? The school's responsibility is to use this type of child study whenever and in so far as the personnel can satisfactorily obtain and use it. Through their use the teacher can locate leaders through whom and with whom she can work. She can locate children who need further study and who perhaps need special treatment.

One classroom used the sociometric devices and organized the pupils on a human relationship criterion.[58] There was a marked scholastic and behavior improvement. The children gained in confidence and the tension was reduced. The teacher felt that it provided a means of controlling the external circumstances of school life. He felt that under the reorganization the isolates, rebels, and conformists all lived and worked more adequately. It helped to discover specific attitudes and actions in their

[54] Louis Raths, "Evidence Relating to the Validity of the Social Acceptance Test," *Educational Research Bulletin,* Vol. 26, September, 1947, pp. 141-146+.

[55] Nahum E. Schoobs, "Sociometric Test in the Classroom," *Sociometry,* Vol. 9, August, 1946, pp. 145-146.

[56] Ernest A. Flotow, "Charting Social Relationships of School Children," *Elementary School Journal,* Vol. 46, May, 1946, pp. 498-504.

[57] Georgia May Sacks, "Sociometric Techniques," from a paper presented in Workshop of Human Development, University of Chicago, Summer, 1941.

[58] Shoobs, *op. cit.*

nascent stage before they became established. When the sociometric organization of groups was dropped among the same pupils on subsequent terms, the children gradually regressed to their previous condition of struggling for leadership among themselves, but not completely. A few retained some gains and many became more amenable to suggestions for improvement.

This study would tend to show that even for one term this procedure was worthwhile. However, a continued use of it would quite probably produce better and more permanent results.

VI. THE SCHOOL'S RESPONSIBILITY: ADMINISTRATION

During the first part of this chapter we have been considering the emotional needs of the child, what they are, how to recognize them, and an occasional suggestion as to the school's responsibility. Now let us consider more directly the responsibilities of the administrator and the teacher for providing an environment which will contribute most to the emotional health of each and every child.

The school has two major responsibilities. First and most important is the school situation itself, because of its widespread influence. It must be so set up as to administration, curriculum, staff, and home and school relationships, that it will further good adjustment and desirable personality habits and attitudes. It must not be the cause, however unwittingly, of maladjustments and problems. The second responsibility is to study systematically all pupils so that those who are sufficiently maladjusted to need special attention may be found. Here the school must study the problem, do what is possible to help, and when necessary, call in specialists who are particularly equipped.

The school situation will here be considered to include administrative policies, curriculum, personnel and home relationships. Their effect on personality development will be discussed in this order which is also in the inverse order of importance.

Administrative policies. Many will deny that the administrative policies of their school could possibly influence the personality development of the children. It is to such as these that this section is written. They should study their school thoroughly and, if they wish to have an emotionally healthy situation, be able to answer "no" to all the following questions.

1. Are there any *overage* pupils in the school? This needs two checks. First, are there any pupils in the elementary school (through the sixth grade) who are over fourteen years of age? Pupils of this age and older do not belong here. They are probably adolescent, and neither the work nor the other pupils at this level are interesting or challenging to them. They become conspicuous, are often teased by the other children and even by unthinking adults.

Second, are there any children in any grade who are more than two

years older than the average for that grade? Two years gives all the leeway which is of advantage in adjusting to various mentalities. Beyond that point, discrepancy in ages tends to differentiate and set off the pupil too definitely from the rest of the group. He loses his feeling of "belonging" and, through that, his sense of security and feeling of personal worth. Questions and remarks of others as to his age and grade give him a feeling of failure that undermines his self-confidence. If he is capable of doing school work in a regular grade, he will benefit more by being near his age group despite what has been preached to the contrary. This is true as far as subject matter and skill learning is concerned, particularly in any type of experience program; but especially is this true with respect to emotional health.

A study of promoted and non-promoted pupils showed that the non-promoted ones made very slow progress and were less favorably adjusted. They preferred to associate with their companions in the upper grades, as their classmates were not appropriate companions. They did not receive social approval or acceptance and exhibited behavior traits which indicated that school life for most of them was not a happy one.[59]

It is extremely important, however, when most children are promoted to provide individualized goals and experiences. For the slow child a broad rich program is particularly important rather than special stress on fundamental skills. As Hildreth puts it, it is important to "rethink education in terms of the individual pupil." [60]

2. Are there any *underage* pupils in the school? Sometimes children are entered in school with a false birth date to get them out of mother's way or as a source of pride to the parents. Pupils may be transferred from one school to another and wrongly placed. Extra promotions may put a child far out of his age group. If such children are of normal or subnormal mentality, as is often the case, this is a real handicap to them. They are competing with those far more capable and experienced than they. Thus, they lose their self-confidence and learn habits of failure. The brighter the children the better chance they have of succeeding educationally. However, their social and emotional maturity should also be taken into consideration.

3. Are the *mentally superior* pupils losing their birthright because they are not given opportunity commensurate with their abilities? In situations where the same work is expected of all children, we know that the assignments are geared to the average or low average of the group. This is necessary with this type of teaching. But since this type of program does much less than is possible for most of the children, it becomes essential

[59] Adolph A. Sandin, *Social and Emotional Adjustments of Regularly Promoted and Non-promoted Pupils,* Child Development Monographs, No. 32 (New York, Teachers College, Columbia University, 1944), 142 pp. Also in *Education Digest,* Vol. 10, January, 1945, pp. 48-49.

[60] Gertrude Hildreth, "The Hazards of 'Straight Promotion,'" *Educational Administration and Supervision,* Vol. 32, January, 1946, pp. 19-26.

to provide a better one. While this is important for all, it is perhaps most important for the very bright child. It is to this group that we must look for a great deal of the constructive leadership in every field. It is of paramount importance that they be challenged to the extent of their ability, that they be encouraged to use their initiative. They should learn to have confidence in their own ideas and thinking and develop a sense of responsibility, self-control, and self-direction.

The child who is of superior ability and younger than the average by one or perhaps two years may quite likely be better placed than if he were in his own age group. However, there are several precautions. A child must not be advanced beyond his social group and probably should never be advanced more than two years beyond his normal grade. In most cases it will be found that the bright child will naturally find his associates among those a year or two older than himself and will be able to take his place on equal footing among a class one or two grades beyond his normal grade. This is not by any means always true, and each case should be decided on the individual conditions.

In order to develop to his fullest extent, every child must be challenged to work to the extent of his ability. This is a relatively simple problem for the normal and below-normal pupils, but one of the most poorly solved problems is the case of the gifted child. Where health and social development are what might be expected, acceleration is a partial answer, but other provisions must also be made.

The capable child who is not challenged to the full extent of his abilities develops habits of inattention, a feeling that he can succeed with little effort. By being able to acquire his information and skills with little or no effort, he soon develops the idea that he does not need to exert himself. There is no incentive for him to do more. Carelessness and inattention may soon result in poor work. He loses contact with the group because he feels himself to be different. The rest of the class consider him "stuck-up" and, instead of looking up to him for leadership, tend to avoid him. Finding himself socially ostracized, and not succeeding well in his studies, his attitudes of superiority change to inferiority, and the potential genius finds himself an unwanted misfit.

This picture may seem extreme, but if educators could really know the seriousness of similar problems now developing in their own schools, they would appreciate the importance of the situation.

4. Are the *subnormal* pupils in a situation that does not give them self-confidence or allow maximum development? Putting a slow child in a situation where he is expected to compete on an equal basis with normal children is minimizing his chances for successful development. Continually to expect of him that which he is not capable of producing is to undermine his entire personality. He becomes fearful and shy, anticipating failure; or in trying to bolster his own courage he may become boisterous and overconfident.

Studies tend to show that putting any child in a situation where he is continually expected to make finer discriminations than he is capable of, results in a complete disintegration of the child's behavior. He loses the ability to make discriminations easily made before, and a general emotional upset appears. This situation usually clears up in a short time, but if it were continually repeated, would develop habits which would be most difficult to break. A quotation from Irwin and Marks in *Fitting the School to the Child* is most pertinent here: [61]

> The blacksmith is not necessarily unhappy because he is not a judge; the gasman is not necessarily downhearted because he is not a doctor. It is the inward sense of failure and ineffectiveness which wrecks human lives and which can be avoided by any and every degree of intelligence if family and school influences are shaped to that end. The dull normal boy can be just as serene about his inability to do bank discount, and should be, as you can be about your inability to write as good a play as *Hamlet*. But if someone were at your elbow day by day urging you to write a masterpiece and marking you down as a failure every week and month in which you did not perform the task, it would inevitably and completely break down your personal morale. The state of demoralization which is produced in the dull child by the goad of the curriculum is of this gratuitous nature.

It might be well if every teacher hung a copy of this where she could not help but see it every morning before she met her class.

5. Are the *physically handicapped* still further handicapped by lack of proper care? Many teachers and principals say they have no physically handicapped in their schools or perhaps mention Billy who is lame and Jane who is out of school much of the time with a chronic disease.

What about those not deaf but hard of hearing, not blind but whose eyes do not behave adequately for reading, those in whom malnutrition is undermining energy and powers of attention? If lack of proper sleep or food, or a chronic illness is sapping the child's energy, he has not the strength to make normal healthy adjustments; he learns habits which lead to maladjustment, unhappiness, and again in turn to poorer physical condition. What preventive and remedial measures are in force?

6. Are *temporary educational disabilities* allowed to break down morale because not promptly corrected? A child may develop a temporary disability in one or more of the skills through non-attendance, by missing a point or by a psychological blocking due to fear or anxiety. This situation unless discovered and corrected, often leads to the same type of personality difficulties as in the case of general mental deficiency. The child is not capable of keeping up with this group, loses self-confidence, and develops complications or defense reactions that may continue after the original cause has been eliminated. As Sheviakov and Redl say, "any disturbance in the satisfaction children get out of the work they do with

[61] From Elizabeth A. Irwin and Lewis A. Marks, *Fitting the School to the Child* (New York, The Macmillan Company, 1924), p. 273. Used by permission of the publishers.

their teachers is likely to reflect itself in the production of problem behavior." [62]

7. Are the types of *examinations and marking systems* used in the school breaking down rather than contributing to emotional health?

Do the examinations cover important points in worth-while material, or do they consist largely of catch questions put in the test solely for the purpose of distributing the scores of the class over a desired range? Are the marks given out publicly so that all may know each one's standing? How are the results of the tests used? If a pupil's mark is known only to himself and the teacher, and used solely for the purpose of informing the pupil of his progress, the system may well be called desirable. In this case the pupil has the advantage of being able to see his own progress over a period of time and, in general, finds a feeling of security. If, however, marks are used to compare one child's work with another's, two things happen. The less capable of the two children loses self-confidence, security, and some of his incentive to go on, whereas the other one may develop attitudes just as detrimental to his personality adjustment. Or has your school developed to the point where "marks" are no longer given, but instead a note to the parents is written which gives the child's progress in relation to his previous work?

One of the major difficulties with marks is that they become in the pupil's mind the "currency" which is used to pay for work. The real accomplishment is lost to the individual through the concern for "higher pay." Then erroneous practices persist. One teacher gave an A to pupils having all spelling words correct, a B when one word was missed, a C when two were missed, a D for three, and an F when four or more were missed. What happened to Jim who always missed more than four words? Another example, in a class in English, the students had prepared long reports on a topic of importance in the local community. The marks given were based primarily on the final examination where a few misspellings pulled the mark down considerably. The teacher stated that she was not including the report in the final mark. What do you suppose that did to a student who had put long hours of hard work in on his report? How do your testing and marking practices affect boys and girls?

The only single demand that can be made of all children is this, "Is each one making progress commensurate with his own ability?"

8. Is the school failing to keep adequate and necessary *information recorded* in usable, continuous form so that pupils may be handled in a way suitable to their individual needs?

No adequate program for the pupil development can be carried out without rather comprehensive information concerning each child. It would be comparable to attempting to solve a set of problems without

[62] George V. Sheviakov and Fritz Redl, *Discipline for Today's Children and Youth*, Department of Supervision and Curriculum Development, N. E. A., (Washington, D. C., National Education Association, 1944), p. 45.

DC-7, Calls to attention or to group activity

The contact occurs most frequently in situations where T has to repeat her calls to attention because of slow, indifferent, or negativistic children, or children who "fail to hear."

T: "I see someone who knows and isn't paying attention [Group, *DC-7*, not Unident., DC-7]."

T: "John, face this way, won't you?"

DC-11, Punishment, which includes sending out of room; keeping after school; sending to principal's office; physical attack by T; depriving child of specific material, activity, "right," or privilege.

Mary brought a cootie game to school and was showing it just after she entered the room. T: "I'll have to put that in my desk."

T: "You'll have to put your paper on my desk [*DC-11*]. You can't color if you can't sit up straight [*DC-11*]."

DN, Domination with no evidence of conflict: DN-(1-8) directive; DN-(9-10) lecture method

Included here are the routine mechanics of group management—administrative short-cuts to a teacher-determined goal. In determining the goal, however, the teacher may be acting more as an agent of society or of the school system than as an individual. The teacher's decisions are unsolicited; they anticipate conforming on the part of the child. Within this classification four categories of teacher contacts were differentiated as *directive* contacts, two as *lecture method.*

DN-1, Determines a detail of activity, mostly of a routine sort, with no evidence of conflict

Teacher introduces a subject for discussion, or introduces an activity for an individual, a group, or herself. This category includes relocating child not in conflict with T or others. Calling the roll: the presumption is that calling the roll is a repetition of *DN-1* instructions to "answer when your name is called." If T calls the name of a child who is absent, no contact is recorded. If, however, T asks the group about a child who is absent, check Group *IN-19q.*

T: "I'm going to let you make a picture after recess."

T: "I have some work for you to do."

IT, Integration with evidence of working together

There must be some evidence of direction of goals for both teacher and child. Child is "in" the situation; he has given some indication of interest or desire. In all *IT* contacts the child, as a person, is "accepted as he is." The incorrectness of his solution to any problem or the quality of his performance does not affect adversely his status of being accepted as an individual. He can, therefore, "make mistakes without blame." This type of contact is that indicating the closest *rapprochement* of child and teacher. When there is objective evidence of joint participation toward a common goal, a contact is recorded as *IT.* The situation may have originated with the teacher, but the child must have accepted the activity without evidence of coercion from the teacher.

IT-14, Helps child to define, redefine, or advance a problem

Contacts recorded under *IT-14* ranged from telling a child a word in a reading lesson to helping him work out a complex social relationship. There must be evidence that the problem has been stated or accepted by the child. This category includes both questions and statements.

T: "I don't know whether you will want to capitalize these words or not [to child who has asked for words to be spelled]."

T: "Are you going to speak about a certain aunt and uncle [*IT*-14]?"
C: "No."
T: "I think I would just use a small one in that case [*IT*-14]."

Child has hand up to ask to have word spelled on the board. When T calls on him, he says: "I have forgotten the word now."

T: "Well, when you think of it, you tell me [*IT*-14; not *IT*-16]."

When T tells child a word which is giving him difficulty in the assigned reading, check *IT*-14.

IT-16, *Approval, accord, thanks, acceptance* of the spontaneous or self-initiated behavior of the child. Approval where there can be several answers or new answers

T: "I think that everyone enjoyed your story, Louise."
T: "That's a good idea [*IT*-16]." (But T: "Why don't you *do* that?" This statement in response to child's expressed interest would be *IT*-18.)

IT-18, *Extends invitation* in response to child's expressed wish, suggestion, or need.

C: "I have a safety-first book." T: "Perhaps there are some suggestions you might read to us."

IT-19q, *Questions regarding the child's expressed interest or activity* which do not contribute to a problem of the child's (*IT*-14), or which do not merely express approval (*IT*-16). Many contacts in this category are those in which T is asking for information.

Sarah does not have time to finish writing her story. T asks how she was going to end it (*IT*-19q).

T: "What do you have in your mouth?" (This question more frequently occurs as *DC*-5, but can be a *bona fide IT*-19q.)

IT-19s, *Statements regarding the child's expressed interest or activity* which do not contribute to a problem of the child's (*IT*-14), or which do not merely express approval (*IT*-16). Story reading by the teacher would be recorded under *IT*-19s when there is evidence of the children's interest.

Dick has a butterfly. T: "I see that Dick has a butterfly this morning [Dick, *IT*-19s; Group, *IN*-19s]."

T: "Would you like to show it to us, Dick [*IT*-18]?" Dick shows the butterfly.
T: "Thank you, Dick [*IT*-16]. It's a pretty butterfly, isn't it, boys and girls [Dick, *IT*-16; Group, *IT*-19q]?"

Paul has a dead bird. T, wrinkling her nose, "I see that Paul has brought in a dead bird that probably smells [Paul, *DC*-5; Group, *IN*-19s]. Take it outdoors, Paul [Paul, *DC*-11], and don't bring in anything like that again [Paul, *DC*-6]. We're not interested in that [Paul, *DC*-5; Group, *DN*-8]."

IT-20, *Admits responsibility* for own act that is inconvenient, unjust, or unfair to another; or *admits own ignorance or incapacity*

T: "I'm sorry I made a mistake [*IT*-20]."

Jack is asked to work a problem. He goes to board but can't work it.

T: "Jack, I think you were absent the first day we took up those problems [*IT*-20]. Perhaps someone else can help you [Jack, *IT*-14; Group, *IN*-18]."

The results. Only the Domination in Conflict and the Integration in Working Together are used here, as they were the categories which

showed the most difference. Teachers or supervisors who are interested in improving teaching would find much help in the descriptions and examples of the other categories as well as the further examples from which the preceding excerpts are quoted.

The observations were made after the children had been with their teachers for more than a term but less than a year. The results of the study show that when they tabulated the mean frequency of individual contacts per child, teacher 2C made 1.1 DC contacts while teacher 2D made as many as 7.9.

Teacher 2C also made 11.6 IT contacts to 3.3 for teacher 2D. When group contacts were considered, teacher 2C made 4.4 DC contacts to 7.9 by teacher 2D. Teacher 2C made 38.1 IT contacts to 2.2 by teacher 2D. The authors summarize their results thus: [70]

Comparison of mean frequencies of teacher contacts.—The measures of teacher contacts showed contrasting and significant differences in the two teachers in their use of dominative and of socially integrative techniques; the children in their respective rooms lived in different psychological environments.

Teacher 2C as compared with teacher 2D was found to have significantly:

1. Less domination toward the children as a group.
2. Less domination toward the children individually.
3. More integration toward the children as a group.
4. More integration toward the children individually.

Comparison of mean frequencies of child behavior.—The children in the two rooms showed consistent and significant contrasts in their behavior. The children in Room 2C as compared with the children in Room 2D showed significantly *lower* frequencies in:

1. Looking up.
2. Undetermined child–child contacts.
3. Playing with "foreign objects."
4. Conforming to teacher domination.
5. Non-conforming to teacher domination.

The children in Room 2C as compared with the children in Room 2D showed nificantly *higher* frequencies in:

6. Making voluntary suggestions.
7. Voluntary indicating by hand that they wished to do something or say something.
8. Voluntarily expressing appreciation.
9. Making voluntary social contributions.
0. Telling experiences in response to teacher's open invitation or question.
. Making suggestions in response to teacher's open invitation or question.
Indicating by hand in response to teacher's open invitation or question that they wished to do something.
Making social contributions in response to teacher's open invitation or question.
4. Total social contributions.

next question that comes up is concerned with whether there hapto be some difference in the groups themselves which made it nec-

pp. 72-73.

essary for teacher 2D to be more dominating. This is answered in the next study [71] in the series.

Reed studied these same second-grade teachers the following year, when they were with new rooms of second-grade children. She also studied the second-grade children the following year when they were with new third-grade teachers. Reed's study is important, not only because it offers rather definitive answers to certain questions about these teachers, but because it demonstrates further the validity of this method of studying teachers' classroom personalities.

Reed showed that the more dominating teacher was again a year later more dominating—that this teacher's undesirable personality patterns persisted with the new group of children the following year. On the other hand, there was no similar tendency for the undesirable classroom behavior of the second-grade children to persist into the third grade, when the children were with a different teacher.

Reed also found that the highly integrative teacher was again highly integrative with a new group of children the following year. Moreover, the highly integrative teacher tended to "cut the vicious circle" of domination-resistance with those children most in conflict with her; the more dominating teacher did not. The more dominating teacher was found, in both years, to be using "high frequencies of a technique which could be expected either to stifle spontaneity and initiative or to intensify, not reduce, conflict and misunderstanding in her room."

Conclusions. We can thus draw from this study conclusions which we have suspected for some time. Integrative behavior on the part of the teacher begets coöperation from the student and increases his emotional health and development, both in making him feel a greater sense of personal worth and in increasing his socially contributive relations with others. On the other hand, domination by the teacher increases resistance and decreases emotional health and development.

Other studies. Other studies tend to confirm these findings. Baxter found marked evidence that the behavior of the teacher has an effect on the pupil's sense of security, freedom from tension, courtesy, resourcefulness, and seeking of social recognition.

Schohaus [73] asked "from what did you suffer most in school?" Answers were "sarcasm, excessive demands, contempt and corporal punishment."

How well are teachers adjusted? The consensus of opinion seems to be that instead of being a well-adjusted group, teachers are no better and perhaps are more poorly adjusted than the average person. As with many people, teachers as a group cannot, or will not accurately judge their

[71] Reprinted from Harold H. Anderson, Joseph E. Brewer, and Mary Frances Reed, *Studies of Teachers' Classroom Personalities, III; Follow-up Studies of the Effects of Dominative and Integrative Contacts in Children's Behavior,* Applied Psychology Monographs, No. 11, American Psychological Association (Stanford University, California: Stanford University Press, December, 1946), pp. 152-153, with the permission of the authors and publishers.

[72] These studies were repeated in William U. Snyder, "Recent Investigations in Mental Hygiene in the Schools," *Educational Research Bulletin,* Vol. 24, December, 1945, pp. 222-224.

[73] *Ibid.*

mental health. But it is more important that they should learn to do so, that they should have better insight into their ways of obtaining satisfaction and into their compensatory reactions. All jobs concerned with the handling of people are usually more exacting than other types, and that of handling children is particularly so. For her own sake, as well as for the sake of the children, the teacher must be certain of a healthy mental and emotional balance.

Peck [74] studied 100 women teachers who took work at summer school at the University of Texas in 1935. It is impossible to say whether this selective factor influenced the findings or not. She found these teachers not to be as well adjusted as other women students attending that summer. Of these 100 women teachers, according to the Thurstone Personality Schedule,

One-third are definitely maladjusted.
One-sixth need psychiatric advice.
One-fifth are well adjusted.
One-third feel deserving of a better lot in life, describe themselves as nervous, are shy.
One-fourth are frequently in a state of excitement, are upset easily, are critical of other people, do not plan their work ahead, dislike to take responsibility, suffer from indigestion, fear insanity, are suffering from a conflict between sex and morality.
One-fifth are frequently low in spirits, are tired most of the time.
One-sixth admit they lose their tempers quickly.
One-tenth have had a nervous breakdown.

The sources of their maladjustment as reported by these teachers are as follows:

97 have personal problems, of which 39 have inferiority feelings.
49 have too heavy teaching load.
33 lack congenial associates.
24 have inadequate salary.
24 lack recreational facilities.
21 lack desirable living arrangements.
21 have imposition of extra duties.
20 have financial problems.
20 have health problems.
19 feel restrictions on teachers' social activities and personal conduct.
19 feel uncertainty of tenure, and there are many other problems concerning 15 or less of the teachers.

Bronson [75] found a very similar situation. He felt that since teachers "visit their maladjustments upon children with whom they are associated," they should be selected as to eliminate as many as possible of the maladjusted.

[74] Leigh Peck, "A Study of the Adjustment Difficulties of a Group of Women Teachers," *Journal of Educational Psychology*, Vol. 27, September, 1936, pp. 401-416.

[75] John A. Bronson, "Problem Teachers," *Educational Administration and Supervision*, Vol. 29, March, 1913, pp. 177-182.

A study was reported [76] in which Dr. Altman, the retired chief medical examiner in New York City public schools, presented very disturbing findings. He says that 1500 of the 37,000 teachers in New York City are mental cases and that 4,500 are in need of psychiatric treatment. However, he feels that the number of psychotics is no greater than in the general population. It means, nevertheless, that some 40,000 children are exposed to a psychotic teacher each year.

The same article reports a study from New Jersey which figured out that the chances were seven to one that a child will deal with at least two emotionally maladjusted teachers during his twelve years in school.

What qualities must a good teacher have?

1. *Health.* One of the first requisites for a good teacher is physical health. Lack of energy, low blood pressure, so-called minor chronic or periodic disturbances, though not usually considered in the hiring of teachers, all make an immense difference in their efficiency in the classroom as developers of well-balanced individuals.

A valuable discussion of the whole problem of teacher health, including mental health, appears in the book, *Fit to Teach.* It gives [77] a health habit inventory and ten helpful and extremely practical suggestions as to health fundamentals. Every teacher should have a copy of this or a similar inventory and the list of suggestions, and then follow them for the improvement of her own mental and physical health.

It is found [78] that among the leading health disorders, personality maladjustments are responsible for failure in teaching more often than physical disorders. Intense and persistent worries are a most important health hazard. Emotional problems can be the cause of a good share of physical ill health.

2. *Personality.* Which personality factors tend to make for the best teachers? Several studies of personality differences between superior and inferior teachers have been made. On some factors there seems to be little distinction between the two groups, whereas in others considerable difference was observable. In general, inferior teachers feel more fear, more distress, more anger, more disgust, and more lust, whereas the superior teacher has more of the tender feeling, more amusement, more curiosity, greater creativeness, and better emotional stability.

A most interesting study [79] was conducted in coöperation with the "Quiz Kids" radio program. Over a period of time children were asked to write a letter on "The Teacher Who Has Helped Me Most," telling about her and how she was helpful. There were 12,000 letters from all

[76] Leo J. Alilunas, "Needed Research in Teacher Mental Hygiene," *Journal of Educational Research,* Vol. 38, May, 1945, pp. 653-665.

[77] Department of Classroom Teachers, *Fit to Teach, Ninth Yearbook* (Washington, D. C., National Education Association, 1938), pp. 101-102.

[78] *Ibid.,* p. 39.

[79] Paul Witty, "An Analysis of the Personality Traits of the Effective Teacher," *Journal of Educational Research,* Vol. 40, May, 1947, pp. 662-671.

over the country analyzed, 4,000 from each of the age groups, below nine, nine to fourteen, and fourteen up. The resulting ranking of traits is:

1. Coöperative, democratic attitudes.
2. Kindliness and consideration for the individual.
3. Patience.
4. Wide interests.
5. Personal appearance and pleasing manner.
6. Fairness and impartiality.
7. Sense of humor.
8. Good disposition and consistent behavior.
9. Interest in pupils' problems.
10. Flexibility.
11. Use of recognition and praise.
12. Unusual proficiency in teaching a particular subject.

It is most interesting and significant that there are eleven qualities listed as more important than the ability to teach subject matter.

Sheviakov and Redl say that "a sense of humor is so obviously the most essential characteristic of skillful handlers of discipline problems. One personality trait most injurious to successful discipline is false dignity. We know of no other single personality trait which would cause so much confusion, uproar and mismanagement as this one." [80]

Anderson [81] has a most pertinent and valuable discussion of the personality requirements of a teacher. Among the necessary factors he lists attitude, insight, sense of reality, adaptability, integration, social adjustment, interest, sense of responsibility, resourcefulness, work habits, and loyalty.

Concerning a teacher's general attitude he says: [82]

> The mental attitude . . . of an individual probably constitutes the most important element of the atmosphere of the classroom. The disgruntled, sour, sarcastic, sharp, and bitter teacher has a general attitude of mind that is most dangerous to the shy, timid, over-sensitive child. The suspicious, doubting, supercilious teacher does untold damage to the pupil whose daily life is filled with one long series of threats against his own security. The over-anxious, demonstrative, worried teacher has built up an attitude of mind that commonly develops in the classroom regression tendencies in pupils, is responsible for baby ways of behaving, and halts the maturing process so essential to the mental health and growth of children. And so it is, in their effect on the personalities of each and every pupil in the classroom, those influences emanating from the teacher's attitude of mind are fraught with the greatest possibilities for good or evil.

What should be done about teacher adjustment? Teachers in training should be more carefully selected as to their essential fitness for this exacting job of dealing adequately with developing children. Those who do take teacher-training work should be given a sound foundation in mental

[80] *Op. cit.*, p. 59.

[81] V. V. Anderson, *Psychiatry in Education* (New York, Harper and Brothers, 1932), pp. 300-309.

[82] *Ibid.*, p. 300. Reprinted by permission of Harper and Brothers.

hygiene and, where necessary, insight and help in solving their own personal problems so that they become useful teachers. The teachers already in service should develop through their own work a mental hygienist's point of view. They should take one or two of their class for intensive child study, since so many teachers have reported greater interest, joy, and satisfaction in their work as a result. They should be given help when necessary in arriving at a better personal adjustment.

Suggestions. There are various suggestions which have been given. Teachers consider the following important in bringing about good emotional health.

1. One needs to like to teach and to do so without maintaining the omniscient air of some teachers. A good sense of humor and realism, tempered with idealism, make for happiness in teaching.

2. One needs to be professional and to insist upon the importance of qualifications being followed. No apology need be made for knowing one's worth and expecting to be paid accordingly. It is good to develop wide professional interests and that feeling of "belongingness."

3. If one can obtain wide contacts in life and avoid restricting his contacts to teachers, it can do much to keep him adjusted to his environment and to aid him in developing broader interests.

4. Recognizing and appreciating the abilities and accomplishments of colleagues can promote better teaching adjustment.

5. It is important that the teacher know a great deal about the community, the school administration, and the position before he accepts a teaching position in the community.[83]

There are various ways in which the administration can contribute to the emotional health of its teacher. Some of these have been listed by Strond.[84] Provision as to both time and place should be made for the teachers to do their "paper work" at school. Continued growth and development should be stimulated and recognized so that an atmosphere is created which will broaden rather than narrow a teacher's life. Administrators should help to resist standards for the teachers that are different from the ones held by individuals of like breeding and culture in the community. They should relax marriage restrictions, as many places are now doing. They encourage teachers to participate socially with men and women of other vocations so they may develop an interest in the affairs of the world, and promote personal charm, a feeling of personal worth, and a respect for their profession.

Baruch suggests "Let Teachers Have Their Vices" in an interesting and thought-provoking article.[85]

[83] Paul C. Palmantier, "Why Teachers Go Crazy," *Journal of Education*, Vol. 130, December, 1947, pp. 290-291.

[84] J. B. Strond, "The School Administrator and Problems of Teacher Adjustment," *Elementary School Journal*, Vol. 45, April, 1945, pp. 151-154.

[85] Dorothy Baruch, *Educational Method*, Vol. 21, February, 1942, pp. 230-235.

There are many things that teachers themselves can do to promote their mental and emotional well-being. Stated here as simple precepts, the following suggestions [86] have been offered:

1. Discover and acknowledge weaknesses; then attack these problems with determination, following a suitable corrective program.
2. Attain the best possible physical health.
3. Acquire a satisfactory philosophy of life.
4. Select a worthy life purpose.
5. Engage in work that is pleasant, interesting, and satisfying.
6. Find opportunities for a reasonable amount of success.
7. Face reality with courage.
8. Live one day at a time.
9. Systematize the affairs of life and cultivate helpful habits.
10. Know when to quit work.
11. Develop broad interests and engage in a wide variety of activities.
12. Maintain the spirit of the learner.
13. Cultivate a fine sense of humor.
14. Practise consistently the art of self-control.
15. Seek contact daily with beauty in some of its forms.

Symonds [87] gives various means of evaluating the teacher's personality and suggests means of keeping a "permanent record" for him. Thus, just as with children, administrators will have pertinent information and can judge a teacher's performance on a long-term basis. They can use this as a much more effective means of helping a teacher. For those teachers who are not able to resolve their own personal problems and attain at least a fair degree of adjustment, some other work should be found than that of handling children.

What should be the teacher's attitude toward her pupils? In dealing with pupils we definitely have two approaches. On the one hand we have the mental hygienist's and on the other the teacher's. Each talks his own language. Each has his own viewpoint concerning the problems of the school-room. Each sees them from his own angle. Each definitely needs the other. The hygienist needs to adapt his methods and procedures so that they are useful to teachers who have large groups and little if any outside psychiatric help. The teacher needs to absorb the point of view and general attitude of the mental hygienist to become a more efficient teacher of children.

To do this she needs to understand and accept his approach to pupil problems and to all pupils in general. She needs to acquaint herself with the specific handling of many cases, to get a feeling for the working out of his techniques. Then she needs to practise these consistently with her pupils. If her approach has been of quite a different sort, she had better

[86] Department of Classroom Teachers, *op. cit.*, pp. 101-102.

[87] Percival M. Symonds, "Evaluation of Teacher Personality," *Teachers College Record,* Vol. 48, October, 1946, pp. 21-34.

make changes gradually until she is certain she understands and can use the new method effectively. Many teachers with the best of intentions but little understanding of the basic concepts have erred as far in another direction as the dictatorial or unsympathetic teachers have in theirs.

What is discipline? To most teachers, particularly those just starting out, discipline figures very prominently. To them it is a factor quite separate from their other function of teaching. They must "make the children mind" before they can teach them anything. The dictionary gives two meanings to the word *discipline,* "to punish and chastise" or "to train and educate." Most teachers as well as parents only make use of the first meaning, whereas the second meaning is by far the more important. It is a teacher's job to educate; and the development of knowledge, skills, habits, and attitudes of personality go hand in hand with subject-matter. They are inseparable. Pupils' ways of behavior must be as much an object of teaching as anything else.

A new viewpoint. Each teacher is influencing a child's personality to some extent through every contact with that child. It is beyond consideration that a child would be directly or consciously taught false material or incorrect habits, say of multiplication, yet many of them are being taught undesirable attitudes and habits of personality. In too many cases teachers pick up some techniques or tricks of handling children from their training courses or from their fellow-teachers and largely fall back quite unconsciously on the way *they* were handled at home or at school. A few more techniques, even of a "better type," are not what is needed. *Teachers must acquire a whole new point of view,* the point of view of the mental hygienist.

Pupils' activities are not to be judged by the teacher's whim or mood. Rather they must be considered as to their *real* influence on the group, according to the stage of development and the underlying purpose of the child, and mainly in the light of the ultimate effect on the child. Wickman's study shows how few teachers take this approach. They are often under pressure to keep perfect order and quiet, perhaps at the cost of their job. The easiest (at the time) and most natural (to the untrained) is a suppression of noise, disturbance, and those other activities that bring censure.

This problem may be best understood by an allegory. A little stream is following a certain course. If the farmer who owns the land through which it is running does not like this, he has several alternatives. He may leave it alone and endure the difficulty. He may dam up the stream which gives him temporary relief but soon causes more damage than ever. For the stream either breaks the dam and causes a flood or finds another course that will probably be no more to the farmer's liking, or it may back up over still more important territory. He may harangue the stream and tell it to follow some other course. That will not solve his problem but only upset himself. Or he may start a new course for it, and by watch-

ing its progress, guide it. By a little judicious shoveling he may help the stream to flow in the desired channel.

In many ways the child is like the stream. It has a constant source of energy which if "dammed up" by suppression is bound sooner or later to explode, find another channel, or "back up" and stifle the child's personality. Talking and scolding often have about as much influence as talking to the stream. The only really useful procedure is the active redirection of the child's energies and interests in the way the teacher wants them to go. This is truly educative both as to personality and the more traditional learnings, and as a result the situation becomes mutually developmental.

Shaffer says: [88] "A hundred years ago persons who were ill were bled to cure their ailments. Modern medicine recognizes the futility of this procedure. But children are beaten and scolded even today because parents still in the dark ages of mental hygiene believe that this is an effective way of guiding their conduct."

Scolding, blame, and recrimination which are almost omnipresent factors in some rooms and some schools, are worse than useless. This treatment may dam up children's activities with the resultant difficulties. Being unpleasant, many children soon learn to build up the defense of "not hearing" what is being said, deliberately not listening or forgetting as soon as possible. The shy, sensitive child, dismayed by this approach, shrinks farther into his shell and becomes more of a problem than before. If teachers are honest, they will usually find that such methods are more for relief to their own feelings than a considered aim to help the child.

Teacher should remain a friend. It is a primary and basic principle that the child should always feel that the teacher is "on his side." He must never feel that they are on opposing sides, that the teacher is unfriendly. He may realize her disapproval of the thing he has done but not her disapproval of him. The more severe the delinquency, the more important that the child feel that the teacher is his friend, that she still has confidence in him and will try to help him, that they can work together. No child does anything for a person he dislikes, except through fear. Engendering fear is one of the greatest offenses against childhood and personality. In the end it can do only harm. On the other hand, a child will do unbelievable things for some one he loves and whom he feels has confidence in him. It is a working out of the old biblical precept: "Hate the sin but love the sinner."

Is discipline a group or individual matter? Sheviakov and Redl say that only "about 10% of all cases of school discipline are simple cases of individual disturbances. About 30% at least are cases where problem behavior is produced entirely by group psychological inadequacies of school life. About 60% involve both personal case history of the individual and

[88] Laurance F. Shaffer, *The Psychology of Adjustment* (Boston, Houghton Mifflin Company, 1936), p. 500.

some deficiency in the psychological structure of the group. Prevention of discipline problems then must involve a quite extensive job of group psychological engineering."[89] They also say that any treatment of an individual must be at least harmless to the group and any treatment of the group must be at least harmless to the individual.[90] These statements can well bear considerable thought.

Attack underlying cause, not symptom. Perhaps the next most important principle in the application of mental hygiene is almost never to attack a problem directly. In practically every case a direct attack on a problem is attacking only the symptom. Physicians must know symptoms, but they treat the disease. On the occasions when the symptom is treated they realize it is only a palliative. They know they are offering only temporary relief to an intolerable situation and that such treatment must not be allowed to continue.

There are occasions, however, when the good of the group or the good of the individuals demands that the teacher bring about an immediate change in surface behavior. Guiding principles have been set up which say that whatever methods are used must be at least harmless to the development of basic attitudes. Conversely, it is also true that in attempting to make changes in basic attitudes, the procedures must be at least harmless to surface behavior.[91]

When a group or individual is inattentive and restless, do not say "sit still and be quiet." That has not improved the situation; quite the contrary. Why are they restless? Perhaps they need a change. They may have been working too long in that particular way. They may have no interest or purpose in what they are doing. The work may be too easy or too difficult. Telling them to sit still can hardly affect these real causes of the present symptoms. Correction of the causes is the only real help. This is only a very minor example but illustrates the general principle. The most helpful way to get this point of view in various circumstances is to read of the handling of various problems as reported in case studies. It is illuminating to those not familiar with such methods.

Positive rather than negative. In all learning the "do" is more efficacious than the "do not." The positive suggestion is more helpful than the negative. In the development of wholesome personality this is particularly true. Not only is there less development from negative suggestion, but the very suggestion itself causes a disturbance. It may be resentment, or the blocking up of a stream of activities for which there was a definite readiness. The resultant is more likely to be a breaking-down rather than a building-up of desirable reactions. A positive suggestion may change the direction of the pupil's activities, and it also furnishes an outlet which the pupil can accept and fit into his own plan.

[89] *Op. cit.*, p. 44.
[90] *Ibid.*, p. 25.
[91] Sheviakov and Redl, *op. cit.*, p. 32.

Praise and not censure. Numerous studies have shown that children learn faster under praise than under blame. When commenting on a child's work, the part well done, correctly answered, ingeniously devised or handled should receive recognition and approval. Overlavish praise is unnecessary and at times even detrimental. If possible, the incorrect or poor work should be ignored, and with a little thought it is surprising how often this is possible. Where some correction is necessary, it should be done in an unemotional manner. If we are frank with ourselves, and have insight, we must recognize that most censure springs from the hurt to our own pride that we weren't efficient enough teachers so that all we taught was learned correctly.

Calm assistance, not annoyance or anger. When pupils fail to pay strict attention, fail to remember all we teach them, our superiority is questioned, and we are annoyed and angered. When a pupil fails to comply with the rules of the class, (if we will only admit it) we are angered more by the affront to our authority than by the harm done the child or the class by his action. Now as a result, anger on our part has several effects. It seems that the most persistent errors are those that are most often corrected when the pupil is disturbed emotionally. Many errors are made just because of the emotional upset caused by our angry outburst. Annoyed attention is the only attention it seems possible for some children to attract, and rather than go entirely unnoticed, they do those things that most surely bring down our wrath upon them.

Express confidence, not impatience. Children in the midst of acquiring so much information, so many skills, and developing so many attitudes are not at all sure of what they do know. The teacher's confident attitude often brings forth and crystallizes for the child that which he was not sure he understood before. On the other hand, impatience either with his slowness or his first struggling attempts often blocks his thinking entirely. It divides his attention between the problem at hand and anxiety to avoid our displeasure, which is a sure result.

Show consideration; do not give humiliation at failures. It relieves the teacher's feelings to rebuke a child for his failure. It gives her ego a little inflation when by her clever wit or sarcasm she has been able to cause general laughter at a pupil's expense. Now, don't be too self-righteous, for there are few, if any, who have not done this at some time or other. But what has it done to the child? Where is his self-confidence, his feeling of security, his interest in the material at hand, his happy relationships with his classmates? What has been gained? What lost?

To sum up. All these suggestions could well be summed up in one precept: "Treat each child with respect, as a person." How would you act toward those whom you know in your church group, in your social organizations, or friends who come to spend the evening with you? These people are not forced into our company as the child is. We must treat them with consideration, with courtesy. We must hold their interest if we

are to have their continued friendship. They are not like the child who has to remain where we can use him to inflate our ego, to release our emotions, and who has no recourse. Sometimes we feel that pupils should not be forced to come to a particular school or to a particular teacher. It would then be up to the teacher to organize and conduct her work so that it would attract and hold the child's interest and give him the security and satisfactions that would make him want to continue with her.

IX. THE SCHOOL'S RESPONSIBILITY: HOME AND COMMUNITY RELATIONSHIPS

There is another responsibility the school has in helping to forward the child's adjustment. That is in keeping the relationship with the home and community as happy and profitable as possible. Further, they should do all in their power to improve conditions in both, in so far as they may affect the child. The school's position here is, of course, not one of authority. Rather it is one of active coöperation. They should not wait for the home to come to the school and ask coöperation. Instead, they should be the ones to make the first move when necessary or advantageous.

Home and school contact. The home-school relationships have always been considered important. But the more we study the school situation and the better we understand children, the more important it is recognized to be. Any teacher who has engaged in child study realizes this; she realizes that she can not begin really to understand a child until she knows his home, his family, their attitudes, and the things which they feel are important. In order to establish the friendly relationship which is necessary for effective coöperation, the teacher should visit each home early in the year. It should occur before there is any special necessity of meeting the parents to help solve a problem. If the first meeting is on terms of just getting acquainted to help each other understand the youngster, then coöperation is much surer in case of difficulty.

It is as necessary for the teacher to have some understanding of the parent as it is that she understand the child. Lloyd-Jones[92] believes it is necessary to build a real relationship where they can each accept constructive criticism, and plan out a program for the child together. If two different systems are in operation it may do the child more harm than good.

The parent-school relationship is increasingly recognized as tremendously important. The following suggestions have been proposed as the school's responsibility for improving these relations:

1. In employing teachers, administrators should always make sure that (a) the prospective teacher will be willing to spend time with parents over and above regular school hours; (b) that he has a sound working-

[92] Esther Lloyd-Jones, "Factors Behind the Behavior of Children in School," *Teachers College Record,* Vol. 43, November, 1911, pp. 120-128.

knowledge of child development and of child psychology; (c) that he has the ability to deal with people as individuals.

2. The school should set up in-service training courses for teachers on the technique of interviewing.

3. A written record of every conference should be filed.

4. The school staff should periodically restate its purposes in terms the public can understand.

5. The school should do as much as possible in group parental education in terms of child development.[93]

Community organizations. Many community organizations are interested in child welfare and can be of immense help. Many communities have organizations similar to the coördinating councils in Los Angeles County. Problem cases in the community are discussed at a round table of interested citizens representing various groups and with them a plan is worked out to help the child. He may need a job, or directed recreation, or just successful participation in some out-of-school activity. In all these problems members of all these various community groups may be of real help.

The Big Brother or Big Sister movement is another effort to enlist community assistance. Here some member furnishes understanding and interest in the child which he cannot get at home. There are possible dangers here unless the community participants are carefully chosen and understand the possible problems involved. Case studies and specific instances of community coöperation[94] are most helpful in indicating possibilities for assistance that may be of real value.

X. THE SCHOOL'S RESPONSIBILITY: DIRECT APPROACH TO PERSONALITY PROBLEMS

So far, the discussion has been limited to the school's responsibility for emotional development as shown in the general school situation itself. It is the responsibility of providing a situation in which pupils most naturally and easily develop along the most desirable lines. This may be considered the indirect approach. Beyond this the school has another responsibility, that of directly attacking the problems in pupil adjustment which are present and are sufficiently well established not to respond to the indirect effect of the generally improved situation.

What are the school's responsibilities in the direct approach?

1. The first responsibility is to *study all pupils* so that those needing special care may be accurately located. This can best be done by several procedures. Information should be collected, organized, and filed on each

[93] Kenneth C. Coulter, "Parent-Teacher Conferences," *Elementary School Journal*, Vol. 47, March, 1917, pp. 385-390.

[94] Department of Elementary School Principals, *Personality Adjustment of the Elementary School Child, Fifteenth Yearbook* (Washington, D. C., National Education Association, 1936), pp. 324-328, 546-552. See bibliographies.

child. There are many arrangements of such data, the discussion of which cannot be done justice in this chapter. The Winnetka Scale for Rating School Behavior and Attitudes, Torgerson's Diagnosis and Treatment of Pupil Maladjustment, and others that are discussed in Chapter 15 are useful in studying and keeping records of pupils. Many other materials and techniques have been tried out and found valuable.

Suffice it to say here that such information should include home background, mental maturity, diagnosis of educational level in the skills subjects, work habits, and physical record. All who contact the child in school should furnish anecdotal records, ratings and opinions on social and emotional maturity, attitudes, interests, and special abilities. It is necessary to have adequate information on each child, for without it, the teacher cannot locate those who really need special attention. As was pointed out in Section IV, teachers' impressions of which are and which are not problem cases are far from adequate.

It is essential that this information be easily available to every teacher at all times. They should be encouraged to use it often and to add to it from time to time. Every child should be considered at least briefly, no less frequently than twice a year by a committee of all who contact the child in the school. Children having difficulty should be discussed as soon as possible.

2. When a child has been located who needs special help, the first step is not to "do something" about the child, but to "*find out* something" about him. In other words, further and more complete study from every available source is needed until the cause of the difficulty has been located. The child's own opinions, ideas, and feelings, the parents' understanding of and attitude toward the situation, as complete a physical check-up as seems possible or valuable, including nutrition, blood pressure, chronic disease, or glandular difficulties, must all be brought together with the teacher's own observations and records. Here the help of the school nurse and doctor, the psychologist and the visiting teacher may be utilized. If there is good coöperation from the home, much of the information may be obtained through them. If not, school and community resources must be relied on.

3. When the source or cause of the pupil's difficulty has been located, everything possible within the jurisdiction of the school must be done to *improve the situation.* At this time it is particularly important that the mental hygienist's viewpoint and not that of the traditional school should be the basis on which the readjustment is built.

When a solution has been reached as to the cause of the difficulty, only the first step has been taken. The next is to remedy the situation. An adequate discussion of this would require a book, and there are several that are most helpful. When the case proves to be too difficult for solution in the school situation, again it is the teacher's responsibility to call for help.

Another responsibility of the school is to go as far as facilities and conditions permit, in establishing a Guidance Clinic. The ideal clinic for a city school consists of a psychiatrist, a psychologist, and a psychiatric social worker. If the system is large the staff is increased; if small it may be on a part-time basis. If persons of such training are not readily available, the school should obtain the services of as many of these as possible. Some communities have banded together, hired such a team and developed an itinerary which they cover once every two weeks. This gives service to a great many children over a wide area.

One system has a psychologist trained in clinical procedure and experienced in school routines. In one year one-fifth of the children in the system received some type of individual psychological attention. Most of this was of a preventive nature. Nearly a quarter of the children were referred by their parents rather than by the school, indicating good community acceptance.[95]

Under any conditions when children are to be referred to a clinic it should be only with the consent and coöperation of the parents. If this is not done the attitudes and antagonism at home may more than undo all the work of the clinic. Besides, practically all problems require the coöperation of the parent before any kind of a solution can be reached.

"Handle with care." All of this diagnosis and remedial help must be handled with the utmost care. In no other field is there possibility of innocently doing so much harm. Much of the work should be done by persons trained for that particular job. Kanner speaks truly when he says: [96]

> A teacher . . . should never attempt to go beyond observing the pupil, obtaining the facts which will lead to an understanding of the problem, and helping with a logical remedial program. This is a very necessary warning, for it has been the experiences of principals, parents and mental hygienists that much harm is done by some teachers' assumption of prophetical propensities or their tendency to proclaim sweeping "psychiatric diagnoses."

Some may take high-handed methods without authority, or by lack of diplomacy make bad problems worse. And again, the teacher's attitude must be right. Josiah Royce expresses it with rare understanding:

> You must come now, not any longer as a disciplinarian but quite sincerely as a friend, as humane man offering help to a younger brother in distress. . . . You must be a true naturalist and study this live creature as a biologist would study cell growth, under a microscope, or as a pathologist would minutely examine diseased tissues. In order to study, you must, of course, love. Minds and their processes must be delightful things in your eyes. . . . Intolerance and impatience have absolutely no place in such a scrutiny. You must fear nothing. You will be very tender with the sanctities of youthful feeling; but if, in the course of your scrutiny, a poor heart gets open to you and you find it a very evil

[95] C. L. Murline, "Psychology Goes to School," *American School Board Journal*, Vol. 110, February, 1915, p. 29.

[96] Department of Elementary School Principals, *Fifteenth Yearbook, op. cit.*, p. 443.

heart indeed, you will never show—yes, if you are wise, you will seldom feel any contempt.

Suggested Learning Experiences

1. Observe a class of children on at least three different occasions. Note any significant signs of maladjustment.
2. Which of the basic emotional needs are being least well met? How could the specific instances which you noted be reorganized so as to better meet these needs?
3. Observe a teacher working with her class. Note the instances in which she violated any of the mental-hygiene principles mentioned in this chapter.
4. Consider the best and the worst teachers you have had. Analyze them as adequately as you can as to the qualities a good teacher must have and the extent to which they met the needs of the class. Study the results of your rating.
5. Read one or more of the books under "Mental Hygiene References for Teachers" and check yourself as to your own mental health. Report to the class those principles which you feel are particularly valuable for teachers.
6. Give your idea of how the same situations could have been handled so as to maintain good mental hygiene.
7. Check a class on the eight points of administrative policies as to whether they build up or break down emotional development.
8. Choose one of the children observed under question 1. Find out all you can about his background and the present difficulties.
9. In discussing this child with the teacher and parent, note which of the problems they mention as serious from a mental hygienist's point of view.
10. In your opinion what are some of the definite and specific things which might be done to help this child?

Selected References

Anderson, V. V., *Psychiatry in Education* (New York, Harper and Brothers, 1932). Discusses progressive practices and portrays an excellent mental-hygiene attitude.

Baxter, Bernice, *Teacher-Pupil Relationships* (New York, The Macmillan Company, 1941), 166 pp. Gives many instances and thumb-nail sketches of teacher-pupil behavior, and analyses them in terms of the successful, effective teacher.

Baxter, Edna Dorothy, *An Approach to Guidance* (New York, Appleton-Century-Crofts, Inc., 1946), 305 pp. Written about high school, it is about half in story form and half in interpretation. Delightful reading, and it is almost as valuable for elementary teachers as for secondary.

Beaumont, Henry, and Macomber, Freeman Glenn, *Psychological Factors in Education* (New York, McGraw-Hill Book Company, 1949). Very helpful in aiding the teacher to understand the basic needs of children and to teach so as to satisfy them.

Breckenridge, Marian Edgar, and Vincent, E. L., *Child Development: Physical and Psychological Growth Through the School Years* (Philadelphia, W. B. Saunders Company, 1943), 592 pp. A sound and thorough discussion of topics related to emotional development.

Carmichael, Leonard, ed., *Manual of Child Psychology* (New York, John Wiley & Sons, Inc., 1946), 1068 pp. A most comprehensive review of all the major research findings in the field of child development. See especially Chapters XV and XVI.

Child Growth and Development Emphasis in Teacher Education, (State Teachers College, Oneonta, New York, American Association of Teachers Colleges, 1944), 142 pp. Part III discusses the basic generalizations concerning human development, growth, and behavior which teachers should know.

Department of Classroom Teachers, *Fit to Teach, Ninth Yearbook* (Washington, D. C., National Education Association, 1938). A study of health problems of teachers from various angles including mental and spiritual health. Most helpful both to teachers, teachers' organizations, and administrators.

Department of Elementary School Principals, *Personality Adjustment of the Elementary School Child, Fifteenth Yearbook* (Washington, D. C., National Education Association, 1936). Valuable discussions of factors affecting pupil adjustment and of various diagnostic and remedial measures.

GATES, Arthur I., and BOND, Guy L., "Failure in Reading and Social Maladjustment," *Journal of the National Education Association,* Vol. 25, October 1936, pp. 205-206. Indicates the close interrelation of personality and school success, each being an important factor in the other.

———, JERSILD, A. T., and others. *Educational Psychology* (New York, The Macmillan Company, 1942), 805 pp. Good material on child development and mental health.

HOLLINGSHEAD, Arthur D., *Guidance in Democratic Living* (New York, Appleton-Century-Crofts, Inc., 1941), 260 pp. Describes the planning and thinking done in one school in the process of setting up democratic living.

HOPKINS, Thomas L., *Integration, Its Meaning and Application* (New York, Appleton-Century-Crofts, Inc., 1937). The chapter on conditions influencing integrative behavior is particularly pertinent to this chapter.

HYMES, James L., Jr., *A Pound of Prevention, How Teachers Can Meet the Needs of Young Children* (New York, Caroline Zachry Institute, 17 East 96th Street, New York, 28, 1941), 64 pp., 25¢. A most readable, practical, and helpful pamphlet. Should be on every teacher's desk.

JENKINS, Gladys Gardner, SHACTER, Helen, and BAUER, William W., *These Are Your Children* (Chicago, Scott, Foresman and Company, 1949), 192 pp. A new kind of book on child development, fascinating, scientific, profusely illustrated and easily understood. Equally valuable for parents.

JENNINGS, Helen Hall, *Leadership and Isolation* (New York, Longmans, Green & Company, 1943), 240 pp. An analysis of the choice process within the individual which underlies his acceptance and rejection of others. A contribution to the sociometric method.

———, *Sociometry in Group Relations,* A Work Guide for Teachers (Washington, D. C., American Counsel on Education, 1948), 85 pp. Step-by-step techniques for diagnosing relationships in school groups, with discussion of psychological principles involved and suggested remedial action.

JERSILD, A. T., *Child Psychology,* 3rd ed. (New York, Prentice-Hall, Inc., 1947), 623 pp. Development of behavior, interests, understanding judgment.

———, and HOLMES, F. B., *Children's Fears,* Child Development Monographs No. 20 (New York, Teachers College, Columbia University, 1935). Results of studies of fears of young children.

———, MARKEY, Frances V., and JERSILD, Catherine L., *Children's Fears, Dreams, Wishes, Daydreams, Likes, etc.* (New York, Teachers College, Columbia University, 1933). Gives intimate glimpses into the minds of children from five to twelve.

KATZ, Barney, "Children in Distress," *Education,* Vol. 66, May, 1946, pp. 573-577. A discussion of the underlying causes of undesirable forms of behavior.

"Mental & Physical Health," *Review of Educational Research,* Vol. 16, No. 5, December, 1946, pp. 389-488. (See also Vol. 19, December, 1949). A summary of the research in this area for the three years previous.

MORENO, J. L., *Who Shall Survive? A New Approach to the Problems of Human Interrelations* (Washington, D. C., Nervous and Mental Disease Publishing Co., 1934). The initial and basic presentation of the sociometric method.

MURPHY, Lois B., and NEWCOMB, Theodore M., *Experimental Social Psychology* (New York, Harper and Brothers, Revised edition, 1937). Gives much sociological background for the development of personality.

National Society for the Study of Education, *Juvenile Delinquency and the Schools, Forty-Seventh Yearbook,* Part I (Chicago, University of Chicago Press, 1948), 280 pp. "Emphasizes importance of teachers' understanding of children's needs and problems, and skill in human relationship."

Ohio State University, University School, *How Children Develop,* University School Series No. 3 (Columbus: The University, 1946), 79 pp. A brief but valuable picture of the developmental needs of children.

PLANT, J. S., *Personality and the Cultural Pattern* (New York, Commonwealth Fund, 1937). An analysis and interpretation of personality from the standpoint of the culture and environment.

PRESCOTT, D. A., *Emotion and the Educative Process* (Washington, D. C., American Council on Education, 1938). A different and valuable approach to the education of children.

RASEY, Marie I., *Toward Maturity* (New York, Hinds, Hayden & Eldredge, 1947), 242 pp. A very "different" sort of book, very much worth reading. It gives hundreds of "thumb-nail" sketches illustrating points being made. Written from the child-study point of view.

SAUNDERS, Carleton M., *Promotion or Failure for the Elementary School Pupil* (New York, Teachers College Bureau of Publications, Columbia University, 1941), 77 pp. Non-promotion as result of failure found on every count not to benefit the child.

SCHNEIDEMAN, Rose, *Democratic Education in Practice,* Education for Living Series (New York, Harper and Brothers, 1945), 534 pp. Especially useful to teachers of the intermediate grades.

SHEVIAKOV, George V., and REDL, Fritz, *Discipline for Today's Children and Youth,* Department of Supervision and Curriculum Development, N.E.A. (Washington, D.C., National Education Association, 1944), 64 pp. Essential reading for every person responsible for working with children.

STRANG, Ruth, *An Introduction to Child Study* (New York, The Macmillan Company, Rev. ed., 1938), pp. 365-383, 389-397, 476-481, Chs. XVII, XX, XXI. Discussion from the point of studying children.

THORPE, Louis P., *Child Psychology and Development* (New York, Ronald Press Company, 1946), 781 pp. A thorough discussion of various topics discussed in this chapter.

———, *Psychological Foundations of Personality* (New York, McGraw-Hill Book Company, 1938). A precise and thorough treatment of the foundations of personality, its educability, its adjustment, and its measurement.

WARNER, W. Lloyd, HAVIGHURST, Robert J., and LOEB, Martin B., *Who Shall Be Educated?* (New York, Harper and Brothers, 1944). Basic reading for a point of view too seldom considered.

WOLF, Jean S., "A Comparative Study of Two Groups of Girls of Relatively Equal Intelligence but Differing Markedly in Achievement," *Journal of Applied Psychology,* Vol. 21, June, 1937, pp. 304-310. One important finding was that the success girls consistently showed better adjustment and wider range of ability as evidenced by mechanical aptitude.

WOOD, Ben D., and HAEFNER, Ralph, *Measuring and Guiding Individual Growth* (Silver Burdett Company, 1948), 535 pp. A very readable presentation of individualized education, based on careful study and cumulative records, which results in the careful guidance of students toward their own unique goals.

ZACHRY, Caroline B., *Personality Adjustments of School Children* (New York, Charles Scribner's Sons, 1929). Readable case studies of various types of personality problems with a chapter on adjustment and the school.

Mental-Hygiene References

BURNHAM, William H., *The Normal Mind* (New York, Appleton-Century-Crofts, Inc., 1925). Discusses the fundamentals of mental health, particularly in relation to the school child.

———, *The Wholesome Personality* (New York, Appleton-Century-Crofts, Inc., 1932). A most valuable book for every person to read. Particularly pertinent chapters are those on disintegrating conditions, fear and personality, mental conflicts, problem of failure, personality differences, and the wholesome personality.

FENTON, Norman, *Mental Hygiene in School Practice* (Stanford University, California, Stanford University Press, 1943), 455 pp. A broad discussion of mental hygiene and the schools, with a considerable section devoted to studying individual children.

FRANK, Lawrence K., "Mental Health in Schools," *Education,* Vol. 66, May, 1946, pp. 546-555. Excellent point of view and statement of problem giving the responsibility to teachers and school systems for the mental health of coming generations and the achievement of a democratic social order.

HOWARD, Frank E., and PATRY, Frederick L., *Mental Health* (New York, Harper and Brothers, 1935). A comprehensive treatment of mental hygiene, its principles and practices, with special attention to school children who have adjustment problems. It contains two chapters on methods of reconstructing personality and behavior problems. Many case studies by teachers.

MORGAN, John B., *Keeping a Sound Mind* (New York, The Macmillan Company, 1935). An excellent presentation of the essential principles of adjustment. A book for teachers to help their own adjustment.

N.E.A. Department of Supervisors and Directors of Instruction, *Mental Health in the Classroom, Thirteenth Yearbook* (Washington, D. C., National Education Association, 1941), 301 pp. Examples of good mental hygiene in the classroom and the factors which contribute to it.

RYAN, W. Carson, *Mental Health through Education* (New York, Commonwealth Fund, 1938). A book which should be read by every person connected with schools and children.

SHAFFER, Laurance Frederic, *The Psychology of Adjustment* (Boston, Houghton Mifflin Company, 1936). A very thorough and objective approach to mental hygiene. Especially valuable are sections on adjustive behavior, personality, techniques of mental hygiene, and applications of positive mental hygiene.

SHERMAN, Mandel, *Mental Hygiene and Education* (New York, Longmans, Green & Company, 1934). Designed to aid teachers to discover and understand the emotional and personality problems of their pupils.

SYMONDS, Percival M., *Mental Hygiene of the School Child* (New York, The Macmillan Company, 1934). One of the most valuable books for positive mental hygiene, discussed from the point of view of the child, the teacher, and the organization of the school.

WITTY, Paul A., and SKINNER, Charles E., editors, *Mental Hygiene in Modern Education* (New York, Rinehart & Company, 1939), 539 pp. Contributions by eighteen specialists, each from his own point of view and in his own area. Particularly helpful is Chapter XVIII, "The Rôle of the Teacher," by Goodwin Watson.

References for Those Interested in Studying Individual Children

ANDERSON, Harold H., and BREWER, Joseph E., *Studies of Teachers' Classroom Personalities,* II, Applied Psychology Monographs, No. 8 American Psychological Association (Stanford University, California, Stanford University Press, June, 1946).

———, ———, and REED, Mary Frances, *Studies of Teachers' Classroom Personalities,* III; Follow-up Studies of the Effects of Dominated and Integrated Contacts in Children's Behavior, Applied Psychology Monographs, No. 11, American Psychological Association (Stanford University, California, Stanford University Press, December, 1946). These two studies clearly show the effect of teacher personality on children's development. They give many examples of good and bad teacher-pupil contacts with which every teacher should be familiar.

A Sociometric Work Guide for Teachers (New York, American Council on Education, 1947), (mimeographed). Helpful specific instructions.

BAKER, H. J., *Introduction to Exceptional Children* (New York, The Macmillan Company, 1944), 496 pp. A comprehensive treatment of Detroit's work with physically handicapped, slow-learning, educationally retarded and mentally gifted children, especially in relation to their behavior adjustments.

———, and TRAPHAGEN, Virginia, *The Diagnosis and Treatment of Behavior-Problem Children* (New York, The Macmillan Company, 1935). Contains the Detroit Behavior Scale with ample discussion of each of the sixty-six factors. There are also case studies and a helpful discussion of the interrelationship of behavior problems.

BIBER, Barbara, MURPHY, Lois B., WOODCOCK, Louise P., and BLACK, Irma S., *Child Life in School: A Study of a Seven-Year-Old Group* (New York, E. P. Dutton & Company, 1942), 658 pp. A most interesting and comprehensive study with many suggestions and much help for any teacher.

BRATTON, Dorothy, "Classroom Guidance of Pupils Exhibiting Behavior Problems," *Elementary School Journal,* Vol. 45, January, 1945, pp. 286-292. A discussion of ways to treat some of the "discipline problems"—to provide emotional health.

DRISCOLL, Gertrude, *How To Study the Behavior of Children* (New York, Bureau of Publications, Teachers College, Columbia University, 1941), 84 pp. A manual for helping teachers study children and use the information they get.

How to Construct a Sociogram (New York, Horace Mann-Lincoln Institute of School Experimentation, Bureau of Publications, Teachers College, Columbia University, 1947). A practical manual of instructions.

KELIHER, Alice V., "Behavior Has Its Roots Down Deep," *Child Study*, Vol. 21, February, 1944, pp. 42-43. An excellent series of thumb-nail case studies.

Staff of the Division on Child Development and Teacher Personnel, *Helping Teachers Understand Children*, (American Council on Education, Washington, D. C., 1945). A description of three years of directed child study work with teachers and children. Most helpful.

STARR, A. S., "Patterns in Clinical Services," *Training School Bulletin*, Vol. 43, October, 1946, pp. 110-116. Gives various types of child guidance clinics which have been used.

STRANG, R. M., "Methods, Techniques and Instruments of Mental Hygiene Diagnosis and Therapy," *Review of Educational Research*, Vol. 16, December, 1946, pp. 436-443. A summary of research in the field of child guidance clinics.

SYMONDS, Percival M., *Psychological Diagnosis in Social Adjustment* (New York, American Book Company, 1934). A somewhat technical treatment of diagnosis of criminal tendencies, mental disorder, vocational fitness, and perhaps most valuable, citizenship and leadership.

4

The Child As Motivated By Purposes and Interests

I. INTEREST: A BASIC FACTOR

The use of interest for education has been a center of controversy for many years. Before its introduction the educational leaders had selected subject-matter on the basis of what they believed the child should know when he grew up. He was supposed to sit and learn this by direct effort and force of will, and the harder it was for him, the better training he received. The advocates of the use of interest believe that learning based on interest is more rapid, more efficient, and has many valuable concomitants. These two viewpoints have persisted, with varying emphasis up to the present, with the doctrine of the use of interest gaining ground at an increasing rate. In its struggle for adoption, interest's most ardent friends have been its worst foes, as frequently happens. Many proponents understood only part of the underlying principles or merely the externals and by applying these have given their opponents their most forceful arguments. Much of the teaching going on to-day under the guise of being based on pupil interest is of this inadequate character.

The "magic" of interest. In 1913 Dewey wrote a little book *Interest and Effort in Education*[1] which is still the most valuable book written on the subject. Every teacher or prospective teacher should read and think through this short but crucial discussion.

It was discovered that when pupils were doing things they were interested in, they were happier, learned more, became better adjusted in their personal relationships, and there was an enormous drop in the emphasis needed on discipline. What more could one ask! Immediately teachers responded, "Let us, then, teach that way! What things are children interested in?"

Here was the beginning of the wrong premise on which many are still working. Educators started immediately to make an inventory of the specific things in a child's environment in which he was interested. They asked children to write down the things they wanted to know about a topic that was about to be discussed, or a course that was beginning. They obtained thousands upon thousands of items, and on the theory of these being interesting to children they began to teach them, as they had

[1] John Dewey, *Interest and Effort in Education* (Boston, Houghton Mifflin Company, 1913).

taught before. The magic was lost somewhere. The results were the same as before. None of the expected advantages appeared. They had missed the point!

What then is the point? How can we find pupil interests and what shall we teach to make use of them? Let us reframe the question as a first step. How shall we determine the *basis* of pupil interest, and *how* shall we teach to make use of it? There has been much confusion between *interest* and *an interest.* Interest is a state of being, a way of reacting to a certain situation. An interest is that field or area to which a child reacts with interest consistently over an extended period of time. Interest may be aroused and directed toward any number of things for a variety of reasons. The *how* of achieving it is of vastly greater importance than the *what.*

How do we achieve interest? For interest to be present, the child himself must be active, and that activity must fill a need. The type of activity and the basic needs may be anticipated from a general understanding of child psychology. There are four major fields in which children naturally react with interest. First, is physical activity, using the body as a whole, and particularly the hands; second, use of tools to satisfy some need of his own, perhaps only that of manipulating the tools; third, mental activity, actively thinking about things, solving problems that are meaningful to them (this will be discussed later); and fourth, the activities of people around them. Through the child's gradually broadening contacts with people he can become interested in all the vital phases of human life and the environment, about which he is or can become conscious.

This last phase is enormously broad. The main point is that the growth of interest is based on the child's interests in people; in the people he knows and the things they do, and the environment they contact and react to. Within this range of activities and fields the child's interest develops in relation to his growth.

Interest through experience, power, and needs. This growth, which is a vital factor in interest, is in terms of experience, power, and needs. Before a child may become truly interested in anything, he must have had experience that will furnish a background for it. Without such a background the material will be meaningless, or at best the meaning will be impoverished. Such material can hold little interest.

The child grows in power and the task must keep pace. In the opinions of many, the schools expect only from 10 per cent to 50 per cent of the pupils to do successfully the work planned for them! What greater condemnation of our school system could there be! We will not have reached our aim until the tasks are so planned that they are adapted to the powers of all. Then we can rightfully expect the per cent who are successful to approach 100.

The child also grows as to his needs. His needs develop socially, personally, as to skills, knowledges, and habits. The child's basic needs were

discussed in Chapter 3. It is these and the more specific needs derived from the fulfilling of these basic ones which supply a foundation of interest.

There are two sides to this problem of needs. Educators know from their study and experience that a child needs certain knowledges, skills, and attitudes as well as other abilities. It is the school's responsibility to lead the child to feel the need for these when he has reached the optimum period of growth in experience and power.

On the other side we have the child already feeling a need for a certain type of activity. This should be evaluated as to the best interests of the child on various criteria. It may not meet all these criteria. It may be of such extreme advantage from one or two standpoints that it is worth while on that basis alone. On the other hand, if the activity does not seem to be valuable according to most criteria, it may be well to redirect his activity so that he loses none of the former values but gains new ones. When the child is satisfying his needs in undesirable ways, he should, of course, have his activities redirected, generally by substituting valuable activities which will fill those needs.

Many activities satisfy these needs directly and are readily and completely accepted by the child. In other cases, it may be necessary to help the child to make the connection. The more the child feels the need for an experience, the more fully he recognizes that need, the more completely will he accept the aim and purpose as his own. In other words the more interested he will be in it.

Thus, by recognizing that a child is a being who is active mentally, physically, and socially, and who is a person growing in experience, power, and needs, one has the basis for building interest.

How can this interest be directed and put to use? "Interest is primarily a form of self-expressive activity." [2] The infant has a tendency to act and respond to his environment. He sees something, has a desire to handle it, and if it is within his ability, he does so. He is interested in manipulating a certain part of his environment in a way that is within his experience, power, and needs. At that level this constitutes a unit of interested activity. It is direct, immediate, and of short duration.

As the child develops, he has a larger environment and increased abilities. He becomes able to recognize and accomplish an intervening step in obtaining the desired result. To the extent that there are intervening steps and the final aim is delayed but kept in mind and worked toward, to that extent is interest indirect and prolonged. This process shows development.

The child must recognize that each of the intervening steps is a necessary part of achieving the desired aim. When he does, he becomes interested in them, or at least in accomplishing them, to the same extent that he is interested in the final aim. It may be simple, as a child with a

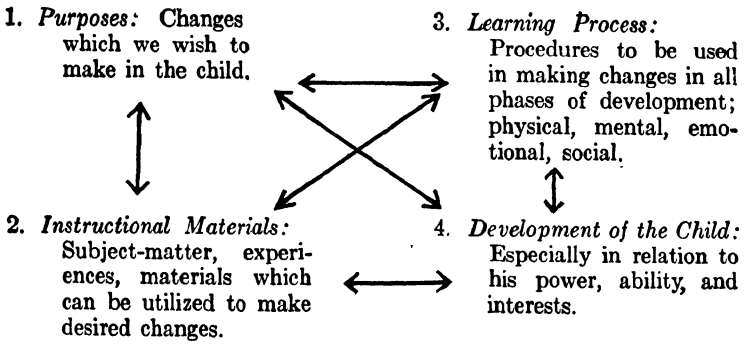
[2] *Ibid.*, p. 21.

mechanical toy. He sees it, wants to play with it, but finds he must wind it before it performs. His interest is directed toward getting it wound. Or the process may be more complex if he may wish to sail a kite but must first construct one. Then there is the location and selection of materials, the building of it, the trial flight, and possible reconstruction before he can really fly the kite. His interest is in turn directed to each of these steps as long as he still wants to fly the kite.

In both these cases the child had a purpose and recognized certain intermediate steps in the accomplishment of that purpose. He was interested in turn in completion of each of these steps to the same extent as he was interested in the main purpose.

How should subject-matter be selected? It has already been indicated that a child can become interested in an almost unlimited range of subject-matter as long as it is within his experience, power, and needs. Child interest then, if used as the sole criteria for selection of subject-matter, would not furnish much of a guide, nor would it be sufficient.

The answer to how subject-matter should be selected is complex when applied, but perhaps the process can be clear. We know at present some things about:



This diagram is used to emphasize the point that subject-matter is selected for the purpose of making desired changes in the child but cannot follow from the purposes alone; it must also be related to the learning process and the development or maturation of the child. All four factors are now closely interrelated, changes in one producing changes in another. Each exercises some influence on the other three.

Another criterion which should be used is that "school work should be relevant to current living." [3] This is implied in the above but needs to be considered separately. Material and ideas which are relevant to current living are certainly closer to fulfilling the needs of the child, are more worth while in themselves and can more readily be within the experience of the child. When they are of necessity beyond the experience

[3] James L. Mursell, "Progressive Education, Is It Through?" *Progressive Education*, Vol. 23, May, 1916, pp. 218-251.

of the child either in time, as the study of past events, or place, as the study of other peoples, they still need to be relevant to current living.

The method of selecting subject-matter or experiences that seems to be most acceptable, in view of the principles discussed in this book, is to make selections of certain "centers of interest," "areas of experience," or "larger concepts" for each grade. These are selected after a careful consideration of the evidence from all the four factors and furnish a framework on which to build. This formulation for each grade is made from the coöperative thinking of the staff. This point is further discussed in Chapter 9. It should be stressed that some experiences or subject-matters are of more value than others. It is implied that the "value" of materials is a consideration affecting the final solution.[4]

Then within the framework the teacher is free to follow the expressed preferences of her group or adjust to the particular needs, experiences, and powers of her particular group. The same outcomes can result from contact with a variety of subject-matter. It is the function of the teacher to make adaptations in the instructional materials and the learning procedures in the light of her knowledge of the children's development, in order to realize the purposes or make the desired changes in her children.

Interest vs. curiosity. Here is a good place to discuss the difference between interest and curiosity, or real interest and emotional appeal, or true interest and false interest. When a person sees or hears something about which he knows little or nothing, and he is stimulated to find out more about it; that is curiosity. As he satisfies his curiosity, he may or may not develop an interest in it. If it gives him a feeling of success and accomplishment, builds on his former experiences in a meaningful way, is within his power and meets his needs, he will develop interest in it.

When interest is objected to as merely amusement or a temporary excitation, it will be found that the interest in question is something which attaches merely to a momentary activity *apart from its place in an enduring activity*. Interest so created is abnormal, for it is a sign of dissipating energy.

In discussing false and true interest Dewey says: [5] "Genuine interest, in short, simply means that a person has identified himself with, or has found himself in a certain course of action. Consequently he is identified with whatever objects and forms of skill are involved in the successful prosecution of that course."

Many teachers in attempting to utilize the interests of their pupils try to capitalize on every passing fancy. This only results in very superficial treatment of any topic with few of the real values achieved. There is an effect of flitting from one thing to another. Each time a new topic of interest is proposed, pupils start work on that only to drop it at the next new suggestion.

[4] See the discussion beginning on page 328 for an elaboration.

[5] Dewey, *op. cit.*, pp. 42, 43.

This has little to do with interest. It has many undesirable concomitants and few, if any, of the values. It is this type of interest that has been condemned as soft pedagogy, and rightly so. Interest to be of value in teaching must be real, basic, and relatively long-standing. Teachers should be aware of casually expressed interests, as they may be excellent introductions to other more valuable problems. If the expressed interest is among the more desirable, it may be encouraged and developed into a real interest. It may be an expression of an interest already developed.

Develop intrinsic interest. When the material has not been selected to suit the powers, experiences, and needs of the pupils, when they have not recognized that need and identified themselves with the solution of the problem, the teacher finds the children not interested. But they must become interested to learn effectively, and therefore she tries to "create" interest. She brings in all the irrelevant, external factors in which she believes the children to be interested and tries to tie them onto the unappreciated material in order to make it more palatable. This is all wrong.

Instead, the teacher should examine the material and her method of presenting it to discover why she is not succeeding in making use of the children's real and vital interest. Perhaps the subject-matter is not worth teaching. Perhaps it is too easy, or too hard, or entirely beyond the experience of the particular children in her group.

Perhaps she had not helped the children see its value in relation to other areas which were meaningful to them. Perhaps she had not developed with them the purposes of the study and helped them to outline the means of solving the problems involved, so that they accepted it as their own.

If these criteria have been fulfilled, at least the large majority of the pupils will enter whole-heartedly into the work. As each step which appears is recognized to be necessary to attain the end, pupils will strive to accomplish it with the same interest they have in the final product or solution. This is, of course, provided that each of these steps meets the requirements of the problem as a whole.

Interest and effort. Effort is put forth in direct proportion to the interest. When effort is required by the teacher either directly, or indirectly by her stimulation of the pupil to forced effort, the result is strained activity and little else. When interest is the stimulator, the child feels the inherent demand for continuing and completing the problem even in the face of difficulties.

When the situation is too difficult for solution, the child may decide it is not worth the effort and drop the whole thing. If the interest is strong enough, he may rely on his intelligence to make use of new means to attain his end. The amount of voluntary effort the child puts forth is a measure of his interest. Too easy problems stimulate little interest. The right amount of difficulty increases his interest. Under this situation a task becomes not dreaded work which must be done but an undertaking

involving difficulties to be overcome, a stimulus to thinking and reflective inquiry. We should look for the motive *in* the lesson, not *for* the lesson.

Interested activity leads to further interest. The interest shown in the intermediate steps to the solution of the whole problem merit further consideration. Let us examine a particular situation. The class is studying the water supply in their community. During the course of the unit they find they need certain arithmetic skills to figure cost, the volume available, the average amount used per family, and various other factors. Since they need these techniques, they are interested in acquiring them. Some children may not only develop interest in the skill as it is used in their problem but an interest in the skill itself, in the manipulation of figures just for the satisfaction of doing it. To a certain extent this is legitimate.

When the material which has taken on interest for its own sake is in itself worth while, or is a means to an already recognized end, it is decidedly valuable. When it becomes a skill isolated from any meaningful or valuable use, and in itself is not of great importance, it may be detrimental. For instance, a child in fourth grade developed an interest in multiplication of fractions by the cancellation method. There was no use or purpose in mind beyond the mere satisfaction of doing it. She continued an interest in mathematical manipulations for their own sake, much as one solves riddles or puzzles. She spent much of her high school and college work in this way.

At no time did she have in mind any real purpose or use for the material or skills. They were based on her experience and well within her power while still presenting difficulties to solve. They satisfied a need, that of building up confidence in herself by her success and gave her a feeling of superiority when she succeeded better than most of the other members of her group. This was the major value of this work. *But* for her the experience was not as worth while as many others which would have been as satisfying in building up self-confidence. On the other hand, if she had been planning either a vocation or an avocation in which she knew she would need these knowledges and skills, the situation would have been entirely different.

A unit on communication may lead to special interest in the radio. Radios may be constructed on the side, and techniques learned and interests developed concerning them. Here the material concerning one of the most prominent factors in present-day life from several angles is in itself valuable for the child.

It is well for the teacher to keep this in mind and encourage the development of interest in the intermediate steps of a project when that material or skill is itself worth while. If she emphasizes the acquisition of knowledge and power for a definite purpose where it will be used, it makes for a healthier mental attitude toward learning. Do not misunderstand. All learnings should not necessarily lead to some practical end or a vocation, but should fulfill some one or more of the purposes in educa-

tion. Other things being equal they should be the most valuable for that purpose. If they are to be cultural they should be among the most useful to attain that end. Since the cultural value of mathematics as this girl studied it was meager indeed, it would have been much more valuable for her to have spent that time and energy on literature, art, or music; cooking, sewing, or embroidery; or any number of other things in which she could have been led to develop an interest.

II. HOW TO MAKE USE OF EXISTING INTERESTS

Deepen and broaden interests. When a teacher contacts a group of children for the first time for that school year, she finds that certain children already have certain real interests either incipient or more or less well developed. The higher the grade, the more this is true. It may possibly make a difference in the selection of an area or unit of work. It should make a difference in the way it works out.

Since interests are largely based on experience, it is every teacher's job to develop and broaden interests in all the children. Besides this, however, the teacher should deepen those interests already present providing, of course, that these interests are educative and valuable. Certain children are interested in one or more of the scientific fields, some in mechanics and the handling of tools, some in reading in various interest areas. These present interests may be used as a means of developing other interests. The child may see the relationship to other broader factors or he may find certain facts or techniques necessary in the furthering of his original interest. At the same time that this broadening is taking place, his original interest is also deepening and is on the way to being a very significant factor in the child's integration and adjustment.

How can we find children's already developing interests? The things children have come to be interested in may best be located incidentally. A direct questionnaire may be helpful in some cases but definitely misleading in others. Children of elementary-school age are not old enough to be introspective. The most valid and valuable technique of direct investigation is the paired comparison. Here the child is asked a series of questions such as:

Would you rather play baseball or read about the game?
Would you rather have a chemical set or a set of tools?
Would you rather read a story or read about something that really happened a long time ago?

Frutchey[6] used this technique with considerable success when children's interests were studied both by this method and by case studies. The results were very close.

[6] F. P. Frutchey, "Collecting Evidences of Children's Preferences," *Educational Research Bulletin*, Vol. 14, October 16, 1935, pp. 173-178. For technical advice on con-

An Interest Inventory for Elementary Grades [7] has been published which has received varied comment. It consists of 250 items on such things as movies, radio, things to read, games and toys, hobbies, things to own, school subjects, people, occupations, and activities. It asks the child to respond by Like, Indifferent, Dislike or Unknown to each item. The inventory is variously described [8] as promising, and as being of constructive philosophy, and of questionable validity. The weighting of the items hardly seems justified on the basis of the data used. The test is scored to measure normalcy of interests of boys and of girls in each grade. The maturity of interests in each area would be a more valid and useful type of score.

The simplest and most valuable method from many angles is that of observation and recording. Anecdotal records are being kept more and more. As free activity and incidental questions and remarks may indicate a lively interest already established, they should be recorded. If this is done conscientiously and consistently, there ought to be some pertinent information on most children by the middle elementary grades. Reading interests are particularly valuable and relatively easy to obtain. A list of children's unsupervised reading is very illuminating at times. This is discussed at greater length in Chapter 10. The more records of this type that are available for each child, the more chance there is of understanding him and helping him in his development of an integrated and well-adjusted personality.

Teachers should recognize, however, that these interests have developed largely because of the type of experience a child has had along that particular line. If it fills a need of his, either directly or indirectly by giving him satisfaction of attention or approval he does not otherwise obtain; if the family's interests are such that the child gets favorable recognition from them; if his experience with it has been successful and satisfying; if it presents a challenge, a problem which he is able to solve without too much difficulty; if he feels its relationship to himself or his needs, it will probably have developed into an interest. These are worth preserving and deepening if the field of the interest is valuable and educative. However, it does not relieve the teacher of her very important job of developing more and broader interests whether the child seems to have already developed interests or not.

What general areas of interests are apt to be found at various levels? Each child's interests are as individual as any other factor in his make-up.

---

structing such an instrument, see Vivian Weedon, "A Technique for Determining Interest," *Educational Research Bulletin*, Vol. 13, November 14, December 12, 1934, pp. 191-197, 231-234.

[7] George Washington University Series, Grades IV-VI, 1941, Center for Psychological Service, George Washington University.

[8] Oscar Buros, ed., *The Third Mental Measurements Yearbook* (New Brunswick, Rutgers University Press, 1949), 1017 pp.

However, as there is a certain general trend in all growth so is there in the growth of interests. A child's interests are largely dependent on his experiences. In detail these experiences have been vastly different. In general they have been very similar. Especially is this true when we think of experiences, not as things that happen in the child's environment but rather the things the child reacts to in his environment.

Maturity enters the picture to modify all experience. When a child enters school he is mainly interested in himself, his activities, his thoughts, his contacts. He is egocentric as opposed to social. He is interested in facts to a certain extent, but his own thinking is done largely with the help of his imagination. By the time he is eight, he has acquired a sufficient factual background so that realities are beginning to be of vital interest to him.

At five or six his environment consisted very largely of his home and parents and a small immediate neighborhood. It is not until he has become thoroughly acquainted here and then ventured farther afield and contacted the wider environment that this can begin to take on meaning for him. When it becomes familiar territory, he then can recognize its relation to himself, and it becomes interesting.

At first he is only interested in things as they affect or contact his own life and activities. At about the time he begins to be weaned from the home, he joins a "gang," and their interests become his. Gradually this horizon widens, and his actions and desires become more socialized. He does not become really interested in purely social problems until middle or late adolescence, far out of elementary school.

Children's questions. Whenever interests are discussed, one of the topics that is sure to arise is that of children's questions. "If we are to teach according to children's interests, let us find what they are interested in." "If we are to have a child-centered curriculum, we must find out what the child wants to know." And so there is another request for a list of "what-do-you-want-to-know's" and "what-are-you-interested-in's." Several years ago the literature was full of lists of items in which children had expressed interest. They included out-of-school as well as in-school factors, were rather limited in scope considering the large number of children who answered and aside from that there was little of the unexpected. Any good teacher with a practical as well as theoretical knowledge of child psychology could have done as well in much less time.

Then the articles took on a different trend. Fitzpatrick has done considerable work on children's interests in science. After several years of study he writes the following: [9]

> In legal circles it has long been recognized that the testimony of eyewitnesses is likely to be in conflict, even when individuals are making an honest effort to detail the facts. Some educators, however, appear to have abiding faith that

[9] F. L. Fitzpatrick, "Pupil Testimony Concerning Their Science Interests," *Teachers College Record*, Vol. 38, February, 1937, pp. 381-388.

casual pupil testimony is well considered—that it mirrors exactly the psychological complex from which it comes, and that it can be interpreted accurately by another individual.

Such naïve credulity has no place in a science of education. There is ample evidence from analyses of this study that a good deal of the testimony obtained in such manner does not represent studied decisions in the case of many individuals.

Taken as a whole, the bulk of pupil (student) testimony gave evidence of being *unstable, inconsistent, ill considered, and unreliable.*

Dale [10] finds that in health education children are interested in many things they do not ask about. This goes back to the very logical argument that *children cannot ask questions about things they are not aware of.* To expect to build a curriculum around a set of children's questions would result in a very meager program. We may be curious about things of which we have heard and understand little, but we can be interested only in the things we know about.

In the last ten years there have been very few studies which listed children's questions or asked children to list their interests. The following two studies are more representative of the present point of view. Von Qualen and Kambly studied "Children's Interests in Science as Indicated by Choices of Reading Materials." [11] Holmes studied "Interests of Kindergarten Children," [12] by questionnaires to mothers and interviews and observations for three months. She found that girls were said to prefer as first, second, and third choice, crayons, paint, and the doll corner. By observation they preferred crayons, scissors and paste, and the doll corner. Boys were said to prefer work bench, blocks, and crayons. By observation they preferred blocks, crayons, and work bench. The discrepancies are not great, and the reasons for them can only be guessed at. Both boys and girls preferred active games, classic childhood stories, and songs about animals and people. Boys prefer active interests more often than girls but also enjoy quiet activity. No sex lines should be drawn in availability of material or in suggestions for use. Girls should use hammer and nails and boys play with dolls, and they will unless adult comments interfere.

Values to children of interest questionnaires. There are values in having children ask questions about material to be included in a course or a unit. The first value is in introducing the material. Through the children's questions the purpose of the material can be established, and they can recognize and come to accept its value.

The second value of such questions is to help in rounding out the material. Dale [13] also found that health experts do not agree very well

[10] Edgar Dale, "Children's Questions as a Source of Curriculum Material," *Educational Research Bulletin,* Vol. 16, March 17, 1937, pp. 57-66.

[11] Vivian D. Von Qualen and Paul E. Kambly, *School Science and Mathematics,* Vol. 45, December, 1915, pp. 798-806. Also see science interests studies reported in Chapter 12.

[12] Anne Mary Holmes, *School Board Journal,* Vol. 111, August, 1945, p. 52.

[13] *Op. cit.*

with eighth-grade students as to what is interesting as evidenced by their questions. Without such questions many things that perhaps should be included in the course or unit would not have been. This not only makes the course itself more valuable but helps the pupils to recognize that the material is vital and purposeful. On the other hand, material should not be dropped just because pupils do not express an interest in it at the beginning of the unit. This might be a reason for a critical evaluation of the material, but it must be considered on the same bases on which any material is selected.

A third value in children's questions is that they may help to organize the child's thinking. This type of question should probably come near the end of a unit. If a child is to ask an intelligent question, he must first organize the knowledge he does have in order to recognize the gaps.

Teachers should then have pupils ask questions in the following ways if they are to be of the most value. At the beginning of a unit, the children ask questions they would like to have answered in the unit. This identifies the pupil with the purpose of the material and helps to insure his interest. During the unit at various times pupils should be encouraged to ask questions about things they want to know and which have not been brought out. This makes a more meaningful presentation as well as further identifying the work with the individual pupil's interest. Near the end of the unit pupils should ask such questions as will help them in summarizing and organizing the things they already know. This is an ideal situation for getting across points that have been missed before, as well as a final chance at including valuable material so far omitted.

Value to teacher of children's questionnaires. There is one most important value to the teacher in the student questionnaires of activities and interests. By giving a well-worked-out questionnaire to her pupils the teacher has a good beginning in knowing her individual children. She may give a paired-comparisons test or simply ask for replies to certain questions, such as "What do you like most to do after school? In the evening? On Saturdays and Sundays? What would you hate most to give up or do without?" These will give her at least a start from which to build an acquaintance with each and every child.

The teacher must realize that no great new truths will thus be discovered, nor must she depend too greatly on the validity or the permanency of the interests so expressed. Many interests which the children will report at this level, as well as any other, are of the "enthusiasms" type and are gone as quickly as they came. Some are real and permanent interests, and the teacher's job in learning about her pupils has just begun when she has the results of such studies. They also bring her a rather clear picture of the things that appeal to children and of the types of interests as well as enthusiasms which children of that age are apt to have. After all, this knowledge of pupils is indispensable if she is to teach effectively and meaningfully.

Preferences and achievements. Pupils are supposed to do better in those activities which they like. Many studies have been carried on concerning this question, particularly in the high school. Dunlap [14] tested preferences for items in the elementary curriculum. He gave achievement and mental tests and found nearly as high a correlation between preferences and achievement as between mental ability and achievement.

The difficulty here is that the tests were all given at the same time, after the material had been taught. By his preferences he measured the things that had been made meaningful to the students and they had thus learned, and the items they had learned and were thus interested in. There is no doubt that interest and achievement go together, but in the general field on the elementary level it is still doubtful if prior preferences have much to do with learning in a good teaching situation.

In a study in the junior high school, Bowman [15] found with respect to problem-solving, preferences are not permanent and inherent qualities, but are somewhat dependent upon estimated ability resulting from experience with the respective situations involved.

Children's wishes. Boynton [16] studied children's wishes at the elementary level. He writes as follows:

> Children's wishes, or fundamental interests, cannot be explained satisfactorily in terms of group causes or affiliations. These wishes are not just the product of maturity; they are not the results of scholastic classification; they are not attendant upon sex membership as a rule; they are not the outgrowth of economic sufficiency or impoverishment *per se*. In truth, it would seem that the child's wishes must go back to the particular experiences through which he as an individual child has passed.

There are several implications to be drawn from this point of view. First it reëmphasizes the fact that every child is an individual, different from every other child. But particularly important to this discussion is the fact that interest depends upon experience. The school is in the position of giving the best controlled, the broadest, and most varied experience at this level for the average child. Again we see it is the school's opportunity to develop interests through the vital experiences of the curriculum.

Special interests. Aside from interest in general subject-matter, study has been made of interests in specifics such as pictures. Considerable has been done along this line, and one study [17] is rather typical of the results found. Children in grades I, III, and V prefer color to black and white,

[14] Jack Dunlap, "Preferences as Indicators of Specific Academic Achievement," *Journal of Educational Psychology*, Vol. 26, September, 1935, pp. 411-415.

[15] Herbert Lloyd Bowman, "Relation of Reported Preferences to Performance in Problem Solving," *University of Missouri Bulletin*, Vol. 30, No. 36 (September 21, 1929).

[16] Paul L. Boynton, "The Wishes of Elementary School Children," *Peabody Journal of Education*, Vol. 13, January, 1936, pp. 165-171.

[17] Bonnie E. Mellinger, *Children's Interests in Pictures*, Contributions to Education, No. 516 (New York, Teachers College, Columbia University, 1932).

and usually prefer realistic pictures to conventional. In the first grade there was more tendency to the conventional and to the two color than in the other two grades, although the balance was still the other way.

When these findings are considered in relation to what we know about children's interests, the results could have been predicted beforehand. Children prefer what is true to life, within their experience. With the younger children they have not yet become aware of all the details and the general impression of the conventionalized picture was somewhat more acceptable. The closer the likeness is to reality, the more nearly the colors are reproduced, the better they like it. It isn't until the finer interpretations of the artist express feelings within their experience that they can interpret and appreciate them.

The value of picture-choices tests in the classroom is to determine the extent that picture experiences actively directed by the teacher have increased children's appreciation. In any work of this kind the pictures must be carefully selected.

Children's preferences for conversational topics are another subject of investigation.[18] Again we find the preferences among those things which are most immediately within their experience. Their unique experiences, experiences of their families and friends, and trips are the favorites. With young children there is a greater variety, and the topics are more general. As they grow older, they concentrate on fewer topics.

There seem to be several reasons for this. As the child grows older, more of the everyday factors in his environment take on the monotony of routine and cease to have interest as they do to the younger child to whom they are still new. It may also be somewhat of a condemnation of our schools that they stifle rather than increase interests. If a child's interest was really aroused in all the varied activities the school could offer, there might not be such a drop in interests.

Real and basic interest. Real interest then is self-motivated activity that takes place when a person has an active purpose of his own, sees the steps necessary to attain it, and finds those steps as well as the final aim largely within his experience, power, and needs. In other words the child must have a goal, see the vital relationships in the steps leading to that goal, and be free and able to accomplish them.

In the first place, the child should accept the goal and will do so if he can feel that it is vital and is his. The greater his part in setting up that goal and planning ways of reaching it, the more it will be his own. In order that he may do this, the goal must have its basis in his own experience. He must feel that he can succeed in attaining it, that it is within his powers but difficult enough to be challenging to them. And if possible he must recognize his own need for such experiences, realize that they will be personally helpful.

[18] Mildred A. Dawson, "Children's Preferences for Conversational Topics," *Elementary School Journal*, Vol. 37, February, 1937, pp. 129-137.

Once having accepted this goal in any unit or problem, the development of it brings intermediate steps which become interesting as their relationship is seen to the ultimate interest.

This interest then becomes the effort which is put forth to solve each problem in the process of reaching the main goal. When this is the situation, effort is not doing essential but uninteresting things. Instead, it is coöperation and understanding in carrying out the activities most significant and most interesting to oneself.

The teacher does not have to "make things interesting." The teacher, by showing the relationships involved, leads the child to develop real interest.

Suggested Learning Experiences

1. Consider the work in an elementary classroom over a period of time. To what extent did it utilize children's basic interest?
2. To what extent was it suited to the experience, power, and needs of the individual pupils in the room?
3. What evidences, if any, were there of the exploitation of what Dewey terms "false interest"?
4. Develop a list of twenty questions of the paired-comparison type which you think should distinguish between various interests of the more permanent type. Give the questionnaire to a class. Make analysis for all pupils and check your finding for certain particular pupils in all ways which may seem valuable. Which indicated interests do not seem real? Which interests which are real are not indicated?
5. Write a brief summary of the chapter. This should include the most important points made in the chapter.
6. Make a survey of the reading interests of a class. Suggestions for improving the reading of individuals can be made in connection with the study of Chapter 10.
7. Reading interests are discussed in Chapter 10. One member of the group should present an oral summary of that material as it is related to the present chapter.
8. To what extent should a survey of science interests contribute to the curriculum in elementary science?

Selected References

Armstrong, W. E., "Implications of the Doctrine of Interest for Curriculum Development," *California Journal of Secondary Education*, Vol. 11, December, 1936, pp. 502-505. Distinguishes between fundamental pupil interest and teacher motivation and the implications for the curriculum valuable on any level.

Baker, Emily V., *Children's Questions and Their Implications for Planning the Curriculum* (New York, Bureau of Publications, Teachers College, Columbia University, 1945), 172 pp. A further study of the use of children's interests as indicated by their questions.

Boynton, Paul L., *Psychology of Child Development* (Minneapolis, Minn., Educational Publishers, Inc., 1938), Ch. IX. Discusses many of the more important studies of children's interests.

Children's Interests; Elementary School Level. Twelfth Yearbook of the California Elementary School Principal's Ass'n, May, 1940, 154 pp. Deals with the general interests of children as well as those in the fields of arithmetic, reading, social studies and science, rhythmic expression, and radio.

DALE, Edgar, "Children's Questions as a Source of Curriculum Material," *Educational Research Bulletin,* Vol. 16, March 17, 1937, pp. 57-66. Reviews and criticizes studies of children's questions.

DAWSON, Mildred A., "Children's Preferences for Conversational Topics," *Elementary School Journal,* Vol. 37, February, 1937, pp. 429-437. They want to talk about things which make up their immediate environment, which are their own experiences or those of their immediate family or friends.

DEWEY, John, *Interest and Effort in Education* (Boston, Houghton Mifflin Company, 1913). A basic discussion for the consideration of interest.

FITZPATRICK, Frederick L., *Science Interests* (New York, Teachers College, Columbia University, 1936). Studies the worth of pupil testimony in determining science interests and finds it inadequate.

FRYER, Douglas, *The Measurement of Interests* (New York, Henry Holt & Company, Inc., 1931). A very comprehensive treatment of the measurement of interests, the techniques, and the results, with sections on the use of interests in adjustment.

Health Interests of Children (Denver, Public Schools, 1947). A research study conducted in the Denver public schools.

JERSILD, Arthur Thomas, and TASCH, R. J., *Children's Interests and What They Suggest for Education* (New York, Bureau of Publications, Teachers College, Columbia University, 1949), 173 pp. Done in collaboration with teachers of the public schools.

KILPATRICK, William Heard, *Foundations of Method* (New York, The Macmillan Company, 1925). The whole book is valuable on this problem, but pp. 136-216 are especially helpful.

MORTON, John A., "A Study of Children's Mathematical Interest, Questions as a Clue to Grade Placement of Arithmetic Topics," *Journal of Education Psychology,* Vol. 37, May, 1946, pp. 293-315. Studied children's interests in grades I-VIII, with some rather significant findings from which implications may be drawn.

MURSELL, James L., "Progressive Education, Is it Through?" *Progressive Education,* Vol. 23, May, 1946, pp. 218-251. "Interest is the only satisfactory motive for work."

PATRICK, Catherine, "Relation of Childhood and Adult Leisure Activities," *Journal of Social Psychology,* Vol. 21, February, 1945, pp. 65-79. Shows relationship in several areas.

SYMONDS, Percival M., *Mental Hygiene of the School Child* (New York, The Macmillan Company, 1934), Ch. IV. Discusses and gives illustrations of specific drives which may be found in children.

THORPE, Louis P., *Child Psychology and Development* (New York, Ronald Press Company, 1946), pp. 609-625. Discusses interests in relation to socialization.

VOLBERDING, E., "Out-of-School Behavior of Eleven-Year-Olds," *Elementary School Journal,* Vol. 48, April, 1948, pp. 432-441. Recreational habits and preferences of eighty children's out-of-school living are described.

VONQUALEN, Vivian D., and KAMBLY, Paul E., "Children's Interests in Science as Indicated by Choices of Reading Materials," *School Science and Mathematics,* Vol. 45, December, 1945, pp. 798-806. A review of the research on interests in science and a presentation of their own.

Wilmington Public Schools, *Cooperative Curriculum Development* (1935), pp. 93-99. Summary of a one-year study of pupils' interests.

5

The Child As a Learner

I. SOME BASIC CONCEPTS

Teaching vs. learning. One of the basic assumptions has always been that in school we teach and the child learns. We have always assumed that he learned what we taught and little else. How true is this?

Let us look at a fourth grade reading class. Each child has a copy of the same book. In the lower grades there had been reading groups with different books for each, but by this time the teacher thought they should all read this book if they were going to be able to read their geographies and histories. They were taking turns around the room, each reading a paragraph. Suzy had just read her paragraph well and now it was Tommy's turn. He took a deep breath and plunged in but misread a word, and the teacher interrupted to correct it. In the middle of the next sentence was a word he didn't know at all. "Tommy didn't study his lesson. I am sure any one of you can tell him what the word is." There was a chorus from the group and Tommy, red-faced and unhappy, made more and more mistakes until he could finally sit down at the end of his turn. Next time he would be more upset when his turn came around. He had learned to dislike reading a little bit more, and the words he had been told had been totally swallowed up by his embarrassment. He didn't think that he liked school much anyway.

Next came Nancy's turn. She had found that she could read better than anyone else in the class so she stood up with a little supercilious shrug and read her selection in a tone which clearly said, "See how well I read. None of you can read this well." She could have been reading much more advanced material, but she had been reading from a book one day and the teacher had had to tell her a word. If she were to keep her reputation, that must not happen again, so she was careful of the books she selected after that. As Nancy finished her turn the teacher beamed and Nancy learned over again how satisfying it was as long as she was careful to read only easy material.

Now, Robert's turn came. In getting up he bumped his table and knocked over his chair. The teacher said, "Well Robert, can't you even stand up without knocking everything over." To cover his embarrassment, he grinned and looked around at the other boys. Some of them had previously found themselves in the same "spot" and partly in sympathy and partly in remembrance of their chagrin they burst out laughing. This

took the teacher's attention from Robert to them and he was able to reorganize himself and the furniture to the point where he could read his selection. He did not do it as well as usual, however, and, upset by the whole situation, the teacher commented caustically. Robert, looking around out of the corner of his eye, saw amused and approving looks on the faces of some of the boys. At recess, these boys whom Robert had tried to make friends with before quite unsuccessfully now surrounded him. "Gee, that chair sure made a bang! Thought it was going to break up!" "Did you ever get her mad!" "Boy, that was funny when she blew up!" and so on until they began their ball game and he was invited to be "first up." Robert had probably learned more than anyone that morning. Little if any reading had been learned by anyone.

What had caused everything to go so wrong? First the teacher was not aware of or was not using what is known about learning. Some of these principles that she did not heed are that children learn what is satisfying to them, makes them happier, and fulfills their needs; that they learn best when taken on from where they are so that they are learning according to their abilities; and perhaps most important, that children learn all sorts of things which the teacher never intended that they should.

Educability. What children are educable and to what extent? Again it depends on what our criterion is. Do we mean which children in a typical school room with a subject-matter centered program, taught in terms of middle-class concepts and vocabulary, are going to "do well" when measured by subject-matter standards?

Tyler puts it this way: "Given our present American Schools, with the ends they accept and the means which they provide, what measurable characteristics of persons can be used to predict the extent to which these persons will do successful work in schools?" [1]

He goes on to indicate that we have been predicting and evaluating all children's educability against traditional school success. Any interest or ability which is not called for in the "curriculum" has no "value" and is no concern of the teachers. Both teachers and texts are geared to the interests, vocabularies, and concepts of the middle-class children. The needs of the upper and lower classes are not met and the lower class is considerably handicapped. Since to a greater or lesser degree these children "speak a different language" than their teachers, there is great need of much more non-verbal communication.

Another criterion? Or coming back to our discussion of educability, we might ask the question as Tyler does. "What measurable characteristics of persons can be identified that reveal abilities which can be developed into socially or personally valuable behavior if school programs are planned and administered to capitalize on these abilities?" [2]

[1] Ralph W. Tyler, "Educability and the Schools," *Elementary School Journal,* Vol. 49, December, 1948, pp. 200-212.

[2] *Ibid.*

If we ask the question this way it makes a tremendous difference both in what we expect children to learn and how we go about helping them to learn it.

Let us consider then the idea that an educated person is "one who is able to analyze problems, to think them through clearly, and to bring to bear on them a wide variety of information, who understands and cherishes significant and desirable social and personal values, who can formulate and carry out a plan of action in the light of his knowledge and values." [3] There are few thoughtful people who would not agree with this description, yet in most cases it is not the goal toward which schools and colleges are aiming *in practice.*

The following sections will consider implications of this concept of an educated person and how it affects both the *what* and the *how* of learning.

II. LEARNING FOR A DEMOCRACY

Different kinds of learning for different social orders. One might ask what possible connection there is, but the answer is rather clear. Let us think about the kind of learning a dictator would plan. He would want children to learn facts, selected by himself or his hirelings. He would want children to learn them by memorization, rote learning. He would not want any pupil-planning or problem solving, for they might get hold of the "wrong" facts. And pupils would never be allowed to think for themselves. They might not come to the same conclusion. The conditioned reaction would be the only acceptable theory of learning. Certain desired reactions would be set up and the children "conditioned" so that they would need to do no thinking, just inevitably react as they had been taught. The teacher would do all the thinking and planning for them. Children should not be encouraged to express themselves openly in groups, for such might lead to uprising and rebellion. The individual means nothing, the state everything; so no attention is paid to individual differences, interests, needs or abilities. Discipline would be in terms of instant obedience with no recourse to a higher authority. It is enough that the teacher says they must. We hate to admit it, but some of our schools are doing an excellent job of training for a dictatorship and many more are too close to it for comfort.

How, then, should we train for a democracy? The essence of a democracy is that it shall be based on *the expressed will of the majority.* There are a number of implications. Let us start at the end of the definition and work forward. If we are to have a true majority, then as nearly as possible every person should take an active, intelligent part. Every person must be educated to the extent of his own special abilities.

The "will" signifies a great deal. It is something a person very much wants. But he doesn't want it because someone has told him he does. This

[3] *Ibid.*

"will" should result from independent thinking on the problem, taking into account all pertinent facts weighed on point of greatest value to the greatest number of people.

"Independent thinking on a problem" does not just happen after children are graduated and go out into life. It can and must be learned in school. Children do not learn to do independent thinking by hearing about it or watching the teacher perform. They learn to do only by doing it again and again with all sorts of problems.

If they are to take into account all pertinent facts, they need to know what these are. Some of the common basic facts they will know mostly from using them in solving certain of their problems. They could not possibly know all the pertinent facts and should not; partly because all the facts they would ever need would be far too large an order for anyone, because many of the facts will be needed only on rare occasions, and because many of the facts will only come to be known long after the children are out of school. It is much more important for them to learn how and where to go to find the needed information, and how to judge as to its pertinency and adequacy.

The grounds on which children make their final decision is perhaps most important of all and calls for a type of learning in the schools which is difficult to find. Little children are essentially self-centered simply because they have had little time for experience in, or limited opportunity to learn, socialization. They want what they want for themselves without even thinking about the other person. Gradually they learn that sharing, and in general contributing, to the good of others brings greater compensations than the "me first" policy. Some people never learn this, and our highly competitive activities in most schools only contribute to the selfish rather than the socialized point of view.

Group activity, where each individual's efforts are bent toward the good of the group, contributes to this greater socialization. Elimination as far as possible (and that is pretty far) of individual competition aids this concept besides increasing other learning. Teachers may say "but that is the only way some children will learn anything." Here they are mistaken. "Learning under these circumstances is not real learning but temporary memorization. Their attention is on getting ahead of someone and not on what they are learning."

Coming back to our definition of the essence of a democracy, we still must consider the term "expressed." The will of the people means little unless it becomes known. There are two major ways in which a citizen can and should express himself. One is by voting and the other is in public gatherings where questions of public concern are discussed. The first only requires a sense of responsibility, and this can and should be one of the important learnings in school. The other requires an ability and a willingness to stand on one's feet in a group and express one's ideas clearly and convincingly. Here the schools are doing much better than

they were but still have a long way to go. The schools in whose rooms "keep still unless you are called on to recite" is the day-long watchword are preparing more for dictatorship than a democracy.

Living democratically. It has been said many times that the only way to learn how to live democratically is to practice doing just that. If children can come through six to twelve years of school which have provided daily experiences along the lines suggested above we need not be concerned over these learnings nor over the State of our Nation.

The contribution of the newer education. Educators have been working toward the goals of the new education for the last twenty or thirty years. In 1919 Dewey wrote his *Democracy and Education*, which was one of the books which gave impetus to the whole idea. Since then it has been called the project method, the activity program, progressive education, modern education, and various names; but all have been heading, in general, toward the same goals, with a few unfortunate offshoots getting lost on the way. In most cases its proponents believed in the philosophy because of its value to the child from every standpoint. Recently we have all become aware again of its tremendous implications for democracy. One needs only to read over the "Differences Between Old and New Procedures" on page 205 to see them immediately. There had been a continual stream of research as each community or school or teacher proved over again the effectiveness of the new way. Lippett, working with Lewin, showed that in a democratic group there was a better sense of coöperative work toward a common goal, and that the children wanted to share with each other their materials and their products with no wrangling and ultimate destruction, as occurred in the autocratic groups.[4]

In another situation there was observation of children who had been working in both situations. They found that when going on excursions the activity group behaved better en route, behaved better toward adults, and needed less rigid control at the trip's destination.[5] They also found that the classes showed more student chairmanship, more productive work in writing, art, etc., more semi-independent and independent activity, more giving and taking of help, and more communication between pupils.[6] And despite what many teachers of the old school may think, this last is good! As Hopkins puts it, in order to create an atmosphere for learning one of the essentials is to "give each pupil freedom to talk: to express what's going on inside him; to show his sentiments; to try out his thinking." [7]

In studying the preferences of children in types of assignments, Stewart

[4] See page 111.

[5] Robert L. Thorndike, John J. Loftus, and Bernard Goldman, "Observation of Excursions in Activity and Control Schools," *Journal of Experimental Education*, Vol. 10, December, 1941, pp. 146-149.

[6] *Ibid.*, pp. 138-145.

[7] L. Thomas Hopkins, "Atmosphere for Learning," *Teachers College Record*, Vol. 46 November, 1944, pp. 99-105.

approaches the same problem from a little different angle. She found that children in grades four to six prefer multiple textbooks, working in groups or with a partner, and self-direction in finding material. When teaching was set up on this basis of solving a problem as a group from whatever materials they could find, she found interesting results. There was more interest, more democratic living, more provision for individual differences, more critical thinking, and more respect for the contributions of others.[8]

These studies, chosen at random, could be multiplied many times and show that in practice as well as in theory modern education develops the attitudes and characteristics which are desirable and necessary for a democracy.

Discipline in a democracy. It is imperative that we examine just what we mean by discipline and just what kind we want. For discipline by one implication means control, and the basis of control is the basis of any government. As mentioned above, a dictator would insist on instant obedience to the one in authority, for that would best suit his purpose. That is definitely *not* the type of discipline we wish to use in a democracy.

What is the basis of control in a democracy? It is a known, understood, and recognized body of law which has been established by the will of the majority and administered by those elected to do this, directly or indirectly, by the majority. Then pupils must learn first to respect the will of the majority. They must know, and understand the rules which the majority has established. They must learn to recognize the authority of the person who is administering these rules, not as a person with authority of his own but with the authority of the job to which he has been elected. In a democracy, the laws may be changed by duly constituted means when the majority wishes, but are obeyed as they stand until such time as they are changed. Thus a child learns to respect the rules but knows that he has the right to suggest change whenever he feels it desirable and have his suggestion acted upon by the group.

What then is the place of school "authorities"? They are the people with the authority of the job to which they have been elected. They must carry out the laws which have been established in their state and community. But what about the rules of the school and classroom? In a democracy they would be established by the teachers and youngsters together, by vote or by common consent. The teachers, however, are experts in both training and experience and they can furnish valuable help in the form of suggestions or bringing pertinent previous experience. This is comparable to the technical experts who advise members of the legislative bodies. Their suggestions are listened to with respect and taken into consideration, but need not be followed, although they usually are. Just so in school, there should be no feeling of compulsion to establish rules of

[8] Dorothy H. Stewart, "Children's Preferences in Types of Assignments," *Elementary School Journal*, Vol. 17, October, 1916, pp. 93-97.

procedure according to the suggestion of the teacher. (The less feeling of compulsion there is, the more apt the children are really to accept it as their own.) If the children decide against the best judgment of the teacher, they will have a chance to try out their ideas. These may work or they may not. If they do, the teacher should be open-minded enough to recognize it. She can provide an excellent object lesson in changing her opinions gracefully when there is adequate reason for doing so. If they do not work, the majority will be ready and willing to make the necessary changes. The teacher can be alert to helping the proponents of the first plan recognize the reasons why their plan did not work, and help them accept the change without loss of status.

What learnings develop in such a situation? More than can be counted! The more easily recognized ones are a sense of responsibility for the welfare of the group, coöperative planning, experience in thinking through a problem and testing out the effectiveness of their thinking, experience in getting "trained and expert" opinion and using it to help solve problems, a feeling of responsibility for making their decisions work, and many, many more.

Opinions on control. Many educators have commented on discipline in a democracy. Some of the more significant are summarized here. Democratic living should provide freedom with the discretion that arises from responsibility. "Authority in a democracy must never in any relation be based upon fear or self-abnegation. It must rather be accepted as a benevolent superiority aiming at the benefit of the individual and the group as a whole." [9]

What is usually spoken of as "good order" in the schoolroom is "outward conformity to regulations when demanded." Far better is "creative control, which develops an inner instinct for order and efficiency that manifests itself when not checked on." [10] In other words a teacher cannot feel that she has achieved order if the children's behavior is different when she is there than when she is out of the room.

Along the same line we read "Internal discipline is of great concern to the progressive educator, for this is the stuff of which maturity is made. It can exist only when the student has an objective which is important to him and which he works hard to obtain." [11]

Research on control. Several studies have shown that dominative behavior begets dominative behavior and integrative begets integrative, whether it be on the part of the teacher or another child.[12]

[9] S. R. Slavson, "A Plan for Group Education in the Elementary School," *Journal of Educational Sociology*, Vol. 13, May, 1940, p. 551.

[10] Frank M. Rich, "What is Good Order?" *Journal of Education*, Vol. 126, November, 1943, pp. 250-252.

[11] Constance Warren, "Discipline for Democracy," *Progressive Education*, Vol. 23, January, 1946, pp. 114-117.

[12] Harold H. Anderson, "Educational Implications of Research in Dominative and Socially Integrative Behavior," *Journal of Educational Sociology*, Vol. 13, April, 1940, pp. 490-501.

Frustration has many times been shown to cause regression and increase other emotional problems as well. It seems to have its most severe results when the child had been under strict discipline, where teachers or parents were always right. The least harmful results came where there was self-discipline and emotional maturity.[13]

Whelan gives a series of instances at different levels which show that a "discipline problem" can lead to social growth through coöperation.[14]

Criteria of control. Another author has summarized objective criteria of control as follows:

1. Under democratic control children resist unacceptable emotions or impulses from within.
2. They resist unacceptable coercions and forces from without.
3. They show independence and initiative in judgment and conduct.
4. They have the ability to take responsibility and manage others, and initiate a course of action.
5. They have a relatively long time perspective with the ability to plan and look ahead.
6. They demonstrate persistence of intention.
7. They are objective and insightful, and can resolve inner conflicts.
8. They have strength to recognize the inevitable.
9. They maintain their self-respect.[15]

"Breeding confidence in one's own ability to discriminate and explore without conforming to a prescribed range or outline of material is probably one of the most important responsibilities of education if it is to fortify men against the threat of despotism." [16]

What is the place of guidance? In the elementary school particularly, guidance and good teaching are for all intents and purposes synonymous. "Guidance may be broadly defined as any planned experience or contact with individuals for the purpose of helping them to develop in certain directions."[17]

We get considerable help and direction for our learning situation from this source. Fedder has outlined some conditions essential to a guidance program which could just as well have been labeled essential for effective learning. They are:

1. Small classes in which individual instruction will be possible.
2. A plan of school organization in which children are known as individuals from nursery school on throughout their school experience.

[13] Harold G. Seashore and Alex Bavelas, "A Study of Frustration in Children," *Journal of Genetic Psychology*, Vol. 61, December, 1942, pp. 279-314.

[14] Dorothy Clement Whelan, "Coöperation in the Classroom," *Journal of Educational Sociology*, Vol. 13, May, 1940, pp. 538-545.

[15] Robert H. Dalton, "Developing Control for Democratic Living," *Journal of Home Economics*, Vol. 39, January, 1947, pp. 1-4.

[16] Kenneth H. Herrold, "Teachership as Leadership," *Teachers College Record*, Vol. 48, May, 1947, pp. 515-521.

[17] Ethel Kawin, "Guidance for Living," *Educational Leadership*, Vol. 3, May, 1946, pp. 360-363.

3. Emphasis in teacher training on understanding children versus subject matter and teaching methods, and on techniques of guidance, particularly the significance of observation and group play.
4. Cumulative records giving such a complete picture of a child that there can be, in actuality, progression in his experience.
5. Narrative reports instead of grades.
6. Recognition of the importance of group experience in social and emotional adjustment.
7. Grouping by social and physical maturity rather than by chronological age alone.
8. Coördination of each school level with that above and below.
9. In-service training of all teachers to increase their understanding of boys and girls.[18]

Do school pressures create delinquency? One very clear indication that the schools have not been meeting the needs of all the children is the number of truants. Practically every truant stands as a living accusation that his school and his teacher have failed to meet his needs. Certain studies may shock us into increased concern. One presents the fact that 61% of the first admissions of juvenile delinquents to corrective institutions and 78% of those who return show truancy as the first offense. The author suggested that the evidence pointed to the fact that failure to meet classroom standards of behavior in elementary schools led to truancy and thus was a cause of crime.[19]

Another study showed that 60% of delinquents expressed a dislike for school and its associations, and there was a marked falling off of delinquency when the schools closed for the summer.[20] Certainly the school was not meeting the needs of this 60% whatever other factors may have entered the picture. The fact that delinquency fell off when school closed points to the likely conclusion that when the too great pressures of school were off, they no longer felt the necessity of rebellion.

Along this line we might quote another study which found that among the hundreds of thousands of juvenile delinquents in the United States—all products of our elementary schools—specialists have found scarcely one who had a friendly and understanding adult teacher, parent, or friend—with whom he could talk things over with mutual respect, on his own terms, and without fear. He goes on to say: "We will have a vast and fundamental improvement in public education when the majority of teachers spend most of the time and effort scouting for and developing children's talents instead of looking for faults and deficiencies to repair." [21]

[18] Ruth Fedder, "Counseling Trends in Elementary and Secondary Schools," *Teachers College Record,* Vol. 46, October, 1944, pp. 17-24.

[19] Arthur C. Johnson, Jr., "Our Schools Make Criminals," *Journal of Criminal Law and Criminology,* Vol. 33, November, 1942, pp. 316-320.

[20] William C. Kvaraceus, "Delinquency—A By-Product of the School?" *School and Society,* Vol. 59, May 13, 1944, pp. 350-351.

[21] Malcolm MacLean, "Education for a New World," *California Journal of Elementary Education,* Vol. 15, February, 1947, pp. 138-151.

Human relations can be learned. Too often when we speak of learning, and particularly learning in the school, we think of facts and skills, such as reading, writing, and computation. These are really the least important of all learnings which may take place. That is, they are much less important than many others in the scheme of planning for learnings which should take place. If there is emotional and social development, and emotional health, if the attitudes and skills for democratic living are learned, then with only a little extra planning these other learnings will develop in the natural course of events. It is obvious, however, that the reverse is not true. When the major emphasis is put on facts and skills, emotional and social development happens only by coincidence, and democratic learnings rarely occur.

But emotional health can be acquired through the classroom and so can emotional ill health. They are learned by the same processes that any other learnings are. A part of the development of emotional maturity is the development of dependence into independence and interdependence. The baby is totally dependent. By the time the child comes to school he has achieved some measure of independence but is still dependent on many people for many things. If carefully guided this dependence becomes selective in healthful ways and gradually develops into interdependence. This combination of independence and interdependence is essential in any democratic society.

Experiments have shown that leadership can be modified by training and also that this behavior varies from situation to situation. Schools should change their laissez faire policy, which assumes children learn social lessons in free group play without teaching or supervision. Too little effort is expended in developing qualities and offering opportunities which will spread leadership.[22]

Bullis [23] prepared a series of thirty lessons in human relations which were used in grades six through ten. They dealt with such matters as how to get along better with one another. The youngsters would discuss a problem and indicate parallel situations from their own personal experience. He found some 15% of each class were socially unacceptable. The lessons not only helped them but improved the relations of all in the classes.

So it is up to us to evaluate the teaching and learning that is going on in our schools. Let us check to see that we are planning for the teaching of more than facts and skills, for the teaching of good attitudes and good human relations as well; and let us check to see that the children are learning what we think we are teaching them.

[22] M. L. Page, "The Modification of Ascendent Behavior in Preschool Children, *University of Iowa Studies, Child Welfare,* Vol. 12, 1936.

[23] H. Edmund Bullis, "Classes in Human Relations," *Public Health Nursing,* Vol. 39, August, 1917, pp. 390-392. The executive director of the Delaware State Society for Mental Hygiene will send data on request.

III. THE PROCESS OF LEARNING

An overview. Our understanding of the learning process has depended largely on the concepts of the "mind" and the nature of human beings. In the Middle Ages it was believed that each person was born with a fund of original knowledge, innate ideas and self-evident truths. Learning then consisted of the "drawing out" process. Pupils were questioned in such a way that they became aware of what they already knew. Learning was merely a recognition of knowledge already present.

In 1690 John Locke introduced his *tabula rasa* theory, and for the first time learning was considered a taking-in process rather than one of drawing out. The next development was the idea that since learning was derived from experience, there must be laws to explain this learning through experience. Here it was that the laws of association gained their greatest favor.

The next great step in the advance of the concept of learning came with the work of Ebbinghaus. His two main contributions were first the successful attempt to make psychological procedure scientific, and second his contribution to the measurement of memory. Both of these advances have had lasting effect. The curve of forgetting which he developed in his memory experiments in the main still stands as authentic.

Thorndike was perhaps the next to wield great influence in the study of learning. His early experimentation was done with animals which had some influence on the type of situations and the emphasis in the results. His first work proposed three laws of learning, the Law of Use, the Law of Disuse, and the Law of Effect. And although he since made radical changes in these laws, they were widely accepted and had great effect on teaching for many years. His present work has been developed by perhaps the most extensive and continuous experimentation ever carried on in the study of one phase of education. The results and his interpretations will be further discussed in a following section.

The work of Pavlov and his now-famous dog laid a basis for the theory of stimulus-response psychology and the conditioned reflex. This was developed into a system of psychology by the behaviorists, largely through the leadership of John B. Watson. The main contributions have been the emphasis on the development of reaction patterns and on the active doing, rather than the passive knowing. Behavioristic psychology is essentially a psychology of analysis, analyzing each reaction into its elements. Their exponents believe that all learning—intellectual, motor, emotional, and adjustive—is of the stimulus-response type that falls under the category of conditioned reaction.

Thorndike was the leader of the "connectionists" group, so-called because to them learning is the forming of connections. They do not stress the biological background and the mechanistic approach as do the conditioned reactionists. Their main interest is in finding situations and con-

ditions under which connections are formed and learning takes place. Two large problems occupied much of Thorndike's experimentation and writing. They are the influence of repetition, with and without belongingness, and the influence of rewards and punishment.

The Gestaltists form the latest of the major schools and are perhaps least well understood. It is now most commonly called the field theory of learning and also referred to as organismic psychology. Its proponents do not, as the others do, try to simplify all learning into one simple pattern or process. Theirs is essentially a psychology of synthesis rather than analysis. They think of learning as "insight" or understanding, not of a series of facts or details, but of a "whole" or a pattern in which the details take their logical places. They have taken a whole new vocabulary. Their educational implications are not too different from those accepted by modern educators. In fact they state a basic principle of newer education as the first of a list of twenty implications: that "learning is best motivated by goals established or accepted by the learner as a result of his needs."[24] The school had its inception and early development in Germany, led by Kurt Koffka and Wolfgang Kohler. There are many exponents in this country such as R. H. Wheeler, F. T. Perkins, R. N. Ogden, and G. W. Hartmann. Lashley's experiments on the brain seem to give a physiological basis to their theories.

Learning in terms of drive and reward. In 1941, a book came out which is of considerable importance, namely, *Social Learning and Imitation.*[25] Based on a great deal of research, it follows in general the connectionist school, and expands on Thorndike's reward and punishment theory. However, regardless of theory, it has descriptions of child behavior under various situations which are helpful. The following summary seems to include these major ideas.

Drive and reward are necessary for learning. Rewarded responses tend to be repeated and unrewarded responses tend toward extinction. When drive has become satiated by sufficient reward, the tendency to make the rewarded response is weakened. Continued reward is necessary for maintaining a habit. When undesirable behavior has been rewarded, it will be necessary to stop rewarding it, in order to get other substitute responses started in that situation. The stronger the drive or the greater the reward, the more firmly will the response be established and the greater will be the resistance to extinction. Mere repetition does not strengthen a habit. Instead non-rewarded repetitions progressively weaken the strength of the tendency to perform a habit.

Habits weakened by extinction are not destroyed but may return spontaneously. Habit disrupted by punishment is much less apt to return. The purpose of extinction is to force the child to try new responses. If these are rewarded

[24] George W. Hartmann, "The Field Theory of Learning and Its Educational Consequences," *Psychology of Learning, Forty-First Yearbook* of the National Society of the Study of Education, Part II (Bloomington, Illinois: Public School Publishing Co., 1942), p. 206.

[25] Neal Elgar Miller and John Dollard (Yale University: Institute of Human Relations, 1941), 341 pp.

their competition may completely eliminate the old habit. Whenever a desirable new response is made it is important to reward it immediately, as delayed rewards are much less effective.

Another important element in the learning process is the clue which is that part of any situation which determines what the response will be. Short cuts in learning occur when one of the earlier clues in a situation bring about the end response instead of the whole sequence being needed. This is called the anticipatory response.

Implications. If learning then depends upon the child's reacting to clues, it is important that the teacher help him to identify the significant one in all types of situations. Learning efficiency is dependent on an increasing percentage of anticipatory responses. Here it is particularly important that the response does not result from unrelated clues. If, for instance, the teacher introduces a new process in arithmetic when she is feeling annoyed and punishes a child for being restless during the explanation, the anticipatory response may mean that the child's feeling of loss of status will attach itself to the arithmetic process instead of to the restlessness.

Also, if the term "foreigner" is used in the description of an undesirable person, the undesirability may be attached to foreigner if that is rewarded; that is, if the group takes that attitude or the child feels they do, so that he gains status by believing as they do.

The real question comes when one asks what are "drives" and what constitutes a "reward." Although Miller and Dollard discuss this question, they give no very satisfactory answer. Perhaps we might interpret drives as needs—physiological, emotional, and social. The rewards then would become the satisfaction of those needs.

Learning in terms of process and product. Another author who has recently made a contribution to the understanding of the process of learning and its implications is Burton.[26] He considers the learning process to be experiencing, reacting, doing, undergoing. The process proceeds best when the numerous and varied activities are unified around a central core of purpose. The learning products are responses and controls of responses, values, understandings, attitudes, appreciations, special abilities, skills. These products accepted by the learner are those which satisfy a need, which are useful and meaningful. He lists numerous other characteristics and ends with the statement that learning proceeds more effectively under that type of teaching which guides and stimulates without dominating or coercing.[27]

A valuable approach. The main value of the above approach is that it is functional and meaningful in terms of practice. It is based on the observation and recording of what happens to youngsters under certain circumstances in a real situation. Too much of the research in learning has

[26] William H. Burton, *The Guidance of Learning Activities* (New York, Appleton-Century-Crofts, Inc., 1944), 601 pp.

[27] *Ibid.*, pp. 212-213.

been done on white rats, adults in a laboratory situation, or even children with nonsense material in an unnatural setting. As accurate as the results of these researches may be, they are of little value for the schoolroom. The child's needs and experience are so important as determiners of his reactions that they far outweigh whatever differences in learning efficiency are found in the laboratory.

It is interesting that Munn who reports some seventy pages on learning in children practically all of which is of the "laboratory type" ends his chapter with this:

> "It seems apparent to the writer that the chief problems relating to learning in children are those of discovering the most adequate motivating conditions and the most effective procedures for the situations in which children must develop. The practical outcome of researches on learning in children will lie in these directions." [28]

There is beginning to develop a small body of research carried on in the classroom under normal but controlled conditions. The research under the direction of Kurt Lewin is an example of this type. Then observation by trained observers on an established form records what happens under normal conditions and in response to the regular classroom situation. Anderson's studies of teachers' classroom personalities [29] have furnished much pertinent information. There are many more, but not nearly enough. It is this understanding of what happens to youngsters under various classroom conditions, with various kinds of backgrounds and having different kinds of experiences, which is going to be the real contribution toward helping them develop to the full extent of each one's possibilities.

What is the modern concept of learning? In order to be helpful a definition of learning should include the conditions, the process, and the result. Desirable learning may thus be defined as *a change in the individual, due to the interaction of that individual and his environment, which fills a need and makes him more capable of dealing adequately with that environment.* The condition is the filling of a need by this learning, the process is the interaction, and the result is his being more capable of dealing with some part of his environment. It is a change which makes some improvement in his future action, so that he may do, or be, or feel something more effectively than he could have before. We are, of course, here discussing desirable learning. Undesirable learning would have the same condition and the same process, but a different result. Since the result is not good, the satisfaction of the need may be only temporary or may be satisfied in such a way as to make it difficult to satisfy other needs. There must be interaction with the environment, not passive sitting and

[28] Norman L. Munn, "Learning in Children." Reprinted by permission from *Manual of Child Psychology*, edited by L. Carmichael, published by John Wiley & Sons, Inc., New York, 1946, p. 441.

[29] See pages 112-118.

trying to remember. He must do something, physically or mentally with his learnings if they are to be real. By learnings we refer to emotional, social, intellectual attitudes; values, understandings, behaviors, abilities, and skills. Much of this learning is not under the control of the school. A great share of it is, however, and for each and every one of these areas the school has a definite responsibility.

What is known about rate of learning? Almost nothing except in the field of facts and skills. We know, for instance, that certain attitudes and behaviors of democratic living have been learned by a group in a period of four months. But we have no idea of the pattern which this learning took and whether or not it was the same for all the children or different for each.

As to fact and skill learning, the first scientific approach to this problem was expressed in terms of "learning curves." These curves showed that progress was fairly rapid till learning was nearly complete, then the rate of improvement decreased. There were many modifications; some were fairly regular, whereas others showed little progress for a time, then a second spurt of rapid improvement. These periods of little progress were termed *plateaus*. Practically all curves for individual learners showed uneven progress, improvement in one trial, and then little improvement or perhaps regression for another time or two, followed by another increase; or these plateaus might extend over a considerable period of time.

Further study and psychological advances have helped interpret these observed conditions. It seemed that the easier the material the more rapid the learning; that is, whenever the material was within the understanding of the learner, mastery was immediate; the more difficult or the farther beyond the comprehension and experience of the learner, the more slowly rose the curve. In other words, there is no such thing as "a learning curve," for the rate of learning depends on the extent to which the material is suited to the abilities and experience of the learner, as well as on the extent of new material in the learning situation.

The irregular progress is a function of the learning process itself. As the learner, through experience with the material, gains understanding, learns, and experiences insight, progress is made. The learning or insight may concern the whole problem, or it may concern some portion or phase of the problem. The next trials may constitute a reorganization and reorientation in the light of that understanding, and when this is complete, further insight results. The more meaning that can be brought into each experience for each child, the more efficient will be the learning.

The plateaus in the learning curve have never been adequately explained. Such plateaus often caused a lack of interest, but it could not be determined that they resulted from a lack of interest. Snoddy [30] conducted a study that seems to throw some light on the problem.

[30] G. S. Snoddy, "An Experimental Analysis of a Case of Trial and Error Learning in the Human Subject," *Psychological Monographs*, Vol. 20 (1920), No. 124.

The learners in his experiment traced stars by seeing them in a mirror. Some of them worked in spaced intervals, and some used continuous or bunched practice. Those working under the latter method improved for a while, but soon began to cease improvement and actually produced results that were worse instead of better. It was not a case of fatigue but, as Snoddy says, an overstimulation. By properly spacing rest and work periods he was able to produce continuous progress. The educational implication seems to be that teachers must find the optimum work period which, followed by the optimum rest period, will produce most effective learning.

There is another factor to be considered. The Harvard Growth Study reports suggest this. "It was first thought that the plateaus of the learning curve were necessary. Now there is evidence that under the proper motivation these plateaus need not occur." [31] This is very reasonable. If the motivation of need is basic to all learning one would not expect it to be kept at the same pitch over a long period of time.

How much of this discussion of rate of learning and the learning curve is applicable to other types of learning no one knows. Under ordinary circumstances the techniques of interpersonal relations, or attitudes of sharing, might well follow much the same pattern where the learning conditions were similar.

What is known about the rate of forgetting? Here, even more than in the previous section our knowledge is limited to facts and skills. The first scientific data on the rate of forgetting was presented by Ebbinghaus in 1885. His classical experiment found that forgetting takes place most rapidly immediately after learning. After the first learning of nonsense material, more than half of it is forgotten in half an hour. After the first few hours little more is forgotten. Other and later experiments have found the more meaningful the material, the less it is forgotten, and that broad, general principles are forgotten least of all. This implies that the concepts must be meaningful to each individual student, for no matter how much meaning can be derived from certain material, it is nevertheless nonsense material to one who does not understand it.

During the first twenty minutes the rate of forgetting is greatest. The implication here is rather clear. In the period immediately following the presentation of material, there should be a repetition of it in various meaningful situations. This fulfills several purposes, increases understanding, forms an increased number of varied associations, and by recall and use prevents much of that heavy toll of initial forgetting that would otherwise occur.

Following this, in the next day or so, and at increasing intervals there should be spaced reviews. These should not be reviews in the old sense of mere repetition, but a reacquaintance from a slightly different angle

[31] Walter F. Dearborn and John W. M. Rothney, *Predicting the Child's Development* (Cambridge, Massachusetts, Science-Arts Publishers, 1941), p. 232.

or in slightly different form. Thus will be developed a breadth of meaning for the concept, a real enrichment.

Again, we can only generalize. We might say that the more conscious the child is of the attitudes he is acquiring and the abilities he is developing, the more meaningful the experience is for him. If this is true then, the less he is apt to forget them or the more apt he is to repeat or continue them. Certainly, frequent opportunities for him to "use" them will help his learning of them.

Is there transfer of learning? One of the age-old problems has been settled. There *is* such a thing as the transfer of training; that is, if there can be an agreement on what is meant by "transfer of training." The idea of some particular subject of study "training the mind" was rather effectively extinguished by Thorndike's classic experiment.[32] If, however, transfer is taken to mean that because of increased learning in one situation there results increased ability in another situation, there can no longer be doubt of it. Orata summarized his comprehensive study thus:

> If the results of all studies from 1890 to 1935 are put together, assuming that they possess a fair degree of validity and reliability, we may, with confidence make the following generalization: Forty-seven or nearly thirty per cent show *considerable* transfer, eighty or nearly fifty per cent show *appreciable* transfer, fifteen or less than ten per cent show *little* transfer, six or less than four per cent show *no* transfer, and the rest which comprise less than ten per cent show interference which is indicative of transfer of a negative character; it is safe then to conclude that all doubts with reference to the possibilities of transfer of training may be cast away.[33]

Of course, these studies dealt with facts and skills very largely. There is practically no evidence on other types of learning. However, experience would tell us that it is very likely that the principle holds, since attitudes and values are among those things which seem to have the greatest expectancy of transfer.

What can be transferred? It now remains for educators to determine how to secure the most effective transfer. A further discussion of what transfer is may prove helpful. Transfer is essentially the application of learning from one situation to another. As such, it will be recognized as one of the chief purposes of education, for the value of education is in the pupils' ability to use it.

Before such transfer or application is possible, the pupil must thoroughly understand what he is learning. There must be clear meaning or an insight into the total situation. He must also have an understanding of and see meaning in the new situation where transfer or application should function. Pupils should be made conscious of the factors that can

[32] E. L. Thorndike, "Mental Discipline in High-School Studies," *Journal of Educational Psychology*, Vol. 15, January, February, 1924, pp. 1-22, 83-98.

[33] Pedro T. Orata, "Transfer of Training and Educational Pseudo-Science," *Educational Administration and Supervision*, Vol. 21, April, 1935, pp. 241-264.

be transferred, and of the fact of their possible transference. Generalizations, methods, skills, abilities, knowledges, attitudes, and values may all be transferred. The more specific the factor, the more limited the opportunity and expectancy of transfer. Generalizations in methods, principles, attitudes, and values show the greatest possibilities.

How can transfer be most effectively obtained? This is now the most important question in this field. The materials and methods of instruction should be so organized as to furnish the greatest opportunities. The "water-tight compartments" of subject-matter must be broken down and pupils made conscious of the interrelation of knowledge. They must realize that the understanding of the world we live in—its past, present, and anticipated future—is a unified, related whole. It is impractical to try to study the whole at one time; so the emphasis is placed in one phase and then another, but there is no portion of knowledge that does not have some relation to every other portion. Real education comes when the various phases are synthesized into a meaningful whole. Pupils should be made aware of their attitudes, of their interpersonal relations, their behavior for democratic living. Transfer occurs in direct proportion as the pupil "sees" the similarity of two situations. The amount of similarity, the intelligence of the learner, and methods of teaching: all contribute to the extent of the application of learning.

The emphasis in teaching should be on the basic principles, concepts, and generalizations. Since these are the factors that show the greatest transfer and also make transfer possible, there is a double reason for their importance. Other criteria for teaching have also placed these phases in the foreground.

As many and as varied opportunities for application as possible should be presented. This will be discussed more at length in the "Conditions of Learning." But since transfer and education itself depend largely on the ability to apply learning to different situations, the direct emphasis on this application is invaluable. As Ragsdale [34] says: "There is the clear recognition that an educated person will always be able to think best with respect to those categories of knowledge concerning which he has the widest range of information, and especially *the most practice in thinking.*"

Attitudes and ideals should be brought to the conscious level and generalized. A child discovers by experience that a certain phase of study is interesting, then that another is. He may of his own accord generalize that educative procedures are interesting and transfer that interest to the next situation that presents itself. But there is more assurance of such transfer if the teacher insures such transfer by leading the pupils to make generalizations and apply them. The same is true in the case of values.

[34] R. W. Frederick, C. E. Ragsdale, and Rachel Salisbury, *Directing Learning* (New York, Appleton-Century-Crofts, Inc., 1938), p. 18.

Pupils may learn to be neat in their work in one situation. In some cases this transfers to other situations without further effort, but more often definite help is needed to make the generalization and application.

Is amount of transfer similar for all pupils? The answer here is "no." No studies have successfully discovered the exact reason for differences between children in this respect. It seems to be somewhat related to intelligence. This is logical, for all learning is related to intelligence. In general, the more intelligent the child, the more complete the meaning and understanding which he has of the material he has learned; the more easily he sees generalizations and makes applications. Another factor in this as in all else is experience. Certain things may have more meaning for him as interpreted by happenings in his past. If he has been led to generalize on his learnings and to make further application, that in itself constitutes a learning.

What is meant by interference in learning? Retroactive inhibition has long been discussed as a problem of learning. If one learning situation follows another under conditions such that the learning of the first is interfered with by the learning of the second, then retroactive inhibition or interference in learning has taken place. As with all other phenomena there are many theories as to the explanation and reasons behind this fact. But the situations in which such instances occur seem to offer more to educators.

When is there interference in learning? When a learning situation has been partially mastered and another is interpolated (that is, introduced in the middle of the former learning), there is confusion and loss in both situations. If, however, one set of learnings is mastered or nearly so, other learnings may prove a help rather than a hindrance. This seems to be particularly true of socialized behavior.

There is more likelihood of interference when there is considerable similarity between the original and interpolated learnings. If in the midst of the learning of addition, subtraction is introduced, confusion and loss of efficiency of learning are apt to occur in both. If, in spelling, a word is only partially learned and a very similar word is introduced as its homonym (*there* with *their*), or its reversal (*saw* with *was*), confusion may result.

The inhibitory effect can be somewhat lessened by allowing some time between the two presentations. If there is some question of possible confusion between two learning situations, it is well to space them so that some dissimilar activity intervenes. Whether or not there is interference between learning self-control and initiative remains to be seen.

Emotion as a cause of interference. Interference may be caused by factors other than interpolated material. The emotional state of the pupil may exert an inhibitory effect. If the child has an active dislike for any part of the situation, the teacher, the group, the material to be worked

with; or if there is fear, as fear of failure or ridicule, of punishment, or any other disturbing emotion, it will interfere with learning. Repeated failure to succeed at the work he is trying to accomplish may be sufficiently discouraging and emotionally disturbing to cut down efficiency of his learning.

The emotion does not need to be in relation to the present learning situation. It may not indeed have anything to do with the classroom or even the school. It may have to do with a happening on the playground or on the way to school or at home. It may be any type of unpleasant emotion; but if it is strong it is likely to partially or completely block most learnings. However, the learning which fills the child's need at that particular time may be strengthened.

IV. THE BASIC CONDITIONS OF LEARNING

We have seen that the psychology of learning is still a field of considerable controversy. Each school or faction has its own explanations and theories. Thousands of experiments have been carried on to show that learning takes place in "this" situation or under "these" conditions. The results of these studies are more or less agreed to by all. It is the physiological basis and explanations which seem to cause most of the confusion. For teachers and educators, the educational implications of proven psychological facts are more important than the theories explaining these facts. In the field of learning these may be summed up as the "conditions of learning." The ones given here have been founded on sound experimentation and are, in general, agreed to by all schools or at least the less "purist" factions of all the schools. The "reasons why" are still unsettled.

The remainder of the chapter discusses the more important conditions under which learning takes place most effectively. There is considerable duplication and overlapping in these conditions, but the reëmphasis and the approach to the learning situation from various angles may be of practical assistance to the teacher. It cannot be definitely said that learning will take place under these conditions or will not take place under others. It can only be said that learning is more likely to take place or will more easily take place when certain conditions are met.

Learning, in every instance, will not mean merely the memory of facts but rather the acquisition of knowledges, understandings, concepts, methods, behaviors, attitudes, values, abilities, skills, and anything else that may be useful in helping the child to adjust to and control the environment.

Learning is facilitated when the situation satisfies a need or purpose of the learner. This is perhaps the prime condition of learning, and probably no real learning takes place without it. It probably is the same thing which was referred to in the previous section as "drive and reward," and which Miller and Dollard consider the basis of all learning. It should be

kept in the foreground of the teacher's planning, both to insure the presentation of material to meet the recognized needs of the pupils, and to make the pupils conscious of their needs for material selected as important on other criteria. When pupils feel the need for knowing certain facts or acquiring certain abilities, not only is the learning much more effective but much more rapid as well.

It must be remembered that this condition of learning is much more effective if the child is conscious of this need. School people may say that pupils need to know how to solve problems by going to reference material, selecting pertinent data, and organizing them into a solution. The complexity of this procedure will, of course, depend on the maturity of the pupil. However, no pupil is likely to recognize this need until he has a problem to which he, himself, wants to know the answer. Further, he must discover that this answer can only be obtained by referring to other sources. Once that conscious need and purpose has been established, both the teacher's and the pupil's jobs have been made simpler and more efficient.

The pupils' understanding of the implications of the situation for their own future may be effective. The farther in the future that need is, the less effective it is as a developer of interest and as a condition for learning. Though in the adolescent child there is a recognition of an interest in future needs, the elementary-school pupil is more largely influenced by immediate needs and immediate rewards.

Learning is facilitated in proportion as the situation is meaningful to the child. As a teaching-learning concept this condition runs a close second in importance. It is one of the indispensables. There are two major factors on which meaningfulness is based. The child must be able to interpret it in light of its own experience. The situation must be so organized and presented that the general principle or main idea is evident and the remainder of it is seen in relation to the whole.

Experience. Meaning is always based on experience, and that experience is meaningful in terms of previous understandings. *A thing can have meaning only in terms of what the child already understands.* This is a most important principle, and though it may be generally accepted, much teaching entirely ignores it. A teacher would do well first to know her pupils better, find out what is meaningful to them and what is not, and then readapt the learning situation so that all pupils will be able to comprehend all that is presented. It may be a simple manipulation of arithmetic, or it may be a piece of literature or a basic principle of social science, or how to bat a ball well; but for the child it is only nonsense if it is not meaningful to him in terms of his own experience; unless he sees its relation to other concepts, or principles, or ideas, or experience.

Learning may be considered a process of differentiation followed by reintegration on a higher level. A simple illustration is the development of the concept of animals by young children. In the beginning they classify

all dogs under the name of their own pet. Gradually through meaningful experience different characteristics stand out. They begin to differentiate between them. Next follows a reintegration of these differentiated particulars and there emerge the concepts of "my dog" and "strange dogs." This process is repeated until differentiation and classification have resulted in a rather complete understanding of dogs, their breed and characteristics. This is one way in which meaning is developed.

Larger concepts and relationships. General principles, plans, or ideas are more readily learned and less easily forgotten because of their more meaningful content. Details have meaning only as they are seen in relation to the larger idea or principle.

Wheeler and Perkins report experiments that show that the study of learning is in direct relationship to the extent and obviousness of meaning in the material. They say that[35] *"generalities* comprehensible to the learner should be presented *first.* Particulars will then be learned without effort and without memorizing." If the child sees the plan or general nature of the material, the details then seem natural and become an integrated part of the whole—that is, the more easily and readily the *child* sees meaning, the easier is the learning. Material that has a plan—material so related that the pupil understands and appreciates the relationship—is readily learned. Merely because the teacher sees meaning, or a plan, or a relationship in the material or situation, there is no assurance that all or perhaps any of her pupils will. When children have accepted the principle of coöperative effort, and understand that by working together and sharing the results they can better gain what they want, they more easily learn all the little specific ways of working together.

Learning is facilitated when the situation or concept is suitable to the maturation level of the learner. This is another of the basic conditions of learning. Both situation and methods must be adjusted to the "powers" of the learner. This applies to each individual child. With the present system of grade teaching, the larger units should be adapted to the group of pupils as a whole. But the teacher's job has only begun at this point. Within this group of pupils there is a wide range of maturation and an even wider range of previous learnings. All the materials and learnings must be analyzed, and the basic concepts that are involved considered. They will be found suitable for various levels; and for the sake of efficient learning only those concepts, methods, and materials should be presented that can be readily understood at the maturation level of the pupils.

The child may be said to have *seeking behavior;* that he seeks experiences for which his growth makes him ready and rejects those for which he is not ready has a pointed implication for the teacher.[36] Building

[35] R. H. Wheeler and F. T. Perkins, *Principles of Mental Development,* (New York, Thomas Y. Crowell Company, 1932), pp. 296-297.

[36] Willard C. Olson and Byron O. Hughes, "Concepts of Growth—Their Significance to Teachers," *Childhood Education,* Vol. 21, October, 1944, pp. 53-63.

readiness for learning takes time, but it takes less time than to undo the harm which results from an endeavor to force learning when readiness is lacking.[37]

It is always most efficient to start with the child where he is and build from there. To attempt to teach beyond the child's present maturation level is like trying to build on to a skyscraper which was started but where the builders neglected to put in the third floor before adding the fourth. They, of course, get nowhere, lose their materials and time, and do damage to the building already up. There must be a sound basis of learning and experience all the way up to the level on which we wish learning to occur, in order to have efficient results.

Maturation is partially a physical thing which develops at its own rate, and it is partly developed by the experiences and stimulation it receives. Under normal conditions a child's physical growth and development are gradual and continuous. However, his mental, social, or emotional growth may be stunted or harmed temporarily, or even permanently, by constantly facing situations that are not suitable. If the materials are beyond the child's powers at the time, he is lost and makes no progress. He may even regress and be less capable of handling tasks than before. If, on the other hand, the materials are too easy, do not demand the full exercise of his abilities, he loses interest, develops careless habits, and as in the other case, becomes less capable of succeeding with the next situation. If the shy child is forced into a socialized situation where the other children are far more advanced socially, he is apt to lose ground rather than gain it and will be less willing to make further attempts. Whereas, if he is put with another child of about his development, real progress can be made under supervision.

It is important that each child's tasks be suited to his abilities. Though the stress has usually been placed on the less mature children of the group, the problem of the other extreme should be recognized. In reality, it is probably much the more important, for if capable, mature children are not stimulated to the extent of their ability, real leadership is being lost to the world.

Learning is facilitated if the situation is interesting to the pupil. Interest is one of the largest factors in education. It is both a means and an end. It is one of the greatest aids in learning and one of its major aims. Interest is a state of being, a way of reacting to a situation in which the child's own purpose provides the stimulation for effective activity. If the three previous conditions of learning, needs, experience, and power have really been met, interest is almost assured.

Interest cannot be developed by something about which pupils know little or nothing. The new and the unfamiliar may attract attention, and they may arouse curiosity. Both of these are short-lived, but may be tem-

[37] Ruth G. Strickland, "Saving Time to Teach Through Planned Learning Experiences," *Childhood Education*, Vol. 24, December, 1947, pp. 158-163.

porary stepping-stones to a real interest if properly used and supported with knowledge and increasing abilities.

Desirable development of interest is a progressive sort of thing. The more interested one is, the harder and more continuously one works at a problem, and if the other factors of interest have been fulfilled, the greater is the increase in that interest. The thrill of accomplishment, the pride in a task well done, the feeling of responsibility well discharged, all help to identify the child with the task. It is this identification of self with a definite aim or purpose that is real interest. It aids learning and stimulates specific interests as well.

The specific interests the school should develop are many. There should be interests in the larger areas of experience, interests in books, in people, in the pupils' own possibilities, their own progress and activities. If these interests could be engendered in all pupils while under school jurisdiction, there would be little problem of leisure time; crime would be minimized; and many other major problems would be solved.

How does one go about developing such interests? Probably the most potent factor is that the teacher herself has such real and abiding interests, for real interest is contagious. Interests already present should be located so that the teacher may relate new situations to the former interests. After all, this is just another way of giving meaning to the learning situation.

Though *interest* and *learning* are not synonymous, the factors conditioning both are very similar. If interest is developed, there will be learning, and no important learning can take place without interest.

V. CONDITIONS OF LEARNING: RELATED TO THE CHILD'S SUCCESS

Learning is facilitated by reward rather than by punishment. Many experiments have studied the effects of reward and punishment. The one constant result seems to be that praise is more efficacious than punishment. The praise does not need to be great; in fact many times simply recognition by the teacher with a "that's right" or "correct" is sufficient. Thorndike found that "all that is necessary is enough to set off the confirming reaction, and moderate rewards attached to all desirable connections are actually superior to large rewards given less uniformly." [38]

Stephens found that weak associations are little affected by "wrong" and greatly affected by "right," while the strong associations are little affected by "right" and greatly affected by "wrong." [39] Bernard found that, with motor responses, shocked errors were repeated less often. However, with verbal responses, non-shocked errors were eliminated faster than

[38] E. L. Thorndike, *The Psychology of Wants, Interests, and Attitudes* (New York, Appleton-Century-Crofts, Inc., 1935), p. 145.

[39] J. M. Stephens, "The Influence of Symbolic Punishment and Reward upon Strong and Weak Associations," *Journal of General Psychology*, Vol. 25, July, 1941, pp. 177-185.

shocked errors.[40] Obviously much depends on the learning situation, but there is a definite implication that mistakes in situations which have verbal rather than motor response (which is the great bulk of children's school learning) should not be punished and will be eliminated faster that way. This does not necessarily mean that the child should not know they are wrong, but that there should be no disapproval or shame attached to the mistake. Kramer believes that "deprivation of self-confidence is the most dangerous factor in the physical development of a child."[41]

In a study by Gates and Rissland,[42] they found that it was better to make a comment on the child's work than not. Encouragement was better than discouragement. This was especially true for the less capable ones.

The results of these studies seem to be typical of the findings from the great number carried on. Encouragement, moderate praise, or an expression of confidence consistently given to all desirable reactions during the learning process is most advantageous.

As an additional advantage, praise strengthens the pupil's interest in the material and in the situation in general. This may be one of the more important reasons for using it.

Correct learning undoubtedly should be recognized. There is some basis for the non-recognition of errors. Though this non-recognition causes a slightly greater tendency to error, it may ultimately lead to greater achievement owing to the deleterious concomitants of punishment. When the error is actually punished (by blame or disapproval) and the correct response not emphasized and exercised, probably more harm than good is derived from the experience in the final analysis.

Rewards. Let us consider what are or may be rewards. It was suggested earlier in the chapter that a reward is the satisfaction of a need. Thus praise gives the child recognition, a strengthened feeling of competence, and increases his status with his peers. But we must realize that there are many other rewards, many of them operating whether we recognize them or not—for example, not having to face an unpleasant situation; out-of-school approval of someone whose recognition is important to the child; physical activity when restless, or inactivity when fatigued or unwell; favorable parental attitudes intentionally or unintentionally expressed; and so on almost indefinitely. Let us constantly go over the basic needs of the child and add to the list all the specific needs derived from them or a combination of them. Then, in so far as we can identify for each

[40] Jack Bernard, "The Specificity of the Effect of Shock on the Acquisition and Retention of Motor and Verbal Habits," *Journal of Experimental Psychology*, Vol. 31, January, 1942, pp. 69-78.

[41] Hilde C. Kramer, "Is Punishment a Method of Education?" *Educational Method*, Vol. 21, June, 1942, pp. 188-191.

[42] G. S. Gates and L. G. Rissland, "The Effect of Encouragement and of Discouragement upon Performance," *Journal of Educational Psychology*, Vol. 14, January, 1923, pp. 21-26.

child those needs least well met, we can predict the sorts of things which for him will be rewards. In this connection remember that when a need is satiated it has little force to action.

The whole system of material rewards should be used with understanding. It seems rather definite that even irrelevant rewards are learning factors, but such rewards are always extrinsic and thus planned for by others. This may be definitely harmful if used to large extent and as a final aim or goal. Pupils may learn to work only for the extraneous reward and their interest center in that, instead of in the thing to be learned. Such rewards should be used only where necessary and gradually eliminated. In their place should be substituted the more real values. One of these which motivates all of us all through life is the approval of the person in authority and of our own group. Though it may be argued that these are not the most desirable goals, yet they are one of the main factors in human activity and progress. They probably precede the final goal in nearly all cases, that of interest in the thing to be achieved for its own sake. Learning for the sake of self-improvement, because it is the most interesting thing to do, because the person would rather do that than anything else at that time, is, of course, the ultimate goal to be achieved.

By giving teacher approval and encouraging group approval for real progress and desirable attitudes, this aim of intrinsic interest may be developed.

An evaluation. Studies on the effect of praise and blame on learning as they are now conducted can never give teachers a final answer. Experiments must be carried on in the classroom situation if their effectiveness in a classroom situation is to be determined. Experiments are short-lived. The virtue of praise, that of building up self-confidence, has no time to operate.

It is difficult to manage a vital learning experience under experimental conditions. When praise or blame is given experimentally, it is many times given indiscriminately to the whole group, without regard to whether or not it is deserved by the individual pupil. Different methods have different results with different children and under different conditions. Blame may be devastating to the sensitive, timid child and praise be worse than nothing to the self-confident child when given for work that is far below his capacity.

The conclusions that may be drawn from experiment and experience seem to be:

Never use extremes in either praise or blame.

Elaborate praise is apt to be embarrassing and gives no better results than simply letting the child know the teacher is pleased with his efforts or results.

Extreme blame, regardless of its immediate effects on learning, can never be defended from the standpoint of personality development.

As teachers learn to know their pupils, they should be in a better position to judge the child and the situation. They should know when and for whom

praise or blame will be most valuable and what other rewards are most effective for each child.

The aim is to develop happy, self-confident, self-critical, and sincere personalities. The child must feel the teacher is fair, sincerely helpful, and truly his friend.

Learning is facilitated by presenting situations in such a way that the pupil's response to them is correct and successful. Success is a stimulator of interest and energy, both of which are important factors in learning. Using experimental procedures with nine-year-old elementary school boys, it was found that experience with success resulted in better subsequent performance and in better personal-social adjustments. Failure served as a depressant and resulted in poorer subsequent performance, increased tension and poor personal-social adjustment.[43]

It was also found that a previously successful child can be made to feel failure but it is difficult to make a previously failing child feel successful.[44] In an attempt to modify such feelings of failure,[45] a group of children were selected who showed immature and undesirable reactions to failure. These were put through a training period where the tasks presented were graded in difficulty. At first only those resulting in certain success were given, then gradually they became more difficult so that they required increased effort and perseverance. But always they were within the range of possible success and it was managed so that the child could always see his progress and be conscious of his previous success. Some improvement in the child's attitude resulted. How much easier and better if he had never been forced into such feelings of failure in the first place! A response, simply by occurring, had made its recurrence probable. The situation should be so adjusted, controlled, and guided that pupils respond correctly the first time. This is not the old law of primacy; rather it is insuring that the correct response and not the incorrect one is the one that is being learned. If initial errors do occur, they should not be allowed to stand uncorrected for any length of time.

If the situation is presented according to the best teaching practices, the errors should be few. If the situation is presented at the children's level of understanding, if their interest and attention have been obtained, if it is based on concepts that are all previously understood, and if the initial presentation gives wide experience with that which is to be learned, by having it occur again and again in various situations before recall is expected, there should be a minimum of errors and a maximum of learn-

[43] Beatrice Lantz, *Some Dynamic Aspects of Success and Failure,* Psychological Monographs, Vol. 59, No. 1 (Northwestern University, Evanston, Illinois: American Psychological Association, 1945), 40 pp.

[44] Reported in Robert R. Sears, "Personality and Motivation," *Review of Educational Research,* Vol. 14, No. 5, December, 1944, p. 373.

[45] R. Updegraff and M. E. Kuster, *A Study of Children's Reactions to Failure and an Experimental Attempt to Modify Them,* University of Iowa Studies, Child Welfare, No. 13, 1937.

ing. If a situation is arranged so that it is easier for wanted and desirable behavior to take place than for other types, then that is more likely to happen.

This condition does not preclude the learning by discovery. When pupils learn by discovery, the conditions should be so controlled as to make right responses probable. The control should be in having the situation within the capabilities of the pupils both as to maturity and accumulated learnings. In such a situation pupils may make either of the following responses. There may be immediate discovery of the correct solution, or immediate insight, to use the gestaltist's term. Or, if such insight is not present, then the pupil makes his response to the problem, as best he can in terms of his previous experience.

This response in terms of cumulative experience is "trial and error" learning and is not pure guesswork as many seem to believe. The greater and more adequate the past experience in relation to the problem at hand, or the more mature the child, the more likely the first solution is to be the correct one. Intelligent and mature children not only have a greater fund of meaningful experience but a better ability to generalize upon that experience. Thus, the more mature and capable the child, the more apt he is to arrive at correct solutions without guidance; conversely, the more immature and less capable the child, the more guidance and control are necessary. When errors are made, the situation should be so arranged that the child will become conscious of the error and able to make the correct response. The best educational procedure in case of error seems to be explained in the following two conditions.

Learning is facilitated by "punishment" only if that punishment insures immediate correction of the error. The value of blame then is determined by the situation and by the opportunity for immediately making the correct response. In some situations as, for instance, the spelling of a word, or the solution of an arithmetic problem, or the writing of a story, or the painting of a picture, where there is opportunity for the child to take immediate advantage of the correction and put it into use, "punishment" may be of value. There are other situations, largely dealing in socialized activity when the opportunity for making the correct response is not available for some time. In such cases it is probably more efficacious to avoid calling attention to the incorrect responses. If the error is inherently satisfying, this satisfaction should be removed or counterbalanced.

It should go without saying that the child should always understand thoroughly what the "punishment" was for. The deed for which the blame is given must be clearly defined in the child's mind and definitely linked with the punishment if there is to be resultant learning. Although obvious, this is many times very poorly done. Too often the child is uncertain or mistaken as to the specific reason for his punishment.

As to the punishment itself, there is no connection between the severity of the punishment and the amount of value that can be derived from it.

The mere saying of "wrong" may be as effective as a severe beating and certainly does not have the harmful concomitants. An excellent guide is, never correct a child in stronger fashion than is necessary for bringing about the desired results.

"The best results are obtained from punishments when the annoying state of affairs then and there causes or encourages or at least permits the animal to operate a right connection and receive satisfaction therefor." [46] Thorndike wrote this as a conclusion to some of his animal experiments, but later on other workers have verified his results on human learners. Some of the experiments on the effect of punishment on learning have shown disagreement in results. Most studies involving animals show some improvement from punishment, whereas many studies of students do not. In understanding this seeming discrepancy the factor of emotional response is often neglected. This is almost entirely lacking in animals, whereas in humans it is practically impossible to have any type of punishment without an attendant emotional disturbance that may be a hindrance to learning. The extent and type of emotional response determine the effect of the punishment.

After considerable experimentation, Tuckman found that the influence of a mild *wrong* differs very little from that of an emphatic and substantial pain or deprivation. He also found that: [47]

> No intensity of punishment prevented the occurrences of the punished connections from being harmful to learning. In every experiment, and with every degree of punishment, they did more harm than good. Practice in error is extremely dangerous. Unless the punishment leads to an immediate change of response, the occurrence of a wrong connection does harm which no punishment of it is likely to cure.

Thorndike suggested that psychology offers five ways of improving the results from punishments: [48]

1. Punishment should belong to behavior. If it is not a direct after-effect, make a clear and emphatic connection between behavior and the expectation of punishment.
2. Forestall punishment where the want which led to the offense can be satisfied innocently—the child not made to sit still—give sweets to jam stealers—athletic clubs for hooliganism.
3. Shift emphasis from the discomfort of "A" to the relief, security, and comfort of not "A," when it is prudent to do so as it usually is.
4. Search for ingenious ways of using the sure and almost fool-proof methods of arousing the confirming reaction by attaching relevant satisfiers to the desired connections, in place of punishment for wrong connections.
5. Use in scientific way the punishments that are still necessary.

[46] Thorndike, *The Psychology of Wants, Interests, and Attitudes, op. cit.*, p. 78.

[47] Jacob Tuckman, *The Influence of Varying Amounts of Punishment on Mental Connections*, Contributions to Education, No. 590 (New York, Teachers College, Columbia University, 1933), pp. 40-41.

[48] Thorndike, *The Psychology of Wants, Interests, and Attitudes, op. cit.*, p. 151.

Learning is facilitated if the child corrects all errors promptly. There are at least two basic reasons underlying this condition. The first is that since learning is facilitated by the recurrence of the material or process in various situations, errors can be learned as readily as correct responses if the child is not conscious of the error. If the error is immediately corrected and the proper response substituted, there is a minimum of experiencing of the error and, other things being equal, a minimum of incorrect learning. There needs to be a clarification of this point. If "errors" are understood to include errors of omission as well as commission, errors of incompleteness when judged by adult standards, then correction of all errors is, of course, impossible. Learning is a gradual process, and the child is physically and mentally incapable of responding completely to most situations. The errors here mentioned rather refer to definitely incorrect responses at the level at which the child should respond correctly. If the response is above his maturation level, probably no learning will occur anyway. Simple repetition probably would not result in learning either. But, if the situation is so set up that the response is being made in a variety of situations and the child is making the wrong response, then incorrect learning is taking place. Thus, the better the teaching situation, the more serious it is to allow errors to be repeated.

Relearning is a much more difficult task than correct initial learning, as habits must be broken as well as reformed. An initial mistake immediately corrected may sufficiently focus attention and interest so that correct learning takes place immediately.

The second underlying principle is, if two responses are given to a situation, the one occurring last is the one more apt to be remembered. If an error is made but immediately corrected, and the pupil is given the opportunity of making the correct response, he is more apt on future occasions to make the correct rather than the incorrect one. This is one reason it is so important to have adequate supervision of free play. If the teacher can catch immediately an undesirable attitude or behavior and help the child to a better reaction, a problem may be averted.

Learning is facilitated when the pupil has a knowledge of the success of his result. It has been definitely established by much research that knowledge of results is a great incentive to learning. Fairly immediate knowledge seems to be advantageous. It is tied in very closely with the studies on reward and on correction of errors. The knowledge that a certain reaction is correct constitutes the approval of the teacher sufficiently to "set off the confirming action." If the reaction is incorrect, it furnishes opportunity for correction and desirable learning.

The implications are that pupils should know almost immediately the correctness of their work when testing facts and skills. For example, in an arithmetic or reading or spelling test, the teachers should give the children the answers right after they have finished working. They can then correct any errors they have made. Correct learning is certainly more

important than "a grade." If they correct their own work and know that no grade is to be recorded, their full attention can then be on the learning itself. Children should have all their various responses as well as culminating activities evaluated by the teacher and by the group.

There should be a constant trend toward developing self-evaluation, which is an enormously valuable tool. They learn to evaluate by evaluating, but in order to do it effectively the child must feel secure enough so that he is not afraid of being judged. He must know that the evaluation of others will be fair and impersonal. He must have enough confidence in himself to know that there will be more on the positive side of the ledger than on the negative, and that he will be able to do what is necessary to meet the standard set for him. Therefore he will be able to face the logical implications of the comments which concern him and assume responsibility for acting on these implications.[49]

VI. CONDITIONS OF LEARNING: RELATED TO PHYSICAL ASPECTS

Learning is facilitated when the learner is in good physical condition. This point needs little argument. Few schools, however, make the necessary checks to insure the discovery of physical difficulties. Each child should have a general examination by a physician and have a check on the condition of the teeth by a dentist once or twice a year. Every three or four years there should be a hearing test and a test of vision which is more than simply a test of visual acuity. It should be sufficiently comprehensive to determine with considerable reliability whether an examination by an optometrist is necessary. Equipment[50] is available which can be handled by teachers. In addition, any pupils who have special difficulties should receive more complete examination.

Various studies have been made concerning the effects of the restriction or addition of various vitamins on learning. The ones showing the most effect are those where extra amounts of thiamin were added to the diet. In some cases quite significant gains were found.[51] More research is needed in this area.

Learning is facilitated where the physical conditions are favorable. By physical conditions are meant heating, ventilating, lighting, seating, room decoration, and other conditions for study. Many experiments have been carried on to determine the effect of humidity, temperature, and ventilation on one's ability to study. As far as it is possible to determine, all

[49] E. J. Megroth and V. Z. Washburne, "Teaching Evaluation," *Journal of Educational Research,* Vol. 40, September, 1946, pp. 63-69.

[50] See Chapter 13, page 567.

[51] Ruth Flinn, "Effect of Added Thiamin on Learning," (A Summary of *Contributions to Education,* No. 877, Teachers College, Columbia University), *Teachers College Record,* Vol. 45, October, 1943, pp. 54-55.

———, "Mental Response to Nutritional Supplements of Thiamin," *Teachers College Record,* Vol. 47, January, 1946, pp. 257-267.

the studies have been done under conditions which in and of themselves furnish extra motivation. This has been enough to compensate for considerable ineffectiveness owing to the working conditions under experimentation. Whether or not pupils *can* work as well in undesirable temperature, humidity, and with improper ventilation, all must agree that most children *do not* work as well under such conditions. This may be due to the distraction of attention to these other factors, and to the physical discomforts caused by them. It may be due to the greater effort needed to accomplish the same amount of work. Whatever the explanation, it facilitates learning to have these conditions so regulated that each child is physically comfortable.

The lighting problem is somewhat different. Commercial lighting concerns have promoted much investigation of the amount of light which is optimum for a child doing various types of tasks. An exposure meter is put out, by which it is a very simple job to check the adequacy of lighting in every section of every room. Inadequate light has two adverse effects. First, it may cause eye-strain which may be a contributing factor to more serious eye difficulties, and second, it puts a strain on the pupil which may result in fatigue and loss of interest. Both of these results are detrimental to learning.

Improper seating conditions, seats that are uncomfortable, too high or too low also cause fatigue and distraction. Chapter 2 discusses this at greater length.

The colors and decoration of the room seem to have some influence on the activity and irritability of those who work there. Restful colors and quiet simple decorations seem to have a calming stabilizing effect. In general, this is a minor factor, but is more pronounced with some than with others.

Constant noise is another source of distraction and fatigue. Learning to concentrate with a certain amount of noise going on is desirable, but care must be taken to insure that *all* pupils are learning to concentrate in spite of the noise instead of learning to be distracted by that noise. Learning to concentrate on a task under various conditions is more important than learning to concentrate under any particular condition. The modern classroom is a good example of this. When the children are busy working on various phases of their own problems, a number of activities will often be going on at the same time. The child gets experience concentrating on his problem while his neighbor may be doing something quite different. It is the teacher's responsibility to see that the child really is concentrating in this atmosphere of busy self-directed activity. The more definite the child's purpose, the greater his interest, the less apt he is to be distracted.

Fatigue. Thus an improper physical situation may cause distractions and fatigue, both of which are hindrances to learning. The problem of fatigue is a study by itself. There is still much controversy in the field, but this much is certain: There are two general types of fatigue which

may be called *physical* and *emotional.* That is, there is a fatigue that comes from exercise, and there is a fatigue that comes from a falling off of interest. Pupils may be tired *from* doing a certain task or they may be tired *of* doing it. The former in the regular school situation is limited almost entirely to physical tasks.

Fatigue may be caused by the factors previously mentioned which cause strains and stresses in the muscles of the body, by being required to sit still longer than is desirable, by too strenuous exercise, by loss of sleep or malnutrition and other similar factors. This is, however, the less frequent of the two types. The other type of fatigue comes from loss of interest in the task at hand, a desire to do something different. Children become bored and the solution seems to lie in the problem of interest previously discussed. To a certain extent, the programming should help solve the problem. Chapter 2 has suggested probable periods of attention for various ages, whereas Chapter 7 has a number of sample programs of the day's activity. In part, it should be the teacher's responsibility to be aware of the onset of fatigue and make adjustments on that basis.

VII. CONDITIONS OF LEARNING: RELATED TO "METHOD"

Learning is facilitated by one of the "modified-whole" methods. Learning is facilitated by the meaningfulness of the situation. Therefore, it is logical as well as experimentally verified [52] that learning in such a way as to maintain the larger meanings in the material or process, is advantageous. Specific situations and materials must be adjusted within this general method.

In the following discussion the subject of the learning has been spoken of as "material" and with this type of learning, one usually immediately thinks of rote learning of poems or similar material. *This is not at all necessary.* It may be applied with equal value to almost any type of learning the school may offer. It is simply an expression of a valuable means of organizing the desirable learnings, which the school situation presents, no matter of what type they may be. Learning to solve a problem, to use reference material or even socialization of the individuals may with considerable value be considered in this connection.

If the material or other learning is extensive, it is best divided into logical parts and learned by what is sometimes called the "progressive part method." In this, section one is learned, then section two, the two sections related, then section three learned and all three sections related, and so on. The extent of the parts must be determined by the maturity of the pupil and by his own ability. The more able and mature the pupil, the larger, within limits, is the desirable unit. It is important, however, that each of these units have the property of a whole.

[52] M. V. Seagoe, "Additional Laboratory Experiments with Qualitative Wholes," *Journal of Experimental Psychology,* Vol. 20, February, 1937, pp. 155-168.

Where the material is of varying difficulties, it is of value to start learning the unit as a whole until the difficult spots begin to stand out. These may be taken as smaller units for more intensive study and when mastered, the larger unit then is studied as a whole until learning is complete.

An experiment[53] on the high-school level has implications here. The word and sentence methods of teaching shorthand were compared. The sentence method was found superior even in writing isolated words, and much superior in tests involving sentences to be written or read in shorthand. It is concluded that one should begin and learn a thing in the way it will eventually be used for learning to be most efficient.

All learning should be conceived in large units, of the meaning of which each child should be aware. The large unit should be divisible into smaller units, still meaningful and having an understood connection with the larger unit. It should be made certain that all of these units or difficult portions (in terms of each individual child) are thoroughly mastered and combined into the meaningful whole. Teachers must be certain that each child sees the relationship of the parts and the unity of the whole.

When considered in perspective, all *good* teaching falls into this plan, the difficulties usually encountered being the failure to insure that the pupils are conscious of the meanings and the neglect in seeing that all difficult portions are cleared up for each individual pupil.

Learning is facilitated when study and socialized activity are combined. Many laboratory studies have been made in relation to this problem, but there have also been two experiments conducted in school situations and with school materials. Both agree that reading plus "recitation" is definitely superior to reading alone. By *recitation* is not meant the old question-and-answer procedure. Rather, it includes any socialized activity on the part of the group that involves the use of the materials included in the reading or study.

For instance, a group was working on the problem of what is a good balanced school lunch. They decided they needed to know more about the importance of various foods for healthful living. So they each went to a different book and located pertinent material. They read it, analyzed it, and evaluated the extent to which it gave help in solving their problem. In other words, they *studied* these books. Then they came back together as a group and discussed what each had found out. Together they organized and planned a number of balanced meals which would give variety as well as all necessary elements. With the combined study and socialized activity, the children learned a great deal more than they would have by either one separately.

[53] D. A. Worchester, and Mildred Clark, "A Comparison of the Results Obtained from the Teaching of Shorthand by the Word-Unit Method and the Sentence-Unit Method," from Sidney L. Pressey and J. Elliot Janney, *Casebook of Research in Educational Psychology* (New York, Harper and Bros., 1937), pp. 268-270.

Gates [54] found that for meaningful material the optimum proportion of time seemed to be 40 per cent devoted to reading and 60 per cent to "recitation," which showed a superiority of 30 per cent over reading alone. More recently Forlano [55] has found by using school situations and school materials that "In general beyond a certain proportion of recitation, more recitation leads to slight increasing or even diminishing returns. Even when a method employs 80 per cent of the learning time in recitation, however, it is still definitely superior to the reading method." This held true on both immediate and delayed recall, being even more noticeable on the delayed recall. The optimum proportion of recitation is less for meaningful than unmeaningful material and grows proportionately less as the pupils mature. However, probably at least half of the time in elementary school should be spent in socialized activity.

The value of this can be easily understood in terms of factors in the learning process. The materials, methods, and concepts are being used or repeated in another situation, which gives the child further and varied associations with them. It often provides an opportunity for reorganization of the child's information and abilities to solve a new problem. He is motivated to better effort by the social situation. He has the opportunity to check on what he knows (knowledge of results) and immediately to correct errors in his thinking.

Learning is facilitated when the materials or skills to be learned recur at spaced intervals. Much of the experimental basis for this was presented in the discussion of the curves of learning and forgetting and of plateaus. Children's attention is short. Work periods on any one phase should be short. There must be repetition, but since mere repetition has minor value, the recurrence of the material or situation should be in a somewhat different form or from a little different approach.

Perhaps a word of warning should be injected here. Much has been said about presenting material with many and varied associations. This is very important *but* the association must be sufficiently similar in situation so that the child recognizes the element being emphasized. If he does not, it is a totally new situation with none of the value of recurrence.

Learning is facilitated by both positive and negative concepts. For instance, in a study of occupations on any level, an understanding of a fireman's job becomes clearer and more meaningful if related duties which are not his responsibilities are discussed as well as those duties which are. He must do thus and so, but does not do this and that. Smoke found that: [56]

[54] Arthur I. Gates, "Recitation as a Factor in Memorizing," *Archives of Psychology*, Vol. 26, No. 40, pp. 1-104.

[55] George Forlano, *School Learning With Various Methods of Practice and Rewards*, Contributions to Education, No. 688 (New York, Teachers College, Columbia University, 1936), p. 53.

[56] Kenneth L. Smoke, "Negative Instances in Concept Learning," *Journal of Experimental Psychology*, Vol. 16, August, 1933, pp. 583-588.

> ...although negative instances may not make for rapidity in learning they tend to make for accuracy, especially in the case of difficult concepts. It appears that insofar as negative instances assist concept learning they do so largely because of the way in which they prevent the learner from coming to one or more erroneous conclusions while he is still in the midst of the learning process.

The subjects of his experimentations preferred to learn by both positive and negative instances rather than by the positive alone. They did not feel that the negative instances were confusing. The explanation seems to be that there are more and different associations concerning a concept when both negative and positive instances are given. The concept becomes more clearly and definitely defined so that it is more meaningful and exact.

According to one study there is no reason to avoid wrong forms in grammar or spelling in the learning period as long as the child is aware that some of them are wrong. More learning takes place when the pupil makes the correction than when he just recognizes it.[57]

Learning is facilitated by increasing the number of associations with the material, where each association adds some new meaning. Understanding takes place by insight when certain of the conditions of learning have been met. But memorization or the acquisition of the ability to recall for use at will requires repetition on different occasions and in different settings. Both insight through understanding and intelligent repetition are a necessary part of learning.

The mere repetition of an experience is not learning but the recurrence of an experience in which the child sees some new "belongingness" or new meaning that he has not seen before *is* learning. This new meaning does not have to be "new" to the race. As long as it is new to the individual child, it constitutes discovery and assures learning.

An increase in the number of associations with the material to be learned is a large factor in the learning of it. However, the more varied and meaningful these associations, the more effective they are. This increase in number and variety of associations may best be obtained by giving opportunity for transfer—that is, pupils should apply this knowledge or ability or ideal to as many situations as possible. When they have reached the point where they can make independent application to a variety of situations, mastery has taken place which only occasionally needs further opportunities.

Drill. It may be well to discuss drill as it affects school learning. Drill has been variously interpreted as being of no value and of paramount importance. In the final analysis the disagreement seems to be as to what constitutes drill. Thorndike found that "Repetition of a connection in the sense of the mere sequence of the two things in time has then very,

[57] John Ranton McIntosh, *Learning by Exposure to Wrong Forms in Grammar and Spelling*, Contributions to Education, No. 892, (New York, Teachers College, Columbia University, 1915).

very little power, perhaps none, as a cause of learning."[58] "The results so far appear to confirm entirely the theory that mere repetition of a sequence, without 'belongingness' and without the intention to learn on the student's part, leads to no learning."[59] It may be like the case of the orphan who had taken a thousand baths in ten years, always by compulsion, and still wouldn't take a bath without compulsion.[60] How much of our learning is like this?

A child who misses a word in spelling and is required to write that word 100 times may or may not learn to spell the word correctly. This type of drill seems to have little value. If the child did learn to spell the word, it was not through the virtue of the repetitions but rather because he gave sufficient attention and thought to the way the word was spelled so that he formed a sufficient *number* and *variety* of definite associations with the correct spelling. The next time he needed to spell that particular word, the wealth of associations made recall possible. After a sufficient number of such instances recall became automatic. *But* this tedious process of writing the word 100 times was entirely unnecessary. A few thoughtful associative repetitions of the spelling of the word were the bases of learning.

To avoid misunderstanding from here on, the type of "drill" which has been found effective will be thought of as the "forming of associations" with the material. One usually thinks of "drill" in connection with rote learning and the acquiring of mechanical skills. When the emphasis is placed on forming a number of varied associations, its implication for all learning is more readily understood and more acceptable.

Whether it be concept, information, method, behavior, understandings or attitude, the greater the variety of the situations to which it may be related, the more numerous the pupils' meaningful associations with it, the more instances in which it has been applied, the greater is the learning that will take place.

Learning is facilitated if factors which should be connected are presented together in time and space. Often contiguity in time and space are the only common factors between two concepts. This is particularly true in the field of attitudes and emotions and is of prime importance in mental hygiene. Much of the "unconscious" learning takes place in this way. Thorndike said that one may learn "without knowing that he is doing so or afterward that he has done so." This is a tremendously important factor to be kept in mind both in presenting desirable situations and in avoiding undesirable ones.

[58] E. L. Thorndike, *Human Learning* (New York, Appleton-Century-Crofts, Inc., 1931), p. 28.

[59] J. Huang, "Experimental Studies in the Rôle of Repetition, Organization and the Intention to Learn in Rote Memory," *Journal of General Psychology*, Vol. 31, October, 1944, pp. 213-217.

[60] Frank M. Rich, "What Are Good Schools?" *Journal of Education*, Vol. 126, October, 1943, pp. 213-214.

Besides this, if two learning units are to have mutual association, it is necessary that they be presented together. The more often they come to the child's attention together, the greater the wealth of mutual associations and the more apt one is to recall the other.

"Mere temporal contiguity" may have no power to form connections, but it is difficult to form associations without it. Associations thus formed may or may not have any logical connection.

Suggested Learning Experiences

1. Observe a class. Spot some child who is obviously learning something different from the situation than the teacher intends. What was she trying to teach? What was he learning? Why?

2. In this class you observed, what instances did you note of children docilely following procedures "dictated" by the teacher? What instances of democratic thinking and action?

3. Watch a group of children in unsupervised play, perhaps at recess. What social learnings are taking place? What other or more desirable learnings could take place without destroying the values of free play? How?

4. What implications does the statement "past experience must furnish the basis which gives meaning to the new situation" have for developing a curriculum in the social studies, language arts, mathematics, or science. Present your thinking on one of these to the class and let them check it.

5. Examine a textbook in arithmetic to determine in what way the authors make provision for the gradual development of concepts.

6. Analyze the vocabulary repetition in a pre-primer or primer to note the repetition of words. Which of the suggested conditions of learning are the authors attempting to meet?

7. Observe a class for some time. What conditions of learning are especially well provided for and which ones seem to have been neglected?

8. A greater need in relation to this chapter is not a discussion of the various conditions of learning as separate items. Rather it is a thorough discussion of their implications for curriculum development. This can be handled by class discussion, or individual or group presentations. The following are among the more important statements which should be discussed. What are the implications for planning children's experiences?

a. "Desirable learning is defined as a change in the individual, which makes him more capable of dealing adequately with his environment."

b. "Learning is due to the interaction of the individual and his environment."

c. "Generalizations in methods, principles, attitudes, and ideals show the greatest amount of transfer."

d. "Learning is facilitated when the situation satisfies a conscious need or purpose of the learner."

e. "Learning is facilitated in proportion as the situation is meaningful to the child."

f. "Learning is facilitated when the situation or concept is suitable to the maturation level of the learner."

g. "Learning is facilitated if the situation is interesting to the pupil."

h. "Learning is facilitated by increasing the number of associations where each association adds some new meaning."

SELECTED REFERENCES

ANDERSON, Harold H., "Educational Implications of Research in Dominative and Socially Integrative Behavior," *Journal of Educational Sociology,* Vol. 13, April, 1940, pp. 490-501. Cites several studies which show that dominative behavior begets dominative behavior and integrative begets integrative whether it be the child or the teacher.

———, and BREWER, Joseph, "Studies of Teachers' Classroom Personalities II, Effects of Teachers' Dominative and Integrative Contacts on Children's Classroom Behavior," *Applied Psychology Monographs,* No. 8, Stanford University Press. Describes much of teachers' classroom behavior in terms of domination or integration. Shows its effect on pupils' behavior and activities.

BEAUMONT, Henry, and MACOMBER, Freeman Glenn, *Psychological Factors in Education* (New York, McGraw-Hill Book Company, 1939). Considers learning and teaching from the standpoint of satisfying the basic needs and development of all phases of the individual child.

BRUCE, William F., and FREEMAN, Frank S., *Development and Learning; the psychology of childhood and growth in a democratic society* (1942), 552 pp. Part III, Diverse Approaches to Learning, discusses many types of learning and the implications of emotional stability and social organization. Part IV, Problem and Prospect, discusses persistent psychological problems of learning and human development.

BURTON, William H., *The Guidance of Learning Activities* (New York, Appleton-Century-Crofts, Inc., 1944), 601 pp. One of the soundest and most comprehensive discussions on all phases of learning.

Child Development and the Psychology of Learning, Division on Child Development and Teacher Personnel, Commission on Teacher Education, American Council on Education, April, 1941. Has many suggestions for arranging the learning situation to accomplish a variety of purposes.

Child Growth and Development Emphasis in Teacher Education (State Teachers College, Oneonta, New York, American Association of Teachers Colleges, 1944), 112 pp. Written primarily for Teachers Colleges, gives a great deal of what the teacher should know of all the basic factors, developmental tasks, techniques, and educational implications.

COMMINS, W. D., *Principles of Educational Psychology* (New York, Ronald Press Company, 1937), 596 pp. A useful introduction to educational psychology from the field theory point of view.

DAVIS, Allison, *Social-Class Influences upon Learning* (Inglis lecture) (Cambridge, Harvard University Press, 1948), 100 pp. "The importance of social-class influences upon the learning and development of children calls for reexamination of the school's academic curriculums."

DAVIS, Robert A., *Psychology of Learning* (New York, McGraw-Hill Book Company, 1935). Discusses the whole learning process from neurological and psychological bases, explanatory principles to improvement of learning and various related factors.

Educational Policies Commission, *Learning the Ways of Democracy* (Washington, D. C., National Education Association, 1940), 186 pp. A compilation of experiences of high schools throughout the country in setting up situations for democratic living and learning. Many ideas can be used in elementary schools.

FLEMMING, Cecile White and ALDRICH, Grace L., "The Development of Study Skills and Work Habits in the Horace Mann School," *Teachers College Record,* Vol. 44, March, 1943, pp. 433-448. An excellent list of study skills and habits which are based on needs of modern education.

FORLANO, George, *School Learning with Various Methods of Practice and Rewards,* Contributions to Education, No. 688 (New York, Teachers College, Columbia University, 1936). A study in the classroom of the value of recitation, reward, and immediate and delayed knowledge of results in learning.

FREDERICK, Robert W., RAGSDALE, Clarence E., and SALISBURY, Rachel, *Directing Learning* (New York, Appleton-Century-Crofts, Inc., 1938). The whole book is valuable, but Part I, "The Process of Learning and Study," is particularly pertinent.

HILDRETH, Gertrude, *Child Growth through Education: Effective Teaching in the Modern School* (New York, The Ronald Press Company, 1948), 437 pp. Defines the

principles of unified learning and describes the application and results of such a program.

HILGARD, Ernest, *Theories of Learning* (New York, Appleton-Century-Crofts, Inc., 1948), 409 pp. A presentation of the theories of learning from ten different points of view and an analysis of the common ground and differences.

HOCKETT, John A. and JACOBSEN, E. W., *Modern Practices in the Elementary School,* Revised (Boston, Ginn and Company, 1943), 346 pp. Chapter II discusses organizing the class for living and learning.

HOLLINGSHEAD, Arthur D., *Guidance in Democratic Living* (New York, Appleton-Century-Crofts, Inc., 1941), 260 pp. Describes the planning and thinking done in one school in the process of setting up democratic living and learning.

HOPKINS, L. Thomas, "Atmosphere for Learning," *Teachers College Record,* Vol. 46, November, 1944, pp. 99-105. "To aid pupils better to learn subject matter, to develop skills, to become mentally, emotionally, and socially mature, the school must improve the quality of human relationships which exist among all individuals directly in contact with the learning situations."

———, *Interaction; the Democratic Process* (Boston, D. C. Heath & Company, 1941), 190 pp. Presents a valuable point of view, especially in Chapter IV, What is a Desirable Concept of Learning? and Chapter VI, What is an Educative Experience?

KILPATRICK, William Heard, *A Reconstructed Theory of the Educative Process* (New York, Teachers College, Columbia University, 1935). A short basic discussion of the whole question of learning.

LEONARD, Paul, and EURICH, Alvin C., eds., *Evaluation of Modern Education* (New York, Appleton-Century-Crofts, Inc., 1942), 299 pp. A report sponsored by the society for curriculum study which demonstrates the values of modern education.

LLOYD-JONES, Esther, "Some Current Issues in Guidance," *Teachers College Record,* Vol. 49, November, 1947, pp. 77-88. A comprehensive analysis.

MACOMBER, F. Glenn, *Guiding Child Development in the Elementary School* (New York, American Book Company, 1941), 335 pp. Chapters I and X are of particular interest here, having to do with the teaching and learning process and the general school atmosphere.

"Methods and Materials for Childhood Education," *Review of Educational Research,* Vol. 18, June, 1948, pp. 219-261. Reviews research in learning through grade 6 for the previous three-year period.

MINOR, Ruby, *Early Childhood Education* (New York, Appleton-Century-Crofts, Inc., 1937). Part II deals with some aspects of learning on the primary level.

MUNN, Norman L., "The Psychology of Learning and Its Classroom Application," *Peabody Journal of Education,* Vol. 19, March, 1942, pp. 257-265. Summarized twenty-six studies in psychology of learning which he considered especially significant.

MURSELL, J. L., *Successful Teaching, Its Psychological Principles* (New York, McGraw-Hill Book Company, 1946), 338 pp. "The effectiveness of teaching depends upon context, focalization, socialization, individualization, sequence, and evaluation." "*The effectiveness of learning depends upon its meaningfulness.*" A different and valuable presentation.

National Society for the Study of Education, *Educational Diagnosis, Thirty-Fourth Yearbook* (Bloomington, Ill., Public School Publishing Company, 1935), Section I. This section deals with the various factors which affect the child's learning, such as physical, intellectual, pedagogical, emotional, social, and environmental.

ORATA, Pedro T., "Transfer of Training and Reconstruction of Experience," *Mathematics Teacher,* Vol. 30, March, 1937, pp. 99-109. Discusses the development of number as a mode of thought and as an intellectual tool through its use in social experiences rather than as an isolated subject.

'Psychology of Learning, General Methods of Teaching and Supervision," *Review of Educational Research,* Vol. 6, June, 1936. Chapters I, II, III, and IV are of particular value in reporting pertinent research.

RYANS, David G., "Research in Learning," *Journal of Educational Research,* Vol. 36, January, 1943, pp. 335-342. Problems, needs, and shortcomings of much of the research on learning. Should be read by anyone contemplating such research.

SEARS, Robert R., "Personality and Motivation," *Review of Educational Research*, Vol. 14, No. 5 (December, 1944), pp. 368-380. Reviews the research in this area for the three years preceding.

SHEVIAKOV, George V., and REDL, Fritz, *Discipline for Today's Children and Youth* (N. E. A., Department of Supervision and Curriculum Development, 1944). In the broader, more helpful sense discipline is learning. Many specific situations discussed with their implications.

STRANG, Ruth, *An Introduction to Child Study* (New York, The Macmillan Company, Rev., 1938), Chs. XV and XIX. These two chapters discuss learning from the standpoint of the primary child and the post-primary-preadolescent.

SYMONDS, Percival M., *Education and the Psychology of Thinking* (New York, McGraw-Hill Book Company, 1936). Analyzes various thought processes and gives their educational implications.

The Psychology of Learning, Forty-first Yearbook of the National Society for the Study of Education, Part II (Bloomington, Illinois, Public School Publishing Co., 1942). In section II, Implication for Education, there is discussion of motivation, relation of emotional behavior to learning, and other important aspects. Section I presents various theories of learning.

THORNDIKE, E. L., *The Fundamentals of Learning* (New York, Teachers College, Columbia University, 1932). Presents experiments of the effect on learning of repetition, belongingness, after-effects, and various other factors.

———, *The Psychology of Wants, Interests, and Attitudes* (New York, Appleton-Century-Crofts, Inc., 1935). Reports work done to discover how wants, interests, and attitudes influence learning, and how they themselves are learned.

TYLER, Ralph W., "Educability and the Schools," *Elementary School Journal*, Vol. 49, December, 1948, pp. 200-212. The schools must examine the aims they accept and the means which they provide before they can determine who is educable. Educable for what and how? Basic to any sound educational thinking.

WRIGHTSTONE, J. Wayne, *Appraisal of Newer Practices in Selected Public Schools* (New York, Teachers College, Columbia University, 1935), 117 pp. Abstract—*Teachers College Record*, Vol. 36, May, 1935, pp. 718-719. Demonstrated that not only do children under modern learning practices learn more of the fundamentals but gain in many other ways not recognized by the older procedures.

PART II

EXPERIENCES AS THE CURRICULUM

With an understanding of the growing child as a background, the educative experiences of the modern elementary schools are now presented.

"The child never sees the curriculum that he does not create."

—E. T. MC SWAIN
Spokane, I.E.E.A.
April, 1949

6

Guiding Life in the School: The Curriculum

The child is the reason for the school. He is the one for whom learning experiences are provided. It is to his development that the work of the school is directed. Our understanding of the child as a growing individual and as a learner, his personality and his purposes and interests, supplies the foundation for developing an effective educational program. Thinking about changes to be made in the child is thinking in terms of goals to be achieved. Starting with subject-matter as the traditional school did was to start with the means and confuse it with the end. We try to avoid that mistake to-day.

The previous chapters dealing with the child supply a basis for the selection and the development of the curriculum of the school. The curriculum is those experiences of the child which the school in any way utilizes or attempts to influence. From the first part of the book certain principles are apparent as criteria for the development of the curriculum of the elementary school. In most cases the statements are made in a slightly different form than in Part I, or they combine several principles previously developed. The discussion here of each principle is purposely limited, for its background has already been adequately developed.

The traditional program and the newer program can be contrasted at many points. These contrasts are developed in the second section of the chapter. Research evidence of the value of the newer program is conclusive (the most significant of which is presented in the third section). Section four is devoted to definite suggestions to schools for developing a curriculum program.

I. CHILD STUDY SUPPLIES BASIC PRINCIPLES OF CURRICULUM DEVELOPMENT

The curriculum is considered to be the actual experiences of each pupil which are affected by the school. No longer is the curriculum considered to be a fixed body of subject-matter to be learned. We realize only too well that the curriculum for each child is the sum total of all his experiences which are in any way affected by the school. However rich or valuable any printed course of study may seem to be, the child benefits not at all if he does not have those experiences in the classroom.

The published course of study under this concept would then be rich

in suggestions for experiences, methods, and materials. It would be utilized by the teacher as an aid in selecting the experiences for any given class. Thus, it would not prescribe definitely what would be done for each class; rather it would be entirely suggestive. Another implication is inherent in the above principle, and that is that the curriculum is not a limited affair, but should be as broad as life itself.

The so-called extracurricular experiences which the school now offers are thus definitely a part of the curricular experiences. They are to be utilized for the well-rounded development of the child and are as important as any other phase of school life in relation to the planning of the curriculum.

There are many other influences affecting the education of the child. The movies and the radio and even television are among the most obvious of such influences. The school should be alert to utilize, influence, and assist in interpreting the experiences which the child has outside of school.

The experiences should be so selected and guided as to result in socialized human beings. We have long needed to recognize in our procedures that the child is first a human being and second a learner. Respect for the personality of each child has not been an outstanding feature of the educational program of the past. Freedom from fears, ability to exercise self-control, wide interests, sympathy, and enthusiasm are all marks of the well-adjusted individual. Certainly one of our goals should be that of achieving these personality characteristics.

More attention will need to be given to the planning of the social and emotional development than to the intellectual, for it is in those areas which we are definitely lacking. A careful study of our total school program may show that many of our practices in attempting to attain intellectual development have actually resulted in handicapping the social and emotional development of the child. Not only do we need to locate possibilities for experiences which will develop the social and emotional phase of the child, but we must also be concerned with the general school atmosphere in which those experiences take place. There is evidence that in informal situations there are many more opportunities for desirable growth socially and emotionally than there are in the formal school situation. It is a problem of carefully balancing values in all of these areas and developing the program in each individual school which will tend to result in a well-adjusted child.

Social adjustment is receiving more attention than ever before. Techniques for diagnosing the adjustment of the individual to the group are being developed and utilized. It is more important for the isolate to find acceptance in the group than it is that his or her reading level be increased by half a grade. If the school is to develop well-adjusted boys and girls it must have respect for the personality of each individual, provide opportunities for coöperative endeavor and develop methods of control

that are inherent in the learning situation. These all cut across the four classifications of objectives of the Educational Policies Commission.

Experiences should be so selected and guided as to give consideration to the emotional development of children. The emotional needs of children have been discussed in Chapter 3 under the two categories, *a sense of personal worth* and *mutuality*. The experiences a child has in the classroom do much either to aid the satisfaction of these needs or to hinder it. It is to the extent that these needs are satisfied that desirable emotional development takes place.

Classroom experiences should be considered for each child. Do they give him a feeling of success, of self-confidence, of assurance that his contribution will be received with respect, whether "right" or "wrong"? Or is the work so difficult *for him* that he can only expect to be successful with a small part of it? Has he failed or been told he failed so many times that he has learned to expect failure? Have his contributions been met with derogatory remarks and personal comments until he feels there is no further use to make an attempt and it is much more comfortable not to try?

Do the school experiences build up the mutual relationship among the children? Does each child feel a responsibility for contributing behavior, or information, or effort for the good of the group? Or is individual competition built up, so that he feels he must accomplish things for himself even at the expense of others, in order to get recognition? Are the child's experiences developing him emotionally so that he can work happily and democratically with the other children? Or is he being denied any opportunity for doing group planning and accepting responsibility for carrying out group activity? Does the teacher do all the planning and "tell" all the children what to do, permitting "no talking" in the classroom?

Experience should be so selected and guided as to develop democratic skills, attitudes, and procedures. If our democratic way of life is to survive and prove effective, it is essential that our children grow up using and understanding its techniques. If our children are during their school lives in the position of subjects to an autocratic ruler, no matter how benevolent, they are not learning to fill their place adequately in a democracy. Some of the most valuable and helpful experiences for children are the coöperative planning and thinking which lead to the establishment of rules of procedure on the school ground and in their own room. They will not only thus respect these rules but understand better the reason for following out the rules made by others.

We now know the importance of the relationship of the teacher to the pupils. Conflict produces conflict, integrative experiences produce integrative responses. The pattern of responses developed in the child has much more significance for a longer period of time than we formerly thought.

Democratic skills, attitudes and procedures are not learned the day

before an individual's twenty-first birthday. The foundation must be developed in the school.

To-day coöperation between persons and groups is increasingly necessary. Society demands that we work together on projects for the common welfare. Experiences must be provided in school in which children have the opportunity to work together, to plan, to execute, and to evaluate. The marking system promoted just the reverse—an individual striving to outdo the others in the class.

Control in such situations should not be the authoritative control of the teacher, the control "resides in the very nature of the work done as a social enterprise in which all individuals have an opportunity to contribute and to which all feel a responsibility." [1]

Experiences should be selected and guided so as to give consideration to the health and physical development of children. Proper lighting and ventilation have been the limit of attention given health in many classrooms. In the last few years it has been forced upon us that children who come to school hungry and cold were in no condition to learn.

In order that the school may realize its objectives, it has been necessary for it to expand its function. In many places health examinations and corrective work are a part of the regular procedure. Food and clothing are furnished. The expansion of this type of service in recent years is tremendous.

Activities must be diversified to give periods of change and fulfill the needs of the child at his maturation level. Rest periods should not be neglected. Much stimulation must be followed by a calming situation. The daily schedule must be carefully planned to meet this criterion.

Experiences should be so selected and guided as to make provision for the individual differences in children. Children differ in their rate of development, in the status of their development at any one time, and in their own individual abilities. Comparisons are made between children instead of in terms of the child's own growth pattern. This point was made in Chapter 2 in connection with the child's physical development and applies just as certainly to the intellectual and social phases of growth.

Teachers render lip-service to the provisions for individual differences, but many of their teaching procedures carefully avoid them. The common concept of "certain requirements to be mastered in each grade" has been the greatest violator of the principle.

Experiences must be so selected and guided as to be suitable to the maturation level of the child. This principle is one most frequently violated in the traditional school, for the logical development of subject-matter does not conform to the developmental levels of the child.

Maturation needs to be studied from the physical, intellectual, and

[1] John Dewey, *Experience and Education* (New York, The Macmillan Company, 1938), p. 61. Reprinted by permission of the publishers.

social aspects. The chapters on growth and emotional development pointed out many things which needed to be considered. Fine coördination of the young child, reading experiences for the immature, and group projects involving a number of children for the kindergarten boy or girl are all violations of the knowledge we have of how children grow.

Research has contributed a great deal to our knowledge of ways in which children mature. Even if much of the research was motivated by the philosophy of the traditional school, it can be reinterpreted so as to be of great value. Washburne's researches in arithmetic, investigations dealing with social-studies concepts, and reading-readiness studies are only a few which have great significance.

Experiences should be so selected and guided as to meet the needs, purposes, and interests of children. Experiences should meet the needs of the learner, or there is no justification for them. This principle, however, must be carried farther. The needs should not be recognized by the school alone but also by the child. If he does not recognize his need for these experiences they are not likely to be of much value when the need does arise. If society believes the child has need of certain things, it is the responsibility of the school to help the child to identify those needs. If the child has few recognized purposes of his own, it is important that the school develop more. It is only when experiences do meet such recognized needs and purposes that they are effectively learned and really educative.

Experiences should be selected and guided so as to be educative rather than "mis-educative." The cry of the extreme progressive school is that the child must have experiences. Overlooked is the fact that an experience can either be good or bad. It has the possibility for providing for further growth in a worth-while direction, or of restricting growth or directing it into undesirable channels.

Dewey's discussion of this point is most pertinent. He says: [2]

> Any experience is mis-educative that has the effect of arresting or distorting the growth of further experience. An experience may be such as to engender callousness; it may produce lack of sensitivity and of responsiveness . . . it may tend to land him in a groove or a rut. . . . An experience may be immediately enjoyable and yet promote the formation of a slack and careless attitude. . . . Again experiences may be so disconnected from one another that, while each is agreeable or even exciting in itself, they are not linked cumulatively to one another. . . . The quality of any experience has two aspects. There is the immediate aspect of agreeableness or disagreeableness, and there is its influence upon later experiences.

Careful consideration needs to be given to the evaluation of the results of experiences. Neither the traditional nor the modern school has given sufficient attention to this point. The traditional school provided experiences for pupils that were in some cases bad and in other cases good. If

[2] From John Dewey, *Experience and Education*, pp. 13-14, 17. By permission of The Macmillan Company, publishers.

an English class eventuated in utter disgust with any "good" reading, obviously the result was bad. If an English class in a progressive school has the same result, it is just as bad.

Social values. The school must be a constructive agency in the development of our democratic society. The students should leave the school with the desire and ability to retain the cherished ideals and honored traditions of our democracy, with the will to protect the best forces and institutions of contemporary society, and with the determination to blaze new paths whenever the way leads to social improvement. To attain these ends we need to think through our whole school program and provide more effective situations than we have at present. The total school program from grades one to twelve needs to be studied for this purpose.

Experiences, activity, freedom are not enough. They must be so utilized as to lead to growth in desirable directions. Obviously, as Dewey points out, a unit of work which wanders all over may be enjoyable but it destroys continuity of development.

The implications for planning are inherent, especially in this criteria. If experiences are to be educative, the best judgment possible must be used in their selection and guidance. Stressing the planning needed by the teacher is not an implication that it is restricted to the teacher. *There is a real place for pupil planning,* but by no means should it be left entirely to the pupils as some teachers have done.[3]

Experiences should be so selected and guided as to enlarge the child's understanding of important concepts. This understanding can best take place when a number of conditions of learning are met. The greater the variety of associations that can be made with the concept, the better it is learned. What a thing is not, is helpful in clarifying what it is. Examples of important concepts in each area are presented in their respective chapters.

Experiences must be so selected and guided as to aid in the development of new meanings and expanded experiences through the utilization of previous meanings. This statement means that if learning is to take place it must begin with elements which already have meaning for the child. With these as a point of departure, newer meanings are related to these and his background is expanded. This is the underlying principle for so much recent stress on utilizing community resources. Many factors in the community are already somewhat familiar to the children, but any unit of work dealing with them would certainly result in expanded meanings being developed.

If this principle is accepted, no argument is necessary for the need of continuity and connectedness. What the child has learned is more than a "fixed possession," it is a means of opening up further vistas of learning.[4]

This problem of continuity is more difficult of solution than the con-

[3] Planning is discussed in some detail in Chapter 7.

[4] For a more detailed discussion of this point, see Dewey, *op. cit.*, p. 90.

tinuity of the traditional school. It required only a logical analysis of the subject-matter to be covered. The newer interpretation requires knowing each group of children and knowing what experiences and understandings are meaningful to them. The next task is to devise ways of utilizing this knowledge to present new experiences that will expand these meanings in desirable directions.

Experiences should be so selected and guided as to develop new meanings through adaptation to the needs of the local community, utilization of available local resources, compensation where possible for environmental lacks, and participation in a wide variety of environmental situations. This follows from the previous principle, but is sufficiently important to stand alone. The centering of schools in the community means that there would need to be much more analysis of the local situation, as a basis for curriculum-planning. The schools must be conscious of the problems of the local community, must know what local resources can be utilized for educational experiences, must supplement, if possible, any environmental lacks. This procedure will result in an environment-centered curriculum.

Actually, at this point the newer program has been weakest. Some of the social-studies and science programs have made some progress but there is still relatively little clarification. It is helpful to remember that we all have certain problems in common, but there are many local variations for which adaptation needs to be made. We all eat, but spoon-bread is southern, thick clam chowder is New England's, onion soup is the Brown Derby's, pompano en papillote is Antoine's, and lutifisk is for certain church suppers in Wisconsin.

Experiences should be so related and guided as to utilize some important aspect of thinking. One of the largest and most neglected responsibilities of the school is to develop in each child the ability to think well. Materials used in the schools must, of course, be in themselves worth while, but their main function is to furnish the means for practice in thinking. In setting up their own problems pupils learn to think through a situation, analyze what the problem is and what they must learn to find the solution. In seeking the desired material they learn to consider it critically to find what is pertinent. In determining the solution they synthesize what they have learned. Then when they have a solution, they critically evaluate it in the light of all factors.

Critical thinking is most sorely needed in the world to-day. If all pupils could be taught to think critically and honestly about the things around them, advertisers and manufacturers would have to change their tactics; labor problems would be readily settled in case they ever arose; and democratic government, from the nation to the small organization, would be most successful.

But thinking cannot take place in a vacuum. To think, one must think about something. Further, because a person can think about one type

of material, such as scientific or mathematical or political, it does not follow that he can think well about another type.

Experiences should be so selected and guided as to make possible successful achievement by the child. In many schools the totality of learning was disregarded. While the child was learning arithmetic his attitude toward number work or school meant little or nothing to the teacher. We now know some other learning was taking place, at least some change in attitudes. (Were you ever present when a group of teachers was told they had to study statistics?) The fact that favorable attitudes are developed when the child is successful is sufficient to warrant the success criterion. Also study after study has shown that a successful experience results in much more learning than an unsuccessful one.

Summary of guiding principles. These guiding principles for the development of the curriculum of the modern elementary school summarized for easy reference are:

1. The curriculum is considered to be the actual experiences of each pupil which are affected by the school.

Experiences should be so selected and guided as:

2. To result in socialized human beings
3. To give consideration to the emotional development of children
4. To develop democratic skills, attitudes, and procedures
5. To give consideration to the health and physical development of children
6. To make provision for the individual differences in children
7. To be suitable to the maturation level of the child
8. To meet the needs, purposes, and interests of children
9. To be educative rather than mis-educative
10. To enlarge the child's understanding of important concepts
11. To aid in the development of new meanings and expand experiences through the utilization of previous meanings
12. To develop new meanings through adaptation to the needs of the local community, utilization of available local resources, compensation where possible for environmental lacks, and participation in a wide variety of environmental situations
13. To utilize some important aspect of thinking
14. To make possible successful achievement by the child

If these criteria are to be met, it is inherent that the teacher know children, know subject-matter, know the local environment, and so carefully plan, that the optimum values are derived from the combination. Planning is essential. Planning does not mean, however, that everything is predetermined.

The traditional program cannot meet these criteria. In departing from the traditional many schools fell into the pitfall of a negative approach. That is, the newer education should not be what the older education was. In the earlier days of any new departure it was easy to succumb to this fallacy. Instead, the procedure should be to build constructively by carefully considering the implications of the new philosophy. Practice in many schools furnishes evidence that this phase of constructive building

is one to which educators are giving serious consideration both in thought and practice. The material in Part II has been especially selected to assist in making the transition.

The method of organizing experiences in order to meet effectively the criteria just outlined appears at present to be by units of work. The general procedure for developing units is treated in the next chapter; then sources of experiences and finally a series of chapters dealing with the various areas of experiences follow. In applying the criteria and suggestions discussed, it must be remembered that conditions vary, our society is in a period of rapid change, and research and experience are continually contributing to educational procedure.

II. CONTRASTS OF THE OLD AND NEW IN EDUCATION

There are many points at which the contrast between the traditional and newer procedures is marked. The variance in practice of these differences can best be shown by placing the old and the new together.[5]

DIFFERENCES BETWEEN OLD AND NEW PROCEDURES

Old	New
A. Goals	
1. Preparation for the future	1. Making the most of present living
2. Teaching of facts and skills which were necessary for adult life	2. Facts and skills used to contribute to the total development of children
3. Passing on of the cultural heritage	3. Understanding and control of present-day personal and social needs
4. Withdrawal from the community	4. Utilization of resources of the community
5. Static aims and materials	5. Acquaintance with a changing world
B. Learning	
6. Learning dictated, prescribed, and controlled by text and teacher	6. Learning through experiences involving planning, self-direction, discovery, exploration, and thinking

[5] This comparison represents a compilation from a number of similar comparisons, see: John Dewey, *Experience and Education* (New York, The Macmillan Company, 1938), pp. 5, 6.

Samuel Everett, "Curriculum Making and the State of the Nation," *North Central Association Quarterly*, Vol. 11, October, 1936, pp. 215-221.

M. Madilene Veverka, "Some Characteristics of an Activity versus a Formal School Program," *Elementary Curriculum Bulletin*, No. 223 (Los Angeles City Schools, May, 1936).

Laura Zirbes, *Curriculum Trends* (Washington, D. C., Association for Childhood Education, 1935).

7. Assigning, questioning, and evaluating by teacher	7. Self-assignments, discussion of findings, and evaluation of own work by children
8. Acquisition of skills and abilities by isolated drill	8. Acquisition of skills and abilities as a result of a need or lack
9. Learning through studying about life	9. Learning through active participation in group and community living
10. Things to be learned selected according to sequence in subject	10. Things to be learned selected according to maturation of children
C. Organizing Experiences	
11. Course organized into highly specialized subjects	11. Subject lines being broken down and organization taking place around broad fields or functional areas
12. Courses tended to be worked out in advance	12. Planned in advance but with much opportunity for pupil-participation and direction
13. Only intellectual materials of highly academic type utilized in courses	13. All types of experiences utilized: visual aids, radio, community resources
14. Definite distinction between curricular and extracurricular activities	14. All experiences affected by the school considered part of the curriculum
D. Discipline	
15. Imposition from above, rigid and passive	15. Expression and cultivation of individuality in a working situation
16. External discipline	16. Control inherent in the social situation in which all are working for a common purpose
17. Competition, striving to beat one's associates	17. Coöperation with others to achieve a common purpose
E. Administrative Procedures	
18. Concern with efficient routine	18. Aid to improving the educational experiences of children
19. Scheduling in small inflexible blocks of time	19. Scheduling in longer flexible blocks of time
20. Adherence to definite class divisions	20. Flexible grouping of pupils

These points could be broken down into minute details and many added, but they are sufficient to show the contrast between the usual type of traditional school and some of the things the newer school is striving to provide. Obviously there are very few schools which might be said to be at either extreme in all characteristics. There are many schools in which practices at both extremes can be found. Unfortunately, consistency in applying our philosophy in all our practices has not been a thing which has caused many educators sleepless nights. Then, too, the inconsistencies

and conflicts between our social, economic, and educational philosophies have not bothered us as much as they should.

III. NEWER PRACTICES ARE BETTER!

Numerous researches. The accumulation of evidence from research shows conclusively that the modern programs of education make greater contributions to all of the objectives than do the traditional programs. The volume edited by Leonard and Eurich [6] along with others [7] show that according to standardized tests in the skill subjects, children in activity programs do as well as those in traditional schools. These studies are of utmost significance, for the most obvious result to be expected was that lessening the time on drill would lessen achievement.

In areas other than skills the difference is markedly in favor of the modern programs. Eurich, after carefully studying all of the evidence summarized in *An Evaluation of Modern Education,* draws these conclusions: [8]

Are the products of the modern schools "disciplined" in the basic skills? On no other question that the critics have raised in the layman's mind is the evidence more comprehensive and conclusive.... In practically every study and in almost every skill that has been considered, as the charts so strikingly show, children in schools following the newer practices are slightly if not markedly superior to children in the more conventional schools.... The teacher, therefore, remains the key factor and, in all probability, is of even greater importance in determining the effectiveness of the newer methods than was the case with the old.

Are the products of the modern school "disciplined" in knowledge and in their use of it? The results of various subject-matter tests at the elementary, the secondary, and the college levels are wholly in line with the relative effectiveness of the newer and older practices in the development of skills.... In ability to interpret facts, in ability to generalize—although the data on these points are somewhat more meager—the same picture obtains.

Are the products of the newer schools sufficiently "disciplined" to work successfully at the higher educational levels? The answer is again "yes," whether it is considered from the standpoint of the subsequent success of elementary-school children after they reach high school, or of high-school pupils after they reach college.

[6] J. Paul Leonard and Alvin C. Eurich, *An Evaluation of Modern Education* (New York, Appleton-Century-Crofts, Inc., 1942), 299 pp.

[7] Especially significant are the numerous studies published from 1939 to 1941 reporting the New York City results. See J. Wayne Wrightstone, "Evaluation of the Experiment with the Activity Program in New York City Elementary Schools," *Journal of Educational Research,* Vol. 38, December, 1944, pp. 252-257.

Also L. Thomas Hopkins and James E. Mendenhall, *Achievement at Lincoln School* (New York, Bureau of Publications, Teachers College, Columbia University, 1934).

E. E. Oberholtzer, *Integrated Curriculum in Practices,* Contributions to Education, No. 694 (New York, Bureau of Publications, Teachers College, Columbia University, 1937).

J. Wayne Wrightstone, *Appraisal of Newer Elementary School Practices* (New York, Bureau of Publications, Teachers College, Columbia University, 1938).

[8] Leonard and Eurich, *op. cit.* Excerpts from pp. 280-285.

Are the products of the newer schools physically "disciplined"? On the basis of the one study the conventional schools are slightly, but not significantly, ahead of the newer programs in equipping pupils with health information. On physical fitness as expressed in a physical fitness index, however, the products of the newer schools have considerably higher ratings. The data are meager and cannot, therefore, be relied upon with any degree of assurance.

How adequately are the products of the newer schools prepared in their social-personal development for effective citizenship? It appears that the newer schools are far and significantly more effective in developing self-initiative, critical ability, coöperativeness, and civic beliefs. Likewise, they are more effective, again from relatively meager evidence, in developing qualities of leadership. . . . The tentative evidence strongly suggests the conclusion that the modern schools tend to develop better citizens, more fully adjusted persons, and a larger proportion and higher quality of leaders.

The New York City experiment was the most comprehensive study as yet undertaken. The conclusion of the study is briefly stated: [9]

"The activity program was as effective as the longer established program in developing children's mastery of fundamental knowledges and skills, that it was more effective in developing children's attitudes, interests, social behaviors, ability to think, and ability to work on their own initiative."

Many interesting results came from the studies. The behavior on trips was compared. The activity group showed less rigid control and more acceptable behavior.[10] Another study showed the need for certain precautions on the part of the teacher. In the activity program one-fourth of the class did fifty per cent of the participation (talking), while in the traditional program the same proportion did only forty-one per cent. However, the ratio of the pupils' self-assertative items of participation to recitational items was markedly higher in the activity program. In the activity program the negative comments of the teacher (Don't do that) were in larger proportion to the positive, than in the traditional.[11] Such studies are examples of the need for continued careful analysis of practice and continued improvement. We do not know enough, as yet, of what actually happens in our classrooms.

Evaluation of wider objectives. One of the most comprehensive and also most highly publicized comparisons is Wrightstone's 1938 report.[12] Wrightstone measured differences between pupils in traditional schools and those in progressive schools. The significance of his study is due to

[9] Wrightstone, *op. cit.*, 1944, p. 257.

[10] Robert L. Thorndike, John J. Loftus, and Bernard Goldman, "Observations of Excursions in Activity and Control Schools," *Journal of Experimental Education*, Vol. 10, December, 1941, p. 146-149.

[11] Arthur T. Jersild, Bernard Goldman, Catherine L. Jersild, and John L. Loftus, "Studies of Elementary School Classes in Action, II Pupil Participation and Aspects of Teacher-Pupil Relationships," *Journal of Experimental Education*, Vol. 10, December, 1941, pp. 119-137.

[12] Wrightstone, *op. cit.* See *Time* and *News Week* for the last week in October, 1938, for examples of recognition which the study received.

the fact that he measured differences in achieving objectives, rather than limiting his comparisons to skills. His evaluation dealt with:

Desirable Social Relationships
Individual Aptitudes
Power of Critical Thinking
Command of Knowledges and Skills
Physical and Mental Health
Participation in Worth-While Activities

The instruments he used to obtain measurements for each of the objectives are most interesting. In some cases he used standardized tests, in other cases he had to construct special tests. Questionnaires, rating scales, and observation check-lists were also used. The detailed list of objectives, with the instruments he used in appraising the extent to which each group realized the objectives, is given in Table IV. The comprehensiveness of the study can be realized through a careful study of this table. If one is interested in further suggestions for measuring the extent to which the objectives of elementary education have been achieved, comparable suggestions given in Table XX in Chapter 15 will be of interest.

TABLE IV

CARDINAL OBJECTIVES OF ELEMENTARY EDUCATION AND INSTRUMENTS OF APPRAISAL *

Cardinal Objectives of Elementary Education	*Instruments of Appraisal*
A. PRACTICE OF DESIRABLE SOCIAL RELATIONSHIPS	
1. Information about important elementary current affairs of social, economic, and esthetic nature	1. Specially constructed information test entitled Current Affairs
2. Broad-minded social beliefs and attitudes related to topics and phenomena studied in the elementary school	2. Specially constructed test on social beliefs and attitudes entitled "What Do You Believe"
3. Honesty in scoring own tests and papers	3. Maller, J. B., Self-Marking Test
4. Performance of acts indicative of initiative, cooperation, leadership, and work spirit	4. Controlled-observation and anecdotal record techniques. See "Constructing an Observational Technique" by J. W. Wrightstone, *Teachers College Record*, Vol. 37, October, 1935, pp. 1-9
B. DISCOVERY AND DEVELOPMENT OF INDIVIDUAL APTITUDES	
1. Development of aptitudes such as telling and writing stories, writing poetry, drawing and painting, construction, music, and dancing	1. (*a*) Specially constructed questionnaire; and (*b*) Judgment Rating Scale for Creative Writing; and (*c*) Judgment Rating Scale for Creative Graphic Arts; and (*d*) Meier-Seashore Art Judgment Test
C. CULTIVATION OF POWERS OF CRITICAL THINKING	
1. Finding and selecting data on problems	1. Specially constructed test entitled Obtaining Facts for social studies

* J. Wayne Wrightstone, *Appraisal of Newer Elementary School Practices* (New York, Teachers College, Columbia University, 1938), pp. 163-164.

Cardinal Objectives of Elementary Education	*Instruments of Appraisal*
2. Drawing conclusions and inferences from data	2. Specially constructed test entitled Explaining Facts for social studies
3. Applying conclusions or generalizations to events	3. Specially constructed test entitled Applying Facts for social studies
D. COMMAND OF COMMON INTEGRATING KNOWLEDGE AND SKILLS	
1. Reading silently with ease, speed and comprehension	1. (*a*) Metropolitan Reading Tests, Primary II: Form A. (*b*) Stanford Reading Test: Form W
2. Spelling with accuracy the normal vocabulary	2. (*a*) Metropolitan Spelling Tests, Primary II: Form A
3. Writing and speaking with freedom from gross errors	3. (*a*) Metropolitan Language Tests, Primary II: Form A (*b*) Stanford Language Test: Form W
4. Performing accurately in arithmetic the four fundamental operations and knowing when to use them	4. (*a*) Metropolitan Arithmetic Test, Primary II: Form A, (*b*) Stanford Arithmetic Test: Form W
E. SOUND PHYSICAL AND MENTAL HEALTH	
1. (*a*) Information about proper physical health habits and attitudes, first aid, and effect of harmful drugs and narcotics; (*b*) physical strength and fitness index	1. (*a*) Specially *constructed tests on* Health Awareness, (*b*) Rogers, F. R., Physical Capacity Tests
2. Mental health habits and attitudes indicating (*a*) emotional stability, self-control, and (*b*) friendliness or sociability	2. (*a*) Specially constructed Personality Trait Indicator, Part I, Personal Adjustment; Part II, Social Adjustment
F. APPRECIATION OF WORTH-WHILE ACTIVITIES	
1. Participation for enjoyment in such activities as art, music, reading, games, experimentation, and travel	1. Specially constructed questionnaire on participation in voluntary extra-school leisure activities

The findings indicated that in every case except one, that of health information, the difference is in favor of the newer practices. If interpreted strictly, many of the differences were not considered statistically significant, for they did not have a critical ratio equal to 3.0. However, the fact that all of the differences are in the same direction except one makes the results much more significant than in the case of one such difference.[13] This fact, coupled with the ratios which were above 3.0, makes the results highly significant in favor of the newer practices.

IV. DEVELOPING A NEWER PROGRAM—SOME SUGGESTIONS

We recognize good educational practices. There are hundreds of excellent examples and descriptions of such practices. Yet there is a

[13] For a discussion of the significance of small consistent differences see Dorris May Lee, *The Importance of Reading for Achieving in Grades Four, Five, and Six*, Contributions to Education, No. 556 (New York, Teachers College, Columbia University, 1933).

tremendous educational lag. The process by which successful curriculum improvements have been brought about needs much more study.[14]

Any system involved in a program of curriculum development should have guides. Since the problem is of such great importance, a few guiding principles have been summarized here but not discussed in detail.

1. The curriculum is considered to be the actual experiences of each pupil which are affected by the school.
2. Curriculum development is conceived as a process of the improvement of the total staff in the guidance of pupil experiences.
3. Curriculum development is a continuous process carried on within each school system.
4. Existing subjects do not necessarily constitute the best organization of pupil experiences.
5. Careful consideration should be given to the utilization of the guiding principles for the selection and guidance of pupil experiences.
6 Curriculum development is a democratic process utilizing the services of pupils, teachers, parents, community, and outside educational agencies. Too often it has been only a function of teachers.
7. The teacher is responsible within broad limits for the guidance of pupil experiences. This means that teachers must be encouraged and be free to experiment.
8. A course of study is only one means to be utilized for the improvement of teachers in the guidance of pupil experiences.
9. The course of study should be rich in suggestions for experiences, methods, and materials. It should not be prescriptive.
10. The individual school provides one of the most effective units for developing desirable improvement.
11. Each leader must have basic respect for the contribution and personality of the members of the study group.

Strategy and time of group efforts are important if the leader is to coördinate group efforts. Miel has a number of suggestions: [15]

1. Begin where people are. Determine readiness, learn what changes are desired.
2. Respect the need for security. Respect growth rates and differences in individuals.
3. Avoid unsound short-cuts. Some are administrative *fiat*, overdependence upon the written word, attempting to get uniformity. "It is all too easy to overestimate the readiness for change on the part of others when one has himself had experiences that make change seem imperative."
4. Apply the principle of reality. (a) In some matters where technical decisions are required, it may be well to make the change and then submit the results for

[14] Helpful in this regard is the scholarly analysis of Alice Miel's, *Changing the Curriculum* (Appleton-Century-Crofts, Inc., 1946). Also of more limited value are certain yearbooks of the Association for Supervision and Curriculum Development, *Leadership At Work* (1943), *Group Planning in Education* (1945), *and Leadership Through Supervision* (1946), (Washington, D. C., The Association, N. E. A.).

[15] Adapted from Miel, *op. cit.*, pp. 181-185. Here can be found the elaboration of these points.

public approval or disapproval. (b) In those matters highly charged with emotion, such as sex education, it is best to plan with parents as how best to provide such education. (c) In still other cases the concern of the community might well be used to show the need for curriculum improvement.

The working together of the entire staff. Curriculum development is a process by which the entire staff grows together. The group must formulate the problems on which they wish to devote their time and energies. The term "in-service training for teachers" is very poor. It needs to be replaced by a phrase which will give the connotation of the entire staff working together to solve the problems facing them. "Coöperative staff planning," "coöperative group work," or some such term gives a much better picture of the process. The administrator can develop as well as the teacher.

Increasing the entire staff's ability to utilize the guiding principles more effectively is the aim of such a program. This improvement should result in better learning situations for boys and girls. If such group work is to be effective, the child and his development must occupy the center of focus.

The desired results of a program are simple to state. The object is to have the staff develop and accept guiding principles as important and then improve their ability to carry them out effectively. The steps in attaining these results, however, are by no means so simple. In general, before any more than lip-service can be paid to a principle, the staff must understand the background from which it developed and some of the implications it has for school practice. Further attempts to apply the principle will lead each individual to see an increasing number of implications for practice.

The devices which can be utilized in the process are numerous. Reading, discussion, outside speakers, studies of children, studies of the community and its resources, actual participation in experiences planned for children, demonstration lessons, observation, writing of units, and studies of newer media of learning such as radio, visual aids, and excursions are all effective means of furthering teachers' understanding. The staff's learning process is the same as the pupil's but on a higher level of maturation. The one difficulty of many programs of training-in-service is that no opportunity is allowed the teacher to be an active participant. She is "talked at" rather than being an essential part in the procedure. The "talking at" is no more effective for teachers than it is for children. The experiences that the teachers have in curriculum development should be so selected and guided as to meet their needs, purposes, and interests.

While it was pointed out that the teachers' learning process was similar to the pupils', the relationship between the principal and teacher is not the same as between teacher and pupil. "The former relationship is a peer relationship, one in which different kinds and amounts of competence and maturity are present in both parties. This means that the

task of leadership is all the more delicate and requires the utmost understanding of past experience and present motivation." [16]

Actual studies of pupils and community. One device that has not been used sufficiently is to have teachers make actual studies of the pupils and the community. Studies of children's out-of-school activities offer many valuable suggestions for the improvement of the curriculum experiences. Their reading, their play interests, their hobbies, the movies they enjoy, and the radio programs to which they listen, all furnish teachers new bases for understanding children. From such studies can also come a fuller development of the concept of growth. For instance, the results of a radio-listening study when combined by the teachers of the various grades yield some insights into maturation that no amount of reading would do.

A second source for studies which yields profitable results is the classroom reactions of boys and girls. This opportunity for observation and analysis is limitless. One example is the study of personality problems in relation to language difficulties made by the Madison teachers.[17] From this study they realized for the first time that language difficulties were very closely related to personality difficulties, one of the most important concepts for influencing language work in the elementary school. In this case the results of the study have influenced the thinking of many more than the teachers who made it, for it has received rather wide attention.

Another example is a study made by one teacher who was concerned with the most effective method of presenting group reports. Some groups were in the habit of supplementing their reports by some type of visual presentation. On one unit she had the groups utilize some manner of visual aid to supplement the oral presentation. In most cases the children used maps or pictures which they had drawn. In a second unit the oral reports alone were used. By as careful measures as she could develop, she found that they remembered more and remembered it longer when the visual presentation supplemented the oral. These are only two examples, but the imaginative teacher, principal, or supervisor can develop many such studies.

A third source for studies is the pooling of classroom experiences. The list of language activities compiled by the Burbank teachers is the result of such a pooling.[18] Each teacher listed the language activities which developed during the year in the units she taught. The lists of the individual teachers were then combined to furnish a master list. This study resulted in the teachers' becoming conscious of more chances to utilize the opportunities for language development and gave them a better idea of the development of language throughout the grades.

A similar study of number experiences showed clearly that in grade

[16] Miel, *op. cit.*, p. 168.

[17] See pages 354-456 for a more detailed report.

[18] See pages 364-366 for the list.

three and above, the teachers were not making use of the opportunities that occurred to develop number concepts. The primary teachers were doing an excellent job of utilizing incidental number opportunities, but other teachers were overlooking them. There are many things to be studied by the technique of pooling classroom experiences. It may not result in a completely scientific study which would merit publication in a research journal, but if it has increased the insight of the teacher and improved her guidance of learning experiences, it has been more than worth while.

A fourth source is the study of the resources of the community by the teachers. Before the teacher can effectively utilize community resources in her classroom, she must know something about them. There are very elaborate outlines for community study, and there are very simple ones. The staff of the elementary demonstration school of the University of Minnesota compiled a bulletin on *Using Community Resources* which lists six areas of community resources. This list appears on page 264. The material collected for the pioneer unit from the attics of a New England town as described on page 231 is another example of too often unutilized "gold mines." Helpful references for this problem will be found in the bibliography at the end of Chapter 8.

Teachers must have experiences. Another technique, which has been utilized very effectively in Los Angeles County, is giving teachers the same experiences they are supposed to give to their pupils. Excursions of teachers have been conducted for a number of years to various industrial, commercial, governmental, and recreational situations to be found within easy reach. Also, meetings have been held where teachers had the opportunity actually to work with various art and music media. The type of knowledge which the teacher thus gains is essential for her background if she is effectively to guide learning in the modern classroom.[19]

Consultants? Finally, some consideration should be given to the rôle of the outside "expert" or consultant. If such a consultant can furnish assistance in guiding teachers' experiences so that they in turn become more effective in guiding pupils' experiences, his services would be invaluable. If the consultant comes in with the idea of dictating or imposing, the only result can be failure for the program. Often he can help a staff think through its problems. Also, he can bring out certain points, points which are sometimes very difficult for one in the system to discuss.

Lay participation. There have been many suggestions that lay groups be used in curriculum improvement. It is a revelation to talk and plan with parents on what they really want for their children. In many cases the parents are far in advance of school people.

[19] For helpful suggestions in planning such experiences, see *Utilization of Community Resources in the Social Studies, Ninth Yearbook* (Cambridge, Mass., National Council for the Social Studies, 1939), Ch. II; also Edward G. Olsen, *School and Community Programs* (New York, Prentice-Hall, Inc., 1949).

One effective plan is to use the classroom parents as a group to study the problems of the given room. Opportunities for effective use of the people of the community for curriculum development are numerous but require considerable imagination, and in some cases courage, to venture into new paths. One illustration is in connection with soil conservation. The farm members of the soil conservation districts of Whitman County were invited to a dinner on the State College of Washington Campus. Meeting with teachers and administrators of the area and members of the School of Education, they discussed what the schools could do in the problem of soil conservation. Out of that meeting grew a number of projects throughout the county. None of those folks will ever urge the school to limit its program to the three R's.[20]

Opinions of parents, pupils, and teachers. There have been a number of questionnaires used to obtain opinions of lay groups and teachers as to what should be done to improve the schools. The most complete provisions for obtaining such opinions has been developed by Hand, Finley, and Dolio. They have developed questionnaires for parents, pupils, and teachers on a variety of questions. Responses of all three groups can be compared. Detailed suggestions for use and tabulation have been prepared by Hand.[21]

A philosophy should be developed. A study by Chapman[22] of the philosophy of education underlying elementary courses of study shows that in only a few cases do courses actually state a philosophy of education. In bulletins issued by seventy-five cities and states a philosophy was only directly stated in nine cases. In many other cases it was implied. This is a striking neglect in course-of-study bulletins.

One of the techniques of curriculum revision is the development of a philosophy of education by all of the staff. A suggested list of questions might be helpful in stating a philosophy. These are: [23]

1. What is the meaning of life?
2. What is the accepted theory of the structure and processes of society?
3. What are the special functions of the school?
4. What view is held in regard to the growth of personality?

[20] For further suggestions see G. Robert Koopman, Alice Miel, and Paul J. Misner, *Democracy in School Administration* (New York, Appleton-Century-Crofts, Inc., 1943).
Alice Miel, *Changing the Curriculum, op. cit.*
Helen Storen, *Laymen Help Plan the Curriculum* (Washington, D. C., Association for Supervision and Curriculum Development, N. E. A., 1947), 75 pp.

[21] Harold C. Hand, *What People Think About Their Schools* (Yonkers, New York, World Book Company, 1948), 219 pp. Copies of the parents' and high school pupils' questionnaire, are obtainable from the World Book Company. The others may be mimeographed by requesting permission.

[22] Alvan L. Chapman, *A Study of the Philosophy of Education Underlying Elementary School Courses of Study,* Unpublished dissertation, University of Texas Library, Austin, Texas, 1939.

[23] George S. Counts, "Philosophy and Research," *School and Society,* July 27, 1929, p. 105. This was the classification accepted by Chapman after reviewing all the recent writing on the subject.

5. What is the nature of the individual?
6. What is the nature of the learning and educative process?

It is a most valuable experience to have teachers really state what their philosophy of education is. A check-list which includes a range of positions is excellent for getting teachers to think through their positions. If the check-list given in the appendix of *The Activity Movement* [24] is rearranged so the five positions will not be in the same order, it makes a most usable device. This has been used successfully in curriculum classes and with curriculum committees.

The statement of philosophy should not be the first step. It should grow out of other curriculum work. It must be remembered that every teacher has a philosophy implied in her practices, whether or not it is stated.

Written materials. Materials prepared for use with the local staff have many values, both to those who prepare them and to those who use them. A wider variety of materials, departing from the "course-of-study," has come into use. Miel outlines the following as having promise: [25]

1. Curriculum records—descriptive accounts of actual curriculum experiences of children showing how the activity originated, steps taken in developing it, successes and failures, materials found useful, values received, etc.
2. Resource units—a wealth of suggestions for possible use in guiding the study of a group of learners along some line of general interest and value.
3. Teaching aids—specific bulletins giving help to teachers along special lines such as conducting discussions, encouraging creative writing, planning successful excursions, making use of certain visual aids, and so on.
4. Policies and procedures—brief statements of instructional policies and the procedures necessary for carrying them out as agreed upon by faculty groups.
5. Materials on child development—summaries of findings in the field of child development that will help teachers to plan and work more wisely with children.
6. Bulletins on community resources—names, addresses, and telephone numbers of persons with whom to make contact in making arrangements for use of people and institutions in the instructional process, along with suggestions for making best use of each resource listed.

Should a teacher be asked to write up each unit? To ask a teacher to prepare accounts for each unit taught is too much. There might be several solutions. One would be to have the teacher write up one unit a semester or year. Another way which has not been utilized as much as possible is to develop a file for each unit commonly taught in the system. Teachers can add accounts of successful approaches, experiences that were worth while, and valuable references. Other material can be added such as means of evaluation, pictures of activities, examples of children's work, and anything else that might prove suggestive. Soon, if an effort is made to keep the material coming in, there would be accumulated a consider-

[24] National Society for the Study of Education, *The Activity Movement, Thirty-Third Yearbook*, Part II (Bloomington, Ill., Public School Publishing Company, 1934).
[25] Miel, *op. cit.*, pp. 117-118.

able body of very worth-while curriculum material for teachers to use. If the system wishes to compile source units, these accumulations furnish the best possible basis for a committee with the responsibility of writing one.

Changes can be effective. Newer practices are the result of the interpretation of a philosophy and psychology. Procedures have slowly evolved. There has been much more lip-service paid to the underlying philosophy and psychology of the movement than there have been attempts to put them into practice. One of the main reasons for the slow development has been the fear that pupils would not make as much progress in the fundamentals under the newer procedures as under the more traditional ones. The studies by Wrightstone and the many others which substantiate them should eliminate that fear.

Progressive practices do result in better learning of the fundamental knowledges and skills which the elementary school has so long stressed. They do even more; they make more progress toward attaining the objectives which the modern elementary school considers important. No longer need there be any hesitation on the part of school systems in departing from the traditional practices.

A word of caution is needed. Change must come gradually. A principal, superintendent, or supervisor cannot revolutionize a school system in one semester. Change must be made on a sound basis of underlying principles and understanding. It must not be thought that the expressions of such cautions indicate a traditional viewpoint.

The emphasis of the whole volume is upon making improvements in the instructional process which will result in an increased realization of the objectives of elementary education. Certain cautions have been stressed, for they represent situations in which the pioneering schools most often have made approaches that they later have changed. If the mistakes made by a number of schools can be avoided by others, youngsters will profit just that much.

Suggested Learning Experiences

1. Make a collection of various definitions of the term *curriculum*. The easiest way is to use cards and place one definition with its reference on each card. If all of the group in their reading accumulate these, a number of definitions can be quickly gathered.
2. Which of the definitions do you consider to be traditional; which progressive? From class discussion formulate a definition which is acceptable to the group.
3. Observe a class. Which procedures promoted the emotional development of children, and which might have harmful effects?
4. Describe several learning experiences observed. Evaluate them, using the criteria developed in section I of this chapter. Which criteria were least frequently met?
5. Discuss the implications for planning in advance which are suggested by the criteria.

6. What additional contrasts between the old and new schools can you add to those given in section II?

7. What are some of the unusually rich experiences which have been developed in the more modern elementary school? These can be described from your experience or from accounts by Andrus, Everett, Horrall, Minor, *Education for All American Children,* and the Association for Supervision and Curriculum Development, 1949 Yearbook, *Toward Better Teaching.*

8. Outline actual studies which teachers can make, one of children's out-of-school activities, one of classroom reactions of boys and girls, one in pooling classroom experience, and one a study of the community.

9. Prepare a list of the difficulties teachers have when changing from a traditional to a modern program. References by Adams, Horrall, Mead and Orth, and Oberholtzer should be helpful.

10. Compare the guides to learning suggested in section I with Beaumont and Macomber, Mursell, and *Towards Better Teaching.*

11. If you are interested in a program of curriculum development, describe briefly the situation. Develop a program for next year. This plan should be as comprehensive as possible, but definitely practical. The references which will be most helpful are Caswell and Campbell, Everett, Gwynn, Mead and Orth, Miel, and Stratemeyer.

Selected References

Activity program: the report of a survey of the curriculum experiment with the activity program in the elementary schools of the city of New York (University of the state of New York, 1941), 182 pp.

Adams, Fay, *Educating America's Children* (New York, Ronald Press Company, 1946). Chapter V deals with the guidance of learning.

———, *The Initiation of an Activity Program,* Contributions to Education, No. 598 (New York, Teachers College, Columbia University, 1934). Presents some of the major difficulties encountered by teachers in initiating an activity curriculum.

Andrus, Ruth, and others, *Curriculum Guides for Teachers of Children from Two to Six* (New York, Reynal & Hitchcock, 1936). Excellent for basic considerations for the preschool and kindergarten.

Association for Supervision and Curriculum Yearbooks, *Leadership at Work* (1943), *Toward a New Curriculum* (1944), *Group Planning in Education* (1945), Leadership *Through Supervision* (1946), *Organizing the Elementary School for Living and Learning* (1947), *Toward Better Teaching* (1949), (Washington, D. C., The association, N. E. A.). These yearbooks deal with leadership and ways of improving the educational program.

Barr, A. S., Burton, William H., and Brueckner, L. J., *Supervision* (New York, Appleton-Century-Crofts, Inc., 1947). Part II dealing with studying the teaching-learning situation contains many suggestions for general principles.

Beaumont, Henry, and Macomber, Freeman Glenn, *Psychological Factors in Education* (New York, McGraw-Hill Book Company, 1949), 318 pp. Excellent in relating psychological principles to guiding learning experiences.

Bode, Boyd H., *Progressive Education at the Crossroads* (New York, Newson & Company, 1938). "To raise a hue and cry against subjects is to pour out the baby with the bath."

Bruner, Herbert B., "Criteria for Evaluating Course of Study Materials," *Teachers College Record,* Vol. 39, November, 1937, pp. 107-120. Presents a revised form for evaluating courses.

———, *What Our Schools Are Teaching* (New York, Bureau of Publications, Teachers College, Columbia University, 1941), 225 pp. Analysis of courses of studies in science, social studies, and industrial arts for grades four to twelve produced during 1930 to 1940.

BURTON, William H., *The Guidance of Learning Activities* (New York, Appleton-Century-Crofts, Inc., 1944). Part I discusses the principles of learning.

CASWELL, Hollis L., *Education in the Elementary School* (New York, American Book Company, 1942). Chapter III deals with the characteristics of a good elementary school.

———, and CAMPBELL, Doak S., *Curriculum Development* (New York, American Book Company, 1935). Treats of basic principles, procedures in curriculum development, and evaluation.

COOK, Lloyd Allen, *Community Backgrounds of Education* (New York, McGraw-Hill Book Company, 1938). One of the better discussions of curriculum implications growing out of community resources and the local environment.

Department of Elementary School Principals, *Enriching the Curriculum for the Elementary School Child, Eighteenth Yearbook* (Washington, D. C., National Education Association, 1939). Chapters I, II, and VIII deal with curriculum approaches.

DEWEY, John, *The Child and the Curriculum* (Chicago, University of Chicago Press, 1902). Valuable as one of the earliest statements of Dewey's philosophy.

———, *Experience and Education* (New York, The Macmillan Company, 1938). Especially valuable for the critical analysis of the activity program, the discussion on planning.

Educational Policies Commission, *Education for All American Children* (Washington, D. C., National Education Association, 1948), 292 pp. Chapter III deals with the curriculum and Chapter VI with the school and its community.

———, *The Unique Function of Education in American Democracy* and *The Purposes of Education in American Democracy* (Washington, D. C., National Education Association, 1937, 1938). Basic for their treatment of American values and implications for curriculum.

EVERETT, Samuel, ed., *The Community School* (New York, Appleton-Century-Crofts, Inc., 1938). Unusually valuable in its illustrations of how the environment-centered curriculum may be put into practice.

FREDERICK, R. W., RAGSDALE, C. E., and SALISBURY, Rachel, *Directing Learning* (New York, Appleton-Century-Crofts, Inc., 1938). Valuable for a basic consideration of learning.

GWYNN, J. Minor, *Curriculum Principles and Social Trends* (New York, The Macmillan Company, 1943). Part I deals with new factors in curriculum development and part II with the modern movement for curriculum revision.

HILDRETH, Gertrude, *Child Growth Through Education* (New York, Ronald Press Company, 1948). Chapters III and IV deal with principles of learning and child development.

HOPKINS, L. Thomas, *Interaction* (Boston, D. C. Heath & Company, 1941), 490 pp. Valuable for the process of curriculum change.

———, and others, *Integration, Its Meaning and Application* (New York, Appleton-Century-Crofts, Inc., 1937). Chapters I to IX discuss bases of integration and X to XIV present a critical survey of practice.

———, and MENDENHALL, James E., *Achievement at Lincoln School* (New York, Teachers College, Columbia University, 1934). A study of test results of an activity school.

HORRALL, Albion H., and others, *Let's Go to School* (New York, McGraw-Hill Book Company, 1938). Chapter II deals with the philosophy and Chapter V with the evaluation of an activity program in a school of average and underprivileged children.

DE HUSZAR, George B., *Practical Applications of Democracy* (New York, Harper and Brothers, 1945). Distinguishes between "talk-democracy, consent-democracy, and do-democracy." Useful ideas for coöperative work—the process of change.

JERSILD, Arthur T., and others, *Child Development and the Curriculum* (New York, Bureau of Publications, Teachers College, Columbia University, 1946), 274 pp. Chapters I and II deal with principles of child development as applied to the curriculum.

KILPATRICK, William H., *Remaking the Curriculum* (New York, Newson & Company, 1936). Evolves curriculum principles from psychological and social change.

LEONARD, J. Paul, and EURICH, Alvin C., *An Evaluation of Modern Education* (New York, Appleton-Century-Crofts, Inc., 1942), 299 pp. A comprehensive summary of the research on the effectiveness of the modern school.

MACKENZIE, Gordon N., and LAWLER, Marcella R., "Curriculum: Change and Improvement," *Review of Educational Research*, Vol. 18, June, 1948, pp. 273-281. Summarizes research on curriculum processes from 1944 to 1948.

MACOMBER, Freeman Glenn, *Guiding Child Development in the Elementary School* (New York, American Book Company, 1941). Chapter XIII discusses fifteen principles basic to modern education.

MAYHEW, Katherine C., and EDWARDS, A. C., *The Dewey School* (New York, Appleton-Century-Crofts, Inc., 1936). Excellent discussion of the philosophy motivating the first "progressive" schools.

MACLATCHY, Josephine H., MCLAUGHLIN, Katherine, and RATHS, Louis E., "Activity Programs in Nursery School, Kindergarten and Elementary School," *Review of Educational Research*, Vol. 7, December, 1937, pp. 526-544. An excellent summary of research on the activity movement.

MEAD, C. D., and ORTH, F. W., *The Transitional Public School* (New York, The Macmillan Company, 1931). An excellent description of procedures in changing from a traditional school to a more liberal one.

MERIAM, J. L., *Child Life and the Curriculum* (Yonkers-on-Hudson, N. Y., World Book Company, 1920). Valuable as one of the first descriptions of newer practices.

Metropolitan School Study Council, *What Schools Can Do* (New York, Metropolitan School Study Council, 1943), 241 pp. Suggests variety of practices, valuable for lay and professional planning.

MIEL, Alice, *Changing the Curriculum* (New York, Appleton-Century-Crofts, Inc., 1946), 242 pp. A thought-provoking discussion of the process of curriculum change.

MILLIGAN, Nancy Gertrude, *Relationship of the Professed Philosophy to the Suggested Educational Experiences*, Contributions to Education, No. 729 (New York, Teachers College, Columbia University, 1937). Shows the contrast between what is considered valuable and what actually appeared in curriculums during 1930-1935.

MINOR, Ruby, *Early Childhood Education* (New York, Appleton-Century-Crofts, Inc., 1937), pp. 3-226. Parts I and II present an excellent background for understanding the newer program on the primary level.

MOSSMAN, Lois Coffey, *The Activity Concept* (New York, The Macmillan Company, 1938). Chapters II to IV deal with the changing curriculum evolving through principles of living and learning.

MURSELL, James L., *Successful Teaching* (New York, McGraw-Hill Book Company, 1946). Discusses seven principles of teaching.

National Society for the Study of Education, *The Activity Movement, Thirty-Third Yearbook*, Part II (Bloomington, Ill., Public School Publishing Company, 1934). A comprehensive consideration of the activity program, a somewhat theoretical emphasis.

OBERHOLTZER, E. E., *Integrated Curriculum in Practice*, Contributions to Education, No. 691 (New York, Teachers College, Columbia University, 1937). An evaluation of newer practices in Houston, Texas.

OLSEN, Edward G., editor, *School and Community* (New York, Prentice-Hall, Inc., 1945), 422 pp. Experts treat various possibilities of enlarging school-communities experiences and expanding the school program.

———, *School and Community Programs* (New York, Prentice-Hall, Inc., 1949). Case studies keyed to the previous volume.

OTTO, Henry J., *Elementary School Organization and Administration* (New York, Appleton-Century-Crofts, Inc., 1944), Ch. III. A general overview of newer trends in the curriculum.

REEDER, Edwin Hewett, *A Guide to Supervision in Elementary Schools*, Educational Research Circular No. 60 (Urbana, Illinois, University of Illinois, September, 14, 1947), 71 pp. Very helpful on techniques of working with groups in supervision.

RUGG, Harold, *Foundations for American Education* (Yonkers, N. Y., World Book Company, 1947), 826 pp. Provides a background of psychology, sociology, esthetics,

and ethics as a foundation for education. Part VI reviews the last fifty years of education.

SMITH, Samuel, and SPEER, Robert K., *Supervision in the Elementary School* (New York, Cordon Company, 1938), Ch. IV. Applications of supervisory principles to course of study in various fields.

STOREN, Helen, *Laymen Help Plan the Curriculum* (Washington, D. C., Association for Supervision and Curriculum Development, National Education Association, 1947), 75 pp. The best discussion of techniques of using the lay public.

STRATEMEYER, Florence Barbara, and others, *Developing a Curriculum for Modern Living* (New York, Bureau of Publications, Teachers College, Columbia University, 1947), 558 pp. Outlines areas of living from which to draw curriculum experiences.

WRIGHTSTONE, J. Wayne, *Appraisal of Newer Elementary School Practices* (New York, Teachers College, Columbia University, 1938). An unusually excellent description of newer practices and a comprehensive appraisal of the old and new practices as measured by differences in pupils.

7

Organizing Life and Learning in the School: The Unit of Work

I. WHAT IS A UNIT OF WORK?

"Unit of work" is a phrase which is used to refer to the most popular method of organizing learning experiences. There are numerous definitions of units. Many of the differences are pointed out in this chapter. It cannot be emphasized too strongly, however, that certain preferences are emphasized and one concept of unit teaching is primarily discussed.

As it is discussed in this chapter, a *unit* consists of *purposeful (to the learner), related activities so developed as to give insight into, and increased control of, some significant aspects of living; and to provide opportunities for the socialization of pupils.* The key words and phrases in that definition are *purposeful to the learner, related activities, insight, increased control, significant aspect of the environment,* and *socialization.* The discussion in section II should do much to clarify this definition. There is no restriction of subject lines in the definition, for insight into a significant aspect of life requires cutting across many subjects. There is no implication that subject-matter is to be done away with, for insight or increased control cannot be attained without subject-matter. There is, and rightly, the definite implication that learning and socialization should be simultaneous. Too often socialization has been neglected in the attempt to further learning.

While there have been attempts to classify units according to types, such considerations have been of little value to the teacher. It is possible to describe differences in units which do have value. This has well been done by Burton in distinguishing between his "subject matters units" [1]

[1] The authors feel that the term "subject matter" used as many authors use it, tends to imply that subject matter is not needed in units. This assumption is most incorrect. Burton in his definition of an experience stresses the utilizing of socially useful subject matter. William H. Burton, *The Guidance of Learning Activities* (New York, Appleton-Century-Crofts, Inc., 1944), p. 245. However, we do feel strongly that there is a need to clearly differentiate between "units planned primarily to see that certain subject matter is learned and units planned with a concern for the total experiences of the pupils." The contrast supplied by Burton makes this clear. While the position assumed by Hollis L. Caswell, *Education in the Elementary School* (New York, American Book Company, 1942), pp. 189-190, and in the forthcoming 1950 yearbook of the National Society for the Study of Education is essentially correct, we do not feel it is strong enough to be clear to all readers.

and "experience units." The present authors have taken the liberty of changing "subject matter" to "traditional."

The differences between the two types of units are given by Burton as follows: [2]

TRADITIONAL UNITS:	EXPERIENCE UNITS:
...begin in the intention of adults to teach approved subject matter to pupils;	...begin in the intention of the learner to achieve some purpose, to satisfy some need;
...are organized logically around a core within the subject matter;	...are organized psychologically around a purpose of the learner;
...are prepared in advance, by a person or group already familiar with materials and their logic;	...are organized as they develop by a group facing a new situation for the first time and not familiar in advance with the materials and experiences necessary in meeting the situation;
...are for the purpose of having the pupil acquire the logically arranged subject matter;	...are for the immediate purpose of satisfying a need of the learner and with the ultimate purpose of developing desirable understanding attitudes, skills, etc., in the learner;
...are usually organized from simple to complex and within subject fields;	...are usually organized functionally and in disregard of subject lines, especially in elementary grades; often from complex to simple; (The complex urbanized, industrialized civilization within which a child lives is often more comprehensible than the simple life of primitive peoples. Child has no experience with the latter, much, with the former.);
...are controlled by the teacher, by adult committee, by course of study;	...are controlled by a coöperating group of learners which includes the teacher; the course of study is utilized as needed;
...are usually centered in the past, in the "accumulated, not the accumulating" culture; little reference to present or future; reference to future usually theoretical;	...are usually centered in present and future; use accumulated materials from past freely in solving present problems;
...rely on formal methods, assignments, distinct lesson types, printed materials as chief sources; learning experiences few and formal;	...utilize coöperatively planned procedures suited to situation, sources in great variety, learning experiences numerous and varied;
...give all pupils the same contact with the same materials; some provision for individual differences;	...give contacts with many materials; individual differences cared for variously and automatically;

[2] William H. Burton, *The Guidance of Learning Activities* (New York, Appleton-Century-Crofts, Inc., 1944), pp. 247-248.

Traditional Units: *Continued*	Experience Units: *Continued*
... have fixed outcomes known in advance, required uniformly for all learners;	... do not have fixed outcomes, known in advance, and required uniformly from all learners;
... at conclusion, evaluate through the use of formal tests of subject-matter acquisition, usually of fact or skill;	... evaluate many complex outcomes, continuously, with constant pupil participation and through use of many instruments, formal and informal;
... close with a backward look, so-called "review," and are done with when finished.	... lead to new interests, problems, and purposes.

Most of the discussion of this chapter centers around the experience unit.

Written units can be thought of as arranged in three groups. The first is a briefly written unit, sometimes known as the *teaching unit*, outlining the objectives, activities and materials to be used. These are the most numerous, appearing in courses of study, articles, and mimeographed form. There is no standardized outline as is clearly shown in section IX. The characteristic of these units is that they have been prepared in advance as guides, either after having been taught by someone or based on previous experience in handling units.

The *unit log* is the second form. This account is really the diary of the unit, written as the unit develops. Logs provide an excellent basis for the teacher and principal to evaluate the unit.

The *resource unit* or *source unit* is a carefully prepared series of suggestions for teachers, covering a broad area of work. It contains more material than possibly could be used with any one class. Often it contains much background material for the teacher. A more complete discussion of resource units is given in section IX.

II. CHARACTERISTICS OF DESIRABLE UNITS

1. The unit should be based on purposes which are real to the children. It should arise from the interest and needs of the group, developing out of the on-going life of the group. If it does not develop directly from the group, the purposes should be readily acceptable and real to the children.

The problem of developing challenging units for each group is a most important one. What is real, interesting, and vital depends so much upon the situation and the group. The experience of repeating the same thing in two classes with great success in one and utter failure in the other is only too common.

2. A series of units should contribute to the total development of the child. The words *a series of units* are used to refer to the units developed by a class during any one year's work. Any one unit taken separately usually shows a distinct tendency to emphasize some one phase of activity

or subject-matter. The teacher, then, is responsible for seeing that other units develop to provide a well-rounded experience.

The primary value of the unit is that it furnishes opportunities for more than the intellectual development of the child. It provides for social and emotional development through working and planning together. Certainly the ability to work coöperatively in the solution of problems is a primary attribute of good citizenship. The ability to locate and organize information should be an important outcome. Creative expression is much more apt to be encouraged.

Careful planning and evaluation of the year's activities will be concerned with a balance of physical, mental, emotional, and social experiences. Part I has shown clearly that mental experiences alone, as stressed in the traditional school, are definitely inadequate. The failure of the school to meet the child's needs in one or more of the four areas makes for considerable difficulty and maladjustment. A program may provide excellently for the child's mental and physical needs, yet really fail because it is not adequately meeting the child's social and emotional needs.

Learning has too long been considered only in the light of the printed page. In evaluating learning the child as a whole must be considered. Discarding phases other than the intellectual is extremely detrimental.

Broad outcomes. To insure that the units contribute to the total development of the child, the desired outcomes must be broad. Experiences must be so planned as to lead to qualities which we want in good citizens. Important here are social understandings and insights, skills, attitudes, appreciations, values, and a participating concern for the welfare of the group. Qualities and habits of citizenship are best learned through participation of problems of concern to the group rather than in miniature adult problems.

3. A unit should deal with material within the comprehension of the child. This criterion is urged upon teachers again and again. Much is known about what children can understand. Chapters 9 to 14 contain many suggestions and ideas of help to teachers. It is clear that the first-grade youngster is concerned with getting food in the home, whereas the high-school pupil is interested in the relations within the home. The extremes are apparent. There is no substitute for the teacher's thoroughly knowing the abilities of his own class.

The teacher must be alert to sense whether the unit is within the child's comprehension. It has to be difficult enough to challenge the child, yet simple enough to be completed satisfactorily. Certain units might be appropriate for rural youngsters and yet not so suitable for city youngsters. New England and Southern California, Texas and Wisconsin offer contrasting environments which should influence the selection of units. Experience with the given type of children is actually the teacher's best guide.

4. A unit should provide continuity in the development of the child. Too often units have been selected without any relation to what has gone before or what will come after. In many systems there seems to be no apparent plan for growth in understandings; there appears to be no provision for sequence of experiences. In contrast, some schools have a list of units which are taught in each grade in a definite order.

One school tells the story of an irate father who entered a sixth-grade pupil with the following ejaculation: "For the past three years all my son has done is to study about boats. I hope, for goodness sake, you'll teach him something else." Common sense would have prevented this situation; yet we are too apt to follow an educational will-of-the-wisp.

Schools are solving the problem largely in two ways. One is to specify areas for each grade in which the teacher will select appropriate units. This procedure has been most frequently followed in the social studies. A number of illustrations are given in Chapter 9. A second method is to list a number of units for each grade of which the teacher and class may choose several. This procedure has been followed frequently in social-studies courses but most often in science courses. A study of the science units in Chapter 12 makes this apparent. A third method which fortunately is disappearing is to prescribe the exact units to be taught. However, the procedure which is followed should depend upon the abilities of the teachers. When teachers have had little or no experience teaching units, it is often worth while to prescribe for a time the exact units to be taught. This enables the exchange of materials and actual teaching experiences, thus improving teaching techniques.

All of the existing sequences have definite limitations. Only too often is there an overemphasis on one phase of child growth. This criticism has been frequently directed against such sequences as are represented by the Virginia course, for their emphasis upon broader social understanding and lack of attention given to the more personal problems of children. The ideal sequence would provide for the continuous development of the child in all phases of growth.

Units have too often been selected in the past because some other teacher has taught that unit or the teacher has found a written account of the unit in some magazine, book, or course. If the units for a whole school are listed, often many inconsistencies are revealed. A school in which each teacher selects units without any relation to a total program is apt to have some such series as the following presented:

GRADE I. Making Furniture
Flowers in Winter
Toys
Farm Life

GRADE II. Ways of Telling Time
Boats
Seeds
A Spool of Cotton

GRADE III. What Trees Are These?
A Jar of Honey
A Trip to the Zoo
An Anthill

GRADE IV. Let There Be Light
An Ear of Corn
From Egg to Omelet
Birds of Our Neighborhood
Folk Songs of Many Nations

GRADE V. Boats
Black Diamonds
Oranges
Pottery

GRADE VI. Our Bird Neighbors
Steel
Sports of All Sorts
Germany

This list might seem to be a burlesque; yet these units were actually selected from a much longer list submitted by one school system. These selected titles represented considerable improvement over the total list.

Provision for continuity in the development of children is a responsibility that must be met. If it is not an integral part of the curriculum plan of the system, it is the principal's duty to provide for it. If the principal neglects it, each individual teacher by studying the previous experiences of her children can do much to furnish continuity of growth. However the teacher must be conscious that the arrangement of materials to provide continuity of growth is not necessarily a logical one.

The implication of the previous statement to many persons is that the teacher has no responsibility until all others have failed. Yet such is decidedly not the case. No matter how excellent is the system or school plan for continuity, the individual teacher must be familiar with the previous experiences of the class. In no other way can she provide for further experiences.

One way by which some schools have transmitted knowledge of experiences is to have a note-book or unit plan book for each class. In these unit plan books are kept an outline of the units, types of activities, and books and materials contacted by the class as it progresses from grade to grade.

5. A unit should deal with some phase or problem of living sufficiently significant to merit careful study. Evidence that the activity program is "coming of age" is in the increasing concern given to the significance of the unit. Too many teachers have felt that a unit that is "rich" in activity and "broad" in scope is successful. A typical comment of such teachers: "I have never worked on a unit which had more freedom or more activity than this unit. The children's interest was keen to the very last. They had such a rich experience." Granted that there may be much to be said

for the worth of the unit, but there still remains the problem that the class could have been working on comparable material that would have resulted in more worth-while outcomes.

How can the teacher judge significance? The chapters dealing with the various fields devote much space to helping the teacher build a basis for making decisions. Briefly these criteria seem to be emerging as theory and practice are studied.

1. Does the unit develop an important understanding or concept? See Chapters 9 and 12 for such concepts in social studies and science.
2. Does the unit increase the child's understanding of area of living, social functions, problems of life, and the like? Chapter 9 discusses several classifications.
3. Does the unit contribute to the child's personal and emotional development?

One of the first two of these criteria is increasingly applied, depending upon which is used as an organizing factor for the area. The actual difference between the two is probably more artificial than real. This discussion will be much clearer after the chapters on social studies, science, and language arts have been read.[3]

An example of the need of careful selection is a unit on insects. The class spent considerable time studying about various kinds of insects and the parts of insects. If you go to a scientist and ask him what is the most important "big idea" or concept in relation to insects, he will say that it is the idea that man is continually striving to maintain his supremacy over the insect world. Not only was that idea not stated, but none of the learning experiences would have developed it. In planning this unit at any specific time and in any specified locality, there are certain insects which would be more worth while to study than others. The same understandings can be derived, and the subject-matter is much more functional. Thus, when the concepts have been determined, the teacher must see that the subject-matter is in itself the most valuable that could be used as well as being most useful in developing the concept.

Improvement in selection is gradual. Every school system needs to evaluate its units carefully, discard the least significant, and substitute ones that will be much more profitable. The important thing is the learning which takes place, not the "show" which a unit makes.

6. A series of units should provide for a variety of activities or experiences for the class and for individual children. A variety of activities was suggested in the discussion of the second point. However, it is of sufficient importance to stand alone.

The things the children do are the most important part of the unit.

[3] A possible third classification will be brought into the elementary school from the secondary school. It would incorporate the concept of needs—personal, immediate social, broader social, and economic—as developed in the publication of the Progressive Education Association. See *Science in General Education* (New York, Appleton-Century-Crofts, Inc., 1938).

In the early stages of the activity movement construction seemed to be synonymous with activity. Now a much saner view is taken of the matter. Construction is only one of the many profitable activities. Lists illustrative of the possible variety of activities are given in Chapters 9 through 12.

Here is the semester's work of two third-grade teachers in the same system. The social-studies program is "Children of Other Lands."

Miss Smith	*Miss Jones*
Eskimos	Eskimos
Built an igloo	Built an igloo
Norway	Mexico
Built a Norwegian house	Developed mural for room
Switzerland	Pioneers
Built a Swiss chalet	Wrote and produced a play

Obviously the children in Miss Jones' room had the richer experience. In her program there was both contrast in environment and contrast in time. There was in addition a variety of experiences that utilized the abilities of different members of the class.

The utilization of a variety of types of activities furnishes the opportunity to develop various abilities. More children have an opportunity for successful achievement. In Miss Smith's class only those youngsters who were good in construction received recognition; whereas in Miss Jones' class, in addition, youngsters who were better at expressing themselves in art, in writing, and in dramatics had their moments of achievement.

Well-selected activities in a series of units are not sufficient. The teacher must be sure that each child participates in a variety of activities. It is too easy to let each child do the thing that he does best all of the time. This means a decided lack of balance for the individual. One school system solved the problem by providing space on the back of the permanent record card for the unit and the type of activity in which the child participated. Much work can be saved for teachers if some provision is made for the child to write his own brief account of the things he did.

Good teaching thus requires that children have the opportunity for success in the activities in which they can make a special contribution and at the same time be participating in a balanced variety of experiences. This requires careful planning and record-keeping and a thorough knowledge of the children. One argument against departmentalization in the elementary school is this. It would be almost impossible to see that this balance was maintained where several teachers contacted the child during the course of the day.

The greatest criticism to be made against the elementary classrooms is not an overemphasis on construction, but an overemphasis on reading and recitation as the sole learning activity. In spite of the great changes that have taken place in elementary education, far too many teachers still depend almost entirely on the text.

Units offer a splendid opportunity to provide a wider variety of experiences. The use of environment to make meaning clearer is one opportunity (Chapter 8). The opportunities to provide experiences for sharing, creating, experimenting, using reference materials, and reporting are many. Critical thinking is best done on problems of concern to the group. Evaluation is best done where the elements of choice exist.

7. The data gathered and the activities, including construction, should be as authentic as possible. Authenticity has hardly reigned supreme as a guide to the work of the elementary classrooms. It is not an uncommon sight to see the tepees of the eastern tribes mingled with the basketry of the Midwest and the pottery of the Southwest. There is no value for a class to study Indians in general, for there is no general Indian. It is necessary to study types or tribes. Another example is pictured in a recent book on elementary education. A group of boys is at work on a covered wagon, the lower sides of which are made of slats with considerable space between.

These two examples could be multiplied endlessly. Granted that authenticity could be carried to a wasteful extreme, it hasn't in most classrooms even begun to be considered. Some of the most interesting material being produced is in terms of resource units. Such material is of considerable help in supplying background.

8. The unit should be coöperatively controlled by the group of learners and the teachers, with participation by pupils in all aspects.[4] Clearly this is a characteristic of the "experience" unit. A re-study of the definition of a unit given at the beginning of the chapter will show the reason for stressing this characteristic. The stress on *purposeful to the learner* requires teacher-pupil planning.

The pupils should participate in the selection and initiation, should have an opportunity for continuous planning, help select problems and materials, plan activities, and evaluate activities and goals. Planning is further discussed in section VII.

III. DEVELOPING A UNIT

"How do I go about starting a unit?" is the common question raised by teachers. Perhaps an overview of a unit as it develops is one of the best ways of arriving at an understanding of what is meant by a unit and how it is taught. In the following overview the separation of steps is merely to make the process clearer.

1. Orientation, approach, or introduction. This first step is commonly known by any of the three terms. The main purpose is to arouse interest and develop some background. This is usually done through pictures, excursions, or extensive reading. An interesting account as to the ap-

[4] Adapted from William H. Burton, *op. cit.*, pp. 247, 248.

proach to a pioneer unit utilized in an elementary classroom in New England is available: [5]

An ingenious boy brought a novel nut-cracker to school in the form of an old pestle. Through discussion regarding the improvised tool we made the discovery that some of the homes of the other children harbored many articles of similar interest. By showing the children pictures of various antiques portrayed in books and magazines, the children became aware of the existence of such items as the following in their homes or about their premises: a blanket chest which was kept in the cellar to store tools, an old sea chest which was being used for a woodbox, several real old iron kettles that had been thrown away, two old charcoal irons that the children used for toys, some candle molds, pewter pieces, a warming pan, an old pine cradle, an old foot stove, a butter churn, several spinning wheels, a pair of old saddlebags, hand-made clothespins, some rare old books, two old wooden shoe lasts, a well-preserved sampler made in 1771, a powder horn, an old fireplace oven, some fine pieces of old blown glass, and many other articles of account running through the colonial period.

Such a richness of material for a pioneer unit could only be found in certain sections of the country. Yet each locality is equally rich in material for certain units.

The imaginative and alert teacher can recognize many possible approaches which will challenge the children. Discussion of successful approaches in faculty meetings will be helpful. Wide reading of units and courses of study will contribute ideas. General principles which will help the teachers have been listed by Burton: [6]

First Adequate knowledge of typical interests likely to be found within given age and group levels is necessary. What things will persons seize upon and react to, what will they ignore and be indifferent to?

Second Intimate knowledge of the learner and of his learning processes is necessary.

Third The teacher needs an easy grasp of the course of study, and wide general knowledge resulting from a first-class general education.

Fourth Reading of many units and logs will supply hints and aids.

Fifth Visiting to observe good teachers at work gives similar assistance.

Sufficient background must be built by some means in order that children may have a basis for recognizing problems and developing guides. If the unit deals with materials that are already familiar, the problem then is to get an approach that will challenge the interest of the youngsters. However, it should not be assumed that because youngsters have lived with something all their lives, they are familiar with it. The objects collected for the pioneer unit are an example of this situation. If they are unfamiliar, the problem is to develop background.

2. Formulation of problems, or planning period. After there has been sufficient background developed for the youngsters to raise intelligent

[5] W. S. Dakin, *Units of Work Developed by Pupils of Intermediate Grades, Connecticut Rural Schools,* 1933-1934 (Hartford, Conn., State Department of Education, Mimeographed bulletin, 1934).

[6] Adapted from William H. Burton, *op. cit.,* p. 304.

questions, a discussion period should arise. During this time, which may take several days, the problems and questions for further study are raised. From this discussion grows the plan of the work.

It is in this step that planning is going to make for either the success or failure of the unit. Though planning is discussed in the following section, it cannot be overstressed here that many units prove to be worthless because this step of the work is slighted. The teacher is too anxious to get the class doing something, too often not realizing that developing a program of work is a valuable learning in itself.

The pupils, with the coöperation of the teacher, need to have a large share in the planning. They can help determine the unit in the first place. Then they should participate in the selection of the problems and activities. Evaluating outcomes should also be a joint venture. Such procedures can be begun in the kindergarten and carried through the graduate school.

In many classes all the questions in which the youngsters are interested are written on the board. Then they are organized with the help of the class around larger areas. The children are divided into committees and take one or more of the larger problems to work on. Then the class as a whole or committees discuss how they can get the information and what they need or can do toward solving their problems during the development of the unit. Here at least, a tentative formulation should be made of the types of activities which are to be carried out. It is essential that each committee develop a careful plan for its own work.

3. Working period. The work period is one of the greatest challenges to the teacher. If careful planning has taken place, if the work is of concern and interest to the pupils, and the pupils know what they are to do, this phase of the unit can be most successful. If not, chaos may well result. It may help the teacher to think of two phases of the work period. One phase deals with the collection and evaluation of data, the research phase, and the other with the presentation of materials, reports, and research. Both phases may be present at the same time but both must take place in a good unit.

Collection and evaluation of data, research. This part of the unit is the work part. The materials which contribute to the solution of the problems raised are gathered together and organized. Section IV, "Types of Activities," belongs here and should be read in connection with this section. All possible sources, such as excursions, interviews, visual materials, observation, and research in books and magazines are utilized. Art work, construction, and writing are a means of presenting the results of the committee's research to the class.

During this time the teacher needs to keep in continuous contact with each committee to see that progress is being made. It is also advisable to spend part of the time at the beginning of the day's work to be sure each group knows what it is to do that day; then at the end of the period to

have a brief report of what was done. The frequency of planning and evaluating depends upon the children's maturity and also their skill in self-direction. Kindergarten children need to spend some time each day on planning and checking. Sixth-graders are capable of longer effort, but even there a class check of once or twice a week is advisable. It is necessary for the teacher to know just what progress is being made all the time, for it does not take long for the work of a committee or child to break down.

Presentation of materials, reports of readings and research. Each committee needs to have the opportunity to present the final results of its work to the class as a whole. These reports are usually a combination of oral and visual, for often the committee has made something or illustrated a phase of its work.

During this time the teacher needs to be careful to see that all of the class receive the benefit of the work of individuals. Each pupil has been working on only one phase of the problem. It is necessary that from the presentations of others they acquire an understanding of the total unit.

This period also furnishes the audience situation in which the finished work of the group goes on display. It furnishes the impetus to do a careful and adequate job, for it is being done so that all the class may profit. It also supplies the opportunity to evaluate the work that has been done, to determine where progress has been made and where work might be improved.

Some units would be concluded at this point. With others, out of this period would grow a large class activity which would be the culminating activity for the unit.

Valuable suggestions for the working period have been listed by Burton: [7]

1. Guide the group during the planning period to develop plans which are so definite and so clear that all know what to do and how to do it.
2. Check with individuals and committees before they disperse for work to see that the more detailed plans are definite and clear.
3. Anticipate difficulties in carrying out plans as made and be ready to call a group conference when the difficulty occurs and before discouragement and work stoppage can result in disorder.
4. Guide during the planning period so that sufficient work is outlined to keep all individuals and groups busy over a reasonably long period of time. Replanning will keep the sequence going so that lack of work does not cause disorder.
5. Call for re-planning conferences as work develops unevenly. Workers may be reassigned and activities redistributed.
6. Keep in touch with the varied activities by moving from group to group, by participating, by asking questions, by making suggestions, thus exercising both guidance and control.
7. Foresee certain common opportunities for disorder and forestall them by developing with the pupils regular routines:
   a. for having all materials, tools, and supplies ready before need for them arises;

[7] *Ibid.*, pp. 292-293.

b. for distributing materials, tools, supplies, books, papers, quickly and in an orderly manner;
c. for using reference materials, particularly when many pupils wish to consult an inadequate number of references;
d. for holding conferences with individual children who ask for help;
e. for using as helpers any individuals who may for any reason be unoccupied for a time;
f. for moving groups, for observing as groups, without crowding or jostling.

8. Introduce new activities to small groups directly concerned so that tryout will be without the confusion which might result from misunderstandings within a large group and from too many persons trying a new process without sufficient guidance.

9. Give constantly direct and indirect training in the conventions and routines of group work: taking turns, not interrupting, turning to some other aspect of one's work instead of standing around waiting for tools or materials in use elsewhere, signing in and out for tools and materials, etc.

10. Develop with the pupils flexible plans for their own activities: budgeting time, scheduling group conferences, announcing times for individual conferences, etc.

11. Develop constantly, directly and indirectly, the understanding that freedom carries responsibility, and that self-control and coöperation are advantageous to the pupils themselves and not something required by the school.

The following three sections, dealing with activities (IV), relations of skills and abilities (V), and relation of study techniques (VI), are basically part of this section but for ease in handling have been placed in separate sections.

4. Culminating activity. A culminating activity is not essential, but where it grows out of the work of the course it is most valuable. A number of such activities are listed below:

1. Dramatizing original stories or stories from books, a puppet show, rhythmic dramatization, tableaux, enactments of a day in the life of a people, radio broadcasts
2. Open house for parents or other classes with exhibits of the work of individuals and committees, or with reports of work
3. Program of songs, stories, dances, games, slides, movie rolls

5. A summary. To make the procedures clearer, Table V on page 235 is reproduced from Wrightstone. The headings are quite comparable to the approach; his formulation of aims comparable to planning; collection of data periods comparable to the working period; his correlation period differs from this presentation; but the culmination is identical in both lists. Evaluation of the unit is discussed in section VIII. The table is of unusual value in giving in one picture the development of the unit.

IV. TYPES OF ACTIVITIES

Activities expand learning base. The activities that develop during the unit are the basis for learning. The recent transition from the restricted activities of dealing with textual material to a wide variety of learning

TABLE V

PRINCIPAL PROCEDURES IN THE DEVELOPMENT OF A UNIT OF WORK OR PROJECT *

Stimulation or Identification of Interests	*Formulation of Aims, Activities and Methods*	*Investigation and Collection of Data*	*Integration or Correlation of Data*	*Culmination of Activities*	*Evaluation of Outcome*
Classroom and social environment stimuli which are identified and chosen for group enterprise Sources of stimuli include: 1. Books 2. Conversation 3. Discussions 4. Excursions 5. Exhibits 6. Magazines 7. Movies 8. Newspapers 9. Pictures 10. Stories 11. Talks 12. Trips, etc.	Pupil-teacher planning by suggesting: 1. Problems 2. Questions and formulating: 3. Aims 4. Activities 5. Materials 6. Methods and organizing tentative: 7. Committees 8. Reports, etc.	Obtaining facts from such sources as: 1. Interviews 2. Lectures 3. Library (home-school) *a.* Bulletins, Reports, etc. *b.* Encyclopedia 4. Magazines 5. Maps, globes, etc. 6. Movies 7. Museums 8. Newspapers 9. Pictures 10. Radio 11. References 12. Slides 13. Stores, factories, etc.	Unitary acquisition and organization of data usually organized in subjects like: 1. Arithmetic 2. Dramatization 3. Fine Arts 4. Health-physical education 5. Industrial Arts 6. Language *a.* Oral *b.* Written 7. Music 8. Reading 9. Science 10. Social studies *a.* History *b.* Geography	Sharing findings and generalizations through creative expression: 1. Assembly programs 2. Creative stories and poems 3. Dramatizations *a.* Plays *b.* Pageants 4. Drawings and paintings *a.* Murals *b.* Portfolios 5. Note-books 6. Reports *a.* Group *b.* Individual 7. Scrap-books 8. Stories 9. Talks	1. Intellectual factors: *a.* Recall and recognition of facts and skills in reading, arithmetic, language, science, music, art, etc. *b.* Abilities and skills in obtaining, organizing, interpreting, and applying facts for the solution of problems 2. Dynamic factors: Attitudes, motives, opinions, appreciations, personal and social adjustment, etc. 3. Performance factors: Behavior, conduct, or performance in personal-social qualities, such as initiative, criticism, responsibility, reliability, industry

* J. W. Wrightstone, *Appraisal of Newer Elementary School Practices* (New York, Teachers College, Columbia University, 1938), p. 91.

experiences is one of the most worth-while characteristics of the modern elementary school.

When he arrives in school the six-year-old knows a great deal. Did he learn all this by reading a book and answering his mother's questions about it? The ridiculousness of the inquiry is only too apparent. Why, then, have we felt it so essential to impose the "traditional school-room" atmosphere upon him? Fortunately the modern school-room both literally (weather permitting) and figuratively has its doors flung open and its walls moved out to include the whole community. How shocked some people were when they first saw a class away from school! Now it is commonplace.

One fair criticism is that to many teachers learning by experiencing and learning by activity mean the carrying out of some physical motion. It is essential to realize that the child who is experiencing is not necessarily moving about physically. Reading a book, watching a film, or listening to the radio is experiencing as much as any type of construction work. These activities discussed in this section are essentially part of the working period of the unit.

Suggested experiences. Many suggestions for a learning experience are given in successive chapters. Some idea of the diversity possible can be obtained from the following list compiled by Gertrude Whipple.[8]

WHAT PUPILS DO IN AN ACTIVITY

I. *Work with Visual Materials*
   1. Collect pictures and other illustrative materials.
   2. Study pictures, stereographs, slides, and motion pictures for special purposes; listen to explanations, ask questions.
   3. Examine exhibits.
   4. List interesting questions while examining visual materials.
   5. Select visual materials for use when giving an oral report.
   6. Arrange exhibits; write labels and explanations.
   7. Organize and file materials for future use.

II. *Excursions and Trips*
   1. Visit museums, aquariums, zoos, etc.
   2. Call on business firms for needed information and materials.
   3. See demonstrations of processes, e.g., soap manufacture, making of paper.

III. *Study of Problems*
   1. Search for information in answer to important questions.
   2. Consult encyclopedias and reference books for needed information.
   3. Bring books from home and from the public library to supplement the school collection.
   4. Write to business firms for needed information and materials.
   5. Carry out directions given on guide sheets prepared by the teacher.
   6. Take notes from several books in preparation for discussion or a report.

[8] Gertrude Whipple, "What Pupils Do in an Activity," *Course of Study Bulletin*, No. 162 (Los Angeles City Schools).

7. Interpret maps; find locations.
8. Perform experiments, such as making soap, preparing dyes for monastic lettering, caring for bulbs.
9. Evaluate information from different sources; determine the accuracy of conflicting statements.
10. Organize material read in preparation for a discussion or for an oral or written report.
11. Prepare and give informing and interesting oral reports.
12. Prepare brief, written reports for definite purposes, e.g., use in a classbook, explanation of an exhibit.
13. Prepare a bibliography of books used in the study.
14. Skim material to list interesting subjects for further study (also to locate material of value).

IV. *Appreciation of Literature*
1. Reading interesting stories for pleasure.
2. Read poems for pleasure.
3. Listen to reading for pleasure and information.

V. *Illustration and Construction*
1. Prepare charts and diagrams.
2. Make blue-prints.
3. Draw and construct maps: product maps, relief maps, pictorial maps.
4. Prepare posters.
5. Prepare illustrations, maps, and diagrams for a book.
6. Prepare scenery for a play.
7. Prepare a frieze.
8. Make articles for an exhibit, such as cuneiform tablets, parchment, model of a feudal castle.
(Accurate representation after careful study)

VI. *Work Involved in Presenting Information*
1. Suggest ways in which interesting information can best be presented.
2. Censor and edit material for books.
3. Keep an organized bulletin board up-to-date.
4. Plan and give an assembly program.
5. Write and give dramatizations.

VII. *Checks and Tests*
1. Take informal and standardized tests.
2. Prepare tests for other pupils.
3. Keep growth graphs.

Balancing learning activities. One of the criteria suggested for a good unit was that a balance of learning activities be provided. A valuable list which teachers should find most useful is one by Mossman. She supplied a list of types of things people do, classified into ten groups. These are adventuring into the environment, creating, coöperating, judging values, consuming, recreating, recording, practising, obeying, and controlling. The more complete list which she furnishes can serve as a guide to help balance learning activities. The complete list[9] is:

[9] Lois C. Mossman, *The Activity Concept* (New York, The Macmillan Company, 1938), pp. 54-55. By permission of the publishers.

1. Adventuring, exploring, trying, finding out, experimenting, investigating, searching, reaching, inquiring, extending, contemplating, collecting, examining, questioning, proving, asking, studying
2. Creating, contriving, devising, proposing, constructing, imagining, planning, organizing, thinking, initiating
3. Coöperating, pooling, suggesting, helping, contributing, outgiving, discussing, refuting, talking, reporting, proposing, sharing, participating, communicating
4. Judging, evaluating, deciding, considering, concluding, forming an opinion, summarizing, formulating
5. Consuming, enjoying, receiving, accepting, intaking, being affected, depending upon, listening
6. Recreating, resting, renewing, playing, singing, dancing, relaxing
7. Recording, drawing, writing, expressing, painting, sculpturing
8. Repeating, reciting, practising, drilling
9. Obeying, accepting, following, conforming, submitting
10. Dictating, controlling, ordering, forcing

Classifying activities. Much confusion has resulted in many systems by trying to classify activities in one manner or another.

Many units merely list activities under possible approaches, then in the main part of the unit, and under culminating activities. This method which classifies them in terms of the teaching procedure is easily understood by teachers.[10]

Criteria for evaluating activities. Activities are poorly selected and inappropriate in many classrooms. These criteria should prove helpful for the teacher in evaluating the learning experiences of the class:

CRITERIA FOR EVALUATING LEARNING EXPERIENCES

1. In what ways do the experiences contribute to the expected outcomes?
2. Are the experiences varied as to type?
3. Are the experiences presented in a sufficiently clear manner so that pupils may carry them to a successful conclusion?
4. Are the experiences within the range of accomplishment of the pupils?
5. Do the experiences involve an extension of the present insights and abilities of the learners?
6. Are the experiences challenging and interesting to the pupils?
7. Do the experiences provide for adaptation to individual needs and abilities?
8. Do the experiences provide opportunity for children to work together cooperatively?
9. Are some of the activities drawn from the resources of the community, resulting in relating the material to life needs?

V. THE RELATION OF SKILLS AND ABILITIES

Need for skill. Skills are most effectively taught when children see a need for them. Where such needs arise during a unit, certainly the teaching of the skill should be done then. Learning is apt to be much more

[10] Further attempts at classification usually result in confusion. If interested certain classifications are given in the 1940 edition of this volume, pp. 218-219.

effective for there is a need, an interest, and more of an understanding than when skills are taught in isolation.

Practically, a number of difficulties will arise in any school system in the practice of teachers in developing the related skills. Many teachers overlook opportunities for such teaching. Others feel that no attention needs to be given to skills other than related ones. Still others pull in artificially many skills that are unrelated to the unit. A proper perspective of the teacher in relation to this problem needs to be developed by the supervisor or principal if it is non-existent.

The opportunities to utilize number experiences are among those most frequently overlooked. When teachers are asked to list the number experiences in these units, there is a marked decrease from grade to grade. Skills which in many cases are directly related to the unit are neglected because teachers are not conscious of the possibilities. The upper grades have really more opportunities than the primary grades.

Unrelated skills. There are many skills that may not be related to any unit the school is currently teaching. Provision must be made for teaching these. The more obvious ones are in the field of arithmetic and language arts, but even music and art demand certain techniques that may not be developed in a unit.

The answer a number of public schools are making is the division of the day in about two equal parts, one half of which is spent on the unit and one half on the unrelated skills. Where there are two core units in progress, one in the social studies and one in science, the time is then divided in about thirds. These schools are by no means formal schools. They represent situations in which there is genuine interest in the activity program. It is the consensus of opinion that a few very clever teachers can develop the necessary skills in connection with the unit, but that most teachers find it necessary and desirable to have a period in which unrelated skills are taught.

Teaching skills in relation to the unit requires more skill than the traditional program. Under the old program the teacher could teach whatever was indicated in the course of study or the text. To do an effective job of teaching abilities in relation to the unit one must understand the possibilities for the gradual growth in the various fields, one must know where in that growth process the various members of the class are, and one must be alert to the opportunities that occur in the unit for such instruction.

Diagnosis important. Diagnosis of difficulties is even more important when skills are taught in relation to the unit. In the traditional program the skills were taught step by step, and drill was given until a certain degree of mastery was attained. Now the teacher has to know what abilities her pupils have in order to supplement with the necessary additions. Formerly teacher-training programs laid great stress on the teacher's knowledge of the step-by-step development in arithmetic. It is even more

necessary to-day for the teacher to understand this development, not so as to follow it exactly but rather to fill in the gaps.

The teacher is no longer the teacher of one grade. She must understand the developmental process that takes place in the entire elementary school. The material in the following chapters will be of considerable help. Observation of children in grades above and below those usually taught is necessary to clarify the concept of how the child develops.

VI. THE RELATION OF STUDY TECHNIQUES TO THE UNIT

The learning process. One of the most important things for the elementary school to "teach" is effective habits of study. Teachers must not wait until pupils are in the upper grades and using a large variety of books before such habits are introduced. Habits of study may be developed from the time a child enters school, even in the kindergarten.

Among the most valuable of study techniques at any level is recognition of a purpose, analysis of the problem, individual or coöperative planning of means of solution, judging materials and ideas, carrying through the plan decided upon, practising efficient methods in learning, a critical evaluation of the solution. All these should be a part of most activity on any level. If pupils develop the major habits of good study, initiating, a problem-solving attitude, a spirit of coöperative planning, and habits of critical evaluation, from the beginning of their school experience they will have become adept at handling such techniques by the time they reach the upper grades. Dudley [11] has many suggestions for methods of attack and procedure that may well be a part of the very early school program and which are valuable for all study.

It is suggested that very early, children may have experiences in organizing, arranging, and classifying materials. Materials may be "sought for, looked at, analyzed, discarded, or used with reference to their relationship to the purpose in mind." Children may also "early develop the habit of weighing values and making choices as to relative values of their facts and materials." The comment is made that "these are worth-while study practices at any level."

The ability to concentrate on a task should be developed as soon as possible. The material on which the child is to concentrate will range in difficulty and basis of interest with the ability and interests of the child. The period of concentration will gradually increase depending on the stage of development of that ability.

The use of books as sources of desired information begins early if the teacher herself uses books for that purpose so that the children can follow the process. As early as the second grade, pupils can themselves use the index or table of contents as an aid in locating material. The newer method

[11] Dessalee Ryan Dudley, "Learning to Study in the Early Grades," *Educational Method*, Vol. 17, May, 1938, pp. 378-381.

of reading, "reading for thought and with a particular purpose in mind," is also a major factor in good study habits.

Study techniques. In developing the major learning processes related to the unit of work the teacher must not neglect certain specific techniques. There are inherent in each phase of the process certain skills which need to be developed. If one were to list all of the specifics required in the "ability to locate information," the list would be a long one. In most cases these skills can be developed during the progress of the regular work. They do not require drill, except as given children need it in a certain situation. The teacher, however, must be conscious that such skills exist and that a given unit furnishes the pupils an opportunity further to develop certain skills.

A list of the study skills developed in the elementary school would be endless. Some idea of the skills in language arts can be obtained from Table XI. A few skills required for successful work in geography are: [12]

1. Accurate general reading habits
2. Ability to seek data from several types of sources (maps, pictures, text, etc.) and use them in the solution of a problem
   (Without special training pupils cannot use maps and pictures readily to get information before the sixth grade.)
3. Ability to weigh the adequacy of data at hand in explaining relationships between man and his natural environment
4. Skill in reading pictures for geographic information
5. Skill in obtaining several types of information from maps and globes
6. Ability to interpret graphs and charts
7. Habit of comparing text description with map representations and pictures
8. Knowledge of many technical terms unique to geography
9. Skill in using of cross-references to page, figure, etc.

The value of the list is in furnishing an idea of the complexity of the problem. Another list of study skills in geography is the one by Uttley in *The Teaching of Geography*.[13] A helpful list of much wider scope as far as all subject fields are concerned can be found in the Virginia Course.[14] In each case there are tentative suggestions concerning the grade in which a beginning can be made in developing the given skill. Many of the books on reading listed in Chapter 10 suggest techniques.

Placement of study skills depends upon the maturation of children. There is little to be gained from trying to develop certain skills before children are sufficiently mature. It is a waste of time and effort. The most adequate summary of the evidence accumulated on this problem can be found in the yearbook *Child Development and the Curriculum* [15] and a

[12] F. E. Lord, "Diagnosing Study Difficulties in Elementary Geography," *Educational Method*, Vol. 17, March, 1938, p. 274.

[13] National Society for the Study of Education, *The Teaching of Geography, Thirty-Second Yearbook* (Bloomington, Ill., Public School Publishing Company, 1933), Ch. XVI.

[14] Virginia State Department of Education, *Tentative Course of Study for the Virginia Elementary Schools*, Grades I-VII (Richmond, 1943), pp. 231-289.

[15] National Society for the Study of Education, *Child Development and the Cur-*

volume of the same title by Jersild.[16] In the yearbook Jensen has an especially valuable summary relating to the social studies which should be studied by teachers or committees who are attempting to make suggestions as to the placement of certain skills.

A changed concept of study. The viewing of study techniques as an inseparable part of the learning process has resulted in a real difference in approach. The best expression of the change that has taken place has been made by Reeder in this statement: [17]

> The real difficulty which diverted the movement into such unprofitable channels was the consideration of the individual, silent study process by individual pupils as a separate discrete thing, to be considered, organized, and modified quite apart from its relationship to the remainder of the teaching-learning process. Such a movement is doomed to failure. Individual study of an assignment is but one phase of a totality which includes such other phases as class discussion, the establishment of a motive or purpose, the selection of curricular materials, and their enrichment through a varied program of children's activities. Individual silent study is so inextricably bound up with these and so dependent on them for content and direction, that a consideration of it apart from them becomes a meaningless and futile exercise.

This change has meant starting with the whole learning process and then developing techniques as the need arises and as the child is sufficiently mature to handle them. Skills are not to be developed in isolation, then applied. They are an integral part of the whole learning process. They develop during the process of the unit. This approach requires more skill on the part of the teacher, for she must be conscious of the skills to be developed. She must be able to utilize such opportunities as arise for their presentation and know whether her pupils have matured sufficiently to make these learnings profitable. [18]

VII. PLANNING IN THE UNIT

Teachers in elementary schools have four principal questions in regard to planning units. To what extent should it be planned in advance? To what extent teacher-planned? To what extent pupil-planned? In how much detail should the work be planned during the development of the unit? There will be disagreement when people with various viewpoints answer the questions. The answers suggested here conform to practices

---

riculum, Thirty-Eighth Yearbook, Part I (Bloomington, Ill., Public School Publishing Company, 1939).

[16] Arthur Jersild and others, *Child Development and the Curriculum* (New York, Bureau of Publications, Teachers College, Columbia University, 1946).

[17] Edwin H. Reeder, "Directing Children's Study of Geography," *Educational Method,* Vol. 17, May, 1938, p. 387.

[18] For those interested in going further with this problem the two volumes mentioned in the bibliography, *Directing Learning* and *Child Development and the Curriculum,* are the most helpful.

in many modern public schools. Very definitely they represent one point of view, that followed throughout this chapter.

1. To what extent should the teacher plan the unit in advance? Many of our difficulties have occurred because of poor planning. In the final analysis the teacher is responsible for the experiences of the pupils and the sequence of those experiences. This position means that the teacher must so plan the units during any one year that the understandings for the given area be obtained.

It will be necessary to have planned each unit to the extent of knowing possible approaches, worth-while experiences and activities, materials which are available and the desired outcomes in terms of abilities, attitudes, appreciations, and understandings.

This planning furnishes a working basis on which to begin the unit. As a class begins its work, the direction and "finish" of the unit will be developed. The teacher's plan has acted as a "framework" for the house. The coöperative planning of pupils and teacher determines the final appearance of the product.

Effective planning cannot be done by the teacher if she does not know her class. There are several ways in which she can become better acquainted with the class before the pupils arrive. She can talk with their previous teacher. The cumulative record cards can be carefully studied. Perhaps samples of work done in the previous grade may be examined. Test results are of considerable value. Some schools keep a unit plan book which contains lists of the units, activities, and references covered and is passed to the next teacher. After the teacher has had the class, conversations with them, test results, specimens of work will give her a basis for understanding their needs.

The best list of suggestions to help in preplanning has been given by Strickland in a preliminary inventory of interests and resources: [19]

1. The teacher can study the children's interests through:
   - Drawing them into discussion
   - Observing their activities in the classroom
   - Observing their activities in the community
   - Noting their choices of work during unassigned periods
   - Noting their choices of books and available materials
   - Noting the things children make, draw, and paint
   - Recognizing the contributions children bring from home
   - Listening to their conversation and comments

2. The teacher can study the characteristics of her group of children, their needs and abilities through:
   - Observation of children as individuals and as a group
   - Records and reports of the progress of these children
   - Records of units carried on in previous grades
   - Study and diagnosis of skills
   - Consideration of special aptitudes and abilities

[19] Ruth G. Strickland, *How to Build a Unit of Work* (Washington, D. C., U. S. Office of Education, 1946), Bulletin 1946, No. 5, pp. 1, 2.

3. The teacher can study community activities and interests through:
   Articles and items in the local newspapers
   Incidental discussion with parents and other citizens
   Observation of local and community-wide activities
   Participation in church and club groups

4. The teacher herself can study community resources and opportunit. for worth-while first-hand experiences for children such as:
   A building under construction
   New enterprises being launched
   Industries
   Libraries and museums
   Playgrounds and recreational resources
   Parks, woods, and opportunities for nature trips

5. The teacher individually or as a member of a group can study resources such as:
   Libraries
   Textbooks, source books, supplementary books
   Audio-visual aids
   Materials for construction and art projects
   Material for science experiences

Without any planning by the teacher there would be no basis for determining what direction the unit should take. The teacher would have little basis for evaluating the worth of pupil suggestions. She would lack a perspective for determining whether the suggested departures would be of value and the class might become involved in the unit before knowing whether there was sufficient material available to make the experience worth while.

2. How far in advance should a unit be planned? Probably it would be possible to outline very generally the tentative titles of units for a semester. A survey of available materials might also be made. It would be more profitable to postpone the rest of the planning for the unit. All available information on the pupils should be studied.

The planning of approaches, experiences, and outcomes should be ready for the first unit of a semester. For the other units such planning should take place after the teacher knows the direction which the previous units have taken. This means that during the unit in progress the teacher will be planning the following unit.

3. To what extent should pupils participate in planning?

a. Pupils should plan the detailed problems to be studied.
b. They should plan the learning experiences.
c. They should plan the methods by which they will obtain the desired data.
d. They should plan what things of value they expect to get from the unit.

This last does not mean they will plan all of the outcomes but that they will share in planning the outcomes that have significance for them. The teachers may hope to obtain other outcomes for which the pupils do not plan and are not aware.

4. How detailed should the work and activity be planned which the pupils will do during the unit? One of the difficulties of much committee work has been in lack of planning. Time must be spent in being sure that every committee and every pupil within the committee understands his special responsibility. The planning period is by no means wasted time. Work procedure is one of the desired outcomes of the unit.

This planning must be much more detailed than it usually is. The difficulty with many note-books and scrap-books has been that pupils have made no plan or outline of material to be included. The result is as would be expected—chaotic. When we receive an unsatisfactory final product, the first step in locating the difficulty is to scrutinize thoroughly the planning process to determine whether or not the failure began in this step.

As one person has put it, "The teacher must plan so the pupils may plan." The teacher's planning will give general direction and relate the unit to the purposes of education. The pupils' planning will provide for an expression of their purposes and interests and provide a guide for them in their procedure.

5. An overview of planning. More comprehensive treatments of planning can be found in Burton,[20] Giles,[21] and Strickland.[22] Criteria for evaluating planning is outlined by Giles in *Group Planning in Education.*[23] A summary of the major ideas in planning is reproduced from Strickland: [24]

1. Survey the needs and interests which justify this unit and make it significant. Are there any general needs and problems of life which make this study important? Are there community needs which might be helped? Do these children have need for the study and are they interested in it?
2. List important objectives or goals which might be achieved through this study.
3. Make an overview of the subject matter which might enter into the study, the kinds of experiences which would be good, and any ways in which different subjects could be drawn in or integrated with this unit.
4. List books and other materials for the children to use as well as some for teacher reference.
5. Plan possible ways of introducing the study and getting children interested in it.
6. Plan the working period, keeping in mind the fact that only part of the working plan can be arranged in advance because the children are to help plan it.

(a) Carrying on discussion and other activities which help the teacher find out what children know about the subject, their attitudes toward it, and what they are interested in.

(b) Planning the unit with the children and getting the work under way by:

[20] William H. Burton, *op. cit.*, pp. 280-287.

[21] H. H. Giles, *Teacher-Pupil Planning* (New York, Harper and Brothers, 1941).

[22] Ruth G. Strickland, *op. cit.*, pp. 5-6.

[23] H. H. Giles, "What Group Planning Means," *Group Planning in Education* (Washington, D. C., N.E.A., Department of Supervision and Curriculum Development, 1945), pp. 142-143.

[24] Ruth G. Strickland, *op. cit.*, pp. 5-6.

Listing questions on which information is wanted; making charts showing what to do; planning excursions, construction, and other activities; finding and listing sources of information, tools, and materials, and arranging committees to work on some of the questions or problems.

(c) Gathering information and ideas from books and other sources, and sharing through discussions, reports, and other means. Carrying out the plans for excursions and other projects.

(d) Organizing the ideas gathered, checking the list of questions to see whether adequate answers have been found, and to see that the children really understand the material they have been studying.

(e) Summarizing the total learnings in some way. It could be done through giving a program for parents or another group of children, writing an original play, painting a mural, or making a record for the class yearbook. Evaluating would be necessary to give the children an opportunity to consider the worth of the work they have been doing. There might be a group-made test on important points to be mastered.

7. Plan the evaluation of the total unit of work. Final evaluation would be concerned with two main points:

(a) Growth and changes which have taken place in the children.

(b) Individual strengths, weaknesses, and problems which need further attention.

VIII. EVALUATING THE SIGNIFICANCE OF THE UNIT

Evaluation in terms of objectives. What changes have occurred in the youngsters as a result of the unit? This question must be answered if the teacher is to evaluate the unit. Obviously, the question is much broader than can be determined by a pencil and paper test. Yet it is the too common practice for teachers to give a test covering the factual information taught in the unit and feel that an evaluation has been made.

The problem of evaluation is closely tied to the purposes and experiences of the unit. The ideal procedure is to have the experiences or activities related to the purposes of the unit. Then the evaluation is developed to measure the extent to which the purposes had been realized through the activities. Actually a study of a number of units showed very little or no relation between the purposes or aims of the learning activities and the method of evaluation. Teachers had written something on paper under aims and purposes because they were supposed to fill out a unit outline. There is much that can be done to unify the purposes, learning experiences, and the evaluation of the unit.

Obtainable objectives. Objectives or outcomes are often carried to ridiculous extremes in writing units. These examples selected from two units on a fourth grade level are ample illustrations of this point:

Outcomes

An ability to write an interesting letter
The habit of working consistently and carefully
A proper attitude toward criticism
A willingness to do cheerfully all assigned work
An ability to pronounce and spell all words encountered
The use of the correct word to say what you mean

If any two social-studies units will develop these virtues and abilities in fourth-grade children, they should be taught in all fourth grades. It is not at all uncommon to find more space given to objectives than to the remainder of the unit.

Objectives would have much more significance if only one or two were selected for each unit. Then under these objectives list the activities, content, or problems suggested which could be used to realize them. The final step would be to provide a means to evaluate the extent to which the objective had been realized.

Some teachers might formalize this procedure to too great an extent, and care should be taken to avoid this happening. Certainly it would do much to cure the present situation in which there is little or no relation between the stated objectives of most units, the things the youngsters do and learn, and the way in which the unit is evaluated.

One of the best methods of presenting objectives appears in a resource unit on *Using Our Land Wisely* from the Seattle schools. Specific behaviors are suggested as a result of the understandings to be developed. Stressing the moving from understanding to action provides a guide missing from most courses of study. The anticipated understandings are: [25]

Pupils will be helped to

1. Gain a better understanding of the relationship between the way people live and the environment in which they live.
2. Recognize the importance of our natural resources to their own well-being and joy of living.
3. Become increasingly aware of the importance of soil, forests, fish, wildlife, and minerals to our ways of making a living in Seattle.
4. Gain a better understanding of how men sometimes find it necessary to change their environment to meet their needs.
5. Understand more fully some of the dangers threatening our resources.
6. Learn of some of the problems involved in the wise use of our natural resources.
7. Realize more fully the interdependence of all people everywhere and the individual's responsibility in that relationship.

As these understandings are developed, we would expect to find changes in behavior. The following are illustrative:

Children will be careful with fires when the family is on an outing in the forests.

Several Christmas trees will not be cut when only one is needed.

Undersize fish will be kept alive and thrown back when caught.

Picnic grounds and school grounds will be kept clean.

Birds and their nests will be protected rather than destroyed.

Paper, a wood product, will not be wasted in the classroom, lunchroom, and washroom.

Undersize and female crabs will not be taken at the beaches.

Children will be eager to tell the class of the interesting facts they have learned about our resources on week-end trips and excursions.

[25] Curriculum Department, Seattle Public Schools, *Using Our Land Wisely* (Seattle, Washington, Public Schools, 1948), pp. 6-7.

If teachers are thinking of objectives as mere lists which should be placed at the beginning of the unit, it might be advisable to change the terminology. The term *expected outcomes* could be used, and the outline of the unit could be adapted accordingly:

I. Overview of the unit
II. Expected outcomes with suggested procedures
  A. Expected outcome
    1. Suggested activities, problems, and materials
    2. Method of evaluation
  B. Expected outcome
    1. Suggested activities, problems, and materials
    2. Method of evaluation
III. Bibliography

This method of outlining a unit in advance does not show the sequence in which it should be carried on. In actual teaching the activities from several expected outcomes would be combined. However, it does have the effect of focusing attention on the development the teacher wants in the children (expected outcomes), the way she is going to try to make those changes (activities), and whether the changes have actually been made (evaluation).

Practice has developed a hierarchy of objectives.[26] Custom has called for general objectives for education, objectives for each subject, objectives for each year, and objectives for each unit. The ridiculousness of the situation is apparent when one reads many of the long lists. Actually a given unit has very few unique objectives. It contributes to the general objectives of education. The writing of a long list of specific objectives may only result in loss of the general objectives.

The teacher must be continually conscious of the general objectives as well as the special objectives toward which the unit is directed. If she is not, she will do nothing to help the pupils attain those objectives. One of the best examples of this need is shown in the difference which primary and intermediate teachers place on incidental number work. The primary teacher is conscious of the need to develop number meanings through every situation possible. The intermediate teacher is not aware that this is one of her functions and hence does nothing about it.

Worth of the objective. A separate problem which has received too little emphasis deals with the worth-whileness of the purposes or objectives themselves. That the teacher should make her evaluation in terms of her purposes is different from a questioning of the worth of the purposes themselves. Has the most worth-while outcome been the center of the unit? In too many units an impartial observer will have to answer

[26] The discussion of objectives by Burton, *op. cit.*, pp. 266-276, should be read by everyone concerned with objectives. He elaborates on a theory of levels of objectives: (1) remote objectives of society, (2) general social purposes, (3) teacher's purposes, and (4) pupil's purposes. See also Merritt M. Thompson, "The Levels of Objectives in Education," *Harvard Educational Review*, Vol. 13, May, 1943, pp. 196-211.

that "no," it has not. The teacher has neglected to apply the criterion "a unit should deal with some phase or problem of living sufficiently significant to merit careful study."

Children's standards. Much is being done to develop standards which are set up by the children and used as a check for their work. Typical are these standards of good speech formulated by a 3B class: [27]

Do I sit and stand well?
Do I look at my audience?
Do I know what I am going to say before I begin to speak?
Do I speak in an interesting manner?
Do I speak so I can be heard?
Do I pronounce my words correctly?
Do I use my mouth when I speak?

Better teachers are working to aid pupils in the evaluation of their own work. Several devices are being utilized. Frequently time is allowed during the unit to discuss progress and to determine what else could be done. Often when committees have finished their work, they discuss their progress with the teacher. Praise for work accomplished and suggestions for further work come from the class when the final report is made.

Tests and other instruments of evaluation are discussed in considerable detail in Chapter 15. This chapter should be carefully studied as a more comprehensive treatment of the problem of this section.

IX. THE RÔLE OF THE TEACHER

Dewey's interpretation. Great differences of opinion have existed regarding the rôle of the teacher in the classroom. In the traditional program she was the autocratic dispenser of the program handed down from the administration in the form of courses or texts. In extreme cases in the new program she has appeared to be only an observer of a class. The best interpretation of his or her place has been given by Dewey in his *Experience and Education*.[28] He points out that the teacher:

1. Must have that sympathetic understanding of individuals as individuals which gives him an idea of what is actually going on in the minds of those who are learning.

2. Must understand the needs and capacities of the individuals who are learning at a given time. It is not enough that certain materials and methods have proved effective with other individuals at other times. There must be reason for thinking that they will function in generating an experience that has an educative quality with particular individuals at a particular time.

3. Is responsible for a knowledge of individuals and for a knowledge of subject-matter that will enable activities to be selected which lend themselves to social organization, an organization in which all individuals have an oppor-

[27] Adapted from *Missouri Course of Study for the Elementary Grades* (Missouri State Department of Education, 1937), pp. 726-727. The 1946 edition has omitted such material and stressed teacher objectives.

[28] John Dewey, *Experience and Education* (New York, The Macmillan Company, 1938). The following quotations are taken in order from pages 33, 45, 61, 65, 33, 35, 90, 85, 66. Quoted by permission of the publisher.

tunity to contribute something, and in which the activities in which all participate are the chief carrier of control.

4. Must survey the capacities and needs of the particular set of individuals with whom he is dealing and must at the same time arrange the conditions which provide the subject-matter or content for experiences that satisfy these needs and develop these capacities. The planning must be flexible enough to permit free play for individuality of experience and yet firm enough to give direction toward continuous development of power.

5. Must be able to judge what attitudes are actually conducive to continued growth and what are detrimental.

6. Must not only be aware of the general principle of the shaping of actual experience by environing conditions, but that they also recognize in the concrete what surroundings are conducive to having experiences that lead to growth.

7. Must select those things within the range of existing experience that have the promise and potentiality of presenting new problems which by stimulating new ways of observation and judgment will expand the area of further experience.

8. Should allow his suggestion to develop into a plan and project by means of further suggestions contributed and organized into a whole by the members of the group.

9. As the most mature member of the group has a peculiar responsibility for the conduct of the interactions and intercommunications which are the very life of the group as a community.

That teaching is not an easy job is only too apparent. It requires the best that any person can give. A broad background is essential, for the teacher must know children and know the "how," the "what," and the materials "by which" teaching can be most effectively done.

The traditional school actually required only a limited knowledge of subject-matter on the part of the teacher, only that to be taught to the pupil. The modern school requires a much broader background, for the teacher must "recognize . . . what surroundings . . . lead to growth, select activities . . . which lend to social organization . . . subject-matter that satisfies needs, . . . select those things . . . which will expand the area of further experience."

Democracy needed. This newer concept of the teacher's rôle should do much to further a more democratic school system. It should help administrators to realize that theirs is not the most important job in the school system. There is no "most important" job. All who are connected with the system are there to help provide the optimum conditions for children to learn. This applies equally well to the janitor or the superintendent, to the board of education, or to the teacher. Until principals, superintendents, and boards of education realize by action that they are professional co-workers with teachers and not their bosses, there will be no democracy in our school systems. Neither will there be any democracy in our classrooms, for it is foolish to expect teachers to follow preachings when the practice exercised upon them is of an entirely different sort.

Teacher activities. A partial clarification of the things the teacher must do in the classroom is given in the following list. Sixty-eight published

units were carefully examined for the implications of activities which the teacher must perform. The list is arranged in order of frequency of mention.

TEACHING PROCEDURE REQUIRED IN PRESENTING UNITS OF WORK [29]

1. Form groups or committees of pupils.
2. Make visual aids available.
3. Make use of reference materials.
4. Correlate with other subjects.
5. Conduct discussions.
6. Help pupils develop outlines.
7. Provide drill.
8. Call for oral reports.
9. Use questions to develop understanding of problem.
10. Do testing.
11. Display exhibits.
12. Provide for individual differences.
13. Take pupils on field excursions.
14. Use the lecture to inform pupils.
15. Arrange for dramatization.
16. Help pupils make articles.
17. Encourage pupils to exchange experiences.
18. Bring in outsiders for talks.
19. Have pupils prepare topical reports.
20. Have pupils compile note-books.
21. Teach appreciations and attitudes.
22. Organize and plan materials with pupils.
23. Develop skill in solving problems.
24. Require written reports.
25. Direct pupils in making maps, charts and graphs.
26. Make a bibliography.
27. Bring in materials for study.
28. Direct search for materials related to the unit.
29. Read stories to children.
30. Engage pupils in conversation.
31. Develop skills.
32. Arrange demonstrations.
33. Provide drawing experiences.
34. Direct pupils to general subject-matter to be read.
35. Help pupils formulate questions.

This list of teacher activities gives some slight idea of the various procedures and techniques with which a teacher must be familiar to do an effective job.[30]

[29] Adapted from an unpublished study by E. G. Wipperman and H. B. Mennes prepared for Curriculum Seminar, University of Wisconsin, 1938.

[30] The list has special value for prospective teachers. They will find it valuable to explore further the various techniques required to conduct these activities successfully. The references in the bibliography at the end of the chapter will supply further suggestions. Especially helpful are the ones by Hockett and Jacobsen, Kallen, Lane, Macomber, Melvin, Strickland, and Tippett.

X. SUGGESTED UNIT OUTLINES

Too much diversity of outlines. Different outlines for units are nearly as numerous as the school systems in which teachers are required to write units. Outlines vary from a simple one of several suggested headings to the most complex type that can be imagined. In a seminar study [31] of sixty units it was found that the number of headings varied from one to fourteen. Over half of the outlines (thirty-seven) used from four to seven headings.

The terms used to characterize these headings of the outlines varied greatly. Some thirty-six different headings appeared in two or more of the outlines. An idea of the diversity can be obtained from the list of items common to eight or more of the sixty units.

Activities	38	Procedure	13
Objectives	31	Vocabulary	10
Approaches	24	Materials	10
Bibliography	22	Introduction	9
Evaluation	18	Aim	8
Outcomes	18	Preview	8
Correlation	16		

Obviously much could be done to simplify terminology. *Objectives, outcomes,* and *aims* were used with practically the same meaning as also were *evaluation, tests, culminating activities, summarization, culmination,* and *summary.* Some systems have their teachers classify all the activities under these headings: "problem-solving enterprises," "producers' enterprises," "consumers' enterprises," "specific learning enterprises" (by which they mean drill). Little wonder that teachers become confused and discouraged in their attempts to keep abreast of waves of educational pedaguese.

Simplicity is one basis of a good unit outline. Teachers should certainly be able to understand it. Many of the outlines title their respective headings in such a way that only the originator of the outline can guess what is wanted.

Actual outlines. The following outlines are in contrast. Nearly any teacher could write a unit from the first, whereas the second is far more complicated.

BURBANK UNIT OUTLINE [32]

1. *The Overview of the Unit:* The main purpose of the unit should be briefly stated. Then should be listed the special (*a*) understandings, (*b*) appreciations, (*c*) attitudes, and (*d*) abilities which it is hoped will be developed by the unit.

[31] From "A Study of Units of Work" by the Curriculum Seminar under the direction of Matthew H. Willing and J. Murray Lee, University of Wisconsin, 1938.

[32] Adapted from an outline prepared by one of the authors for use in the Burbank (California) Secondary Schools.

2. *Possible Learning Experiences:*
   A. Individual experiences
   B. Group or class experiences
   C. Culminating experiences

This section furnishes an opportunity to list a number of learning experiences which might possibly be utilized in the class. It is not intended that this list be exhaustive, but rather suggestive of experiences which would be profitable to students.

3. *Suggested Problems:* The problems of the unit will be developed with the students during the class period. This section is intended for the teachers' guidance and should include the most important problems of the unit, though all of them may not be later developed.

4. *Materials:*
   A. Teachers' references
   B. Students' references
   C. Visual materials

This section provides a place for listing the materials of instruction which the teacher feels will be helpful in presenting the unit.

5. *Probable Methods of Evaluation:* The methods of determining what changes have taken place in the student, as a result of the presentation of the unit, should be briefly stated. It is recognized that many of these methods of evaluation will develop during the unit but some thought should be given to it at the beginning. Evaluation will take place during as well as at the completion of a unit.

WAUWATOSA, WISCONSIN, UNIT OUTLINE (1939)

A. *Scope of Unit*
   1. What social understandings and appreciations should be developed?
   2. What abilities and techniques are to be stressed?
   3. What is the outstanding personal problem presented by your class? What can be done about it in this unit?

B. *Aids to Developing Unit*
   1. What socializing experiences can be utilized?
   2. What community resources can be utilized?
   3. What instructional materials are available?

C. *Procedures to Be Followed in Developing Unit*
   1. What are several approaches which could be made to introduce the unit?
   2. What are the most important possible problems through which the scope of the unit could be developed?
   3. What are possible learning experiences through which our scope could be developed?

Uniformity of the unit outline has many advantages in a school or system. All the teachers are able to understand them readily. It also makes it easy to combine the units prepared by several teachers on the same topic into a master or source unit from which teachers could gain suggestions for a teaching unit.

The outline that is adopted depends to a certain extent upon the phases on which the teachers need to focus their attention. The first outline has

value after teachers have had some experience in writing units. It is well balanced and simple.

The final unit outline should be developed from a discussion of the problem by the teachers in the school. It should be simple. It should be understandable. Sufficient explanation should be given under each heading so that there is common agreement on what is meant.

The Wauwatosa outline meets these qualifications. It was evolved by the teachers. It is especially adapted to the concept of the elementary social studies which they are developing. It is simple and understandable. The scope of the unit is determined by understandings, abilities, and the personal needs of the class for social adjustment. Aids in developing the unit are social experiences, community resources and materials. Procedures are considered by listing approaches, possible problems, and learning experiences. This outline is to be used by the teacher for planning the unit.

Resource units.[33] The resource unit is a carefully worked out series of suggestions which the teacher may use in preplanning a teaching unit. There is general agreement that resource units differ from teaching units in that:

1. They are prepared for use by teachers.
2. They cover a broad area.
3. They contain much more material than is possible to use with any one class.
4. They suggest a variety of possibilities of achieving the same goals.

Most resource units have many suggested enrichment activities in language, music, and art. Some contain subject-matter the teacher is not apt to know. All are comprehensive in the references for teachers and pupils and in visual aids. Pasadena uses the technique of several suggested sequences. In the unit on *Modern California,* the suggested sequences are either "Cargoes Through the Harbor" or "Freighting of Products by Truck and Train."[34]

A typical outline is that followed in *Using Our Land Wisely:*[35]

I. Significance of the Problem
II. Place of the Material in the Intermediate Grades
III. Anticipated Outcomes
IV. Suggested Problems, Topics, and Questions
V. Activities and Experiences
    Introductory
    Developmental
    Culminating
VI. Evaluation

[33] James I. Quillen, *Using a Resource Unit* (Washington, D. C., National Association of Secondary School Principals, 1942). This has become the basic reference on resource units.

[34] Pasadena City Schools, *Unit of Work on Modern California* (Pasadena, California 1946).

[35] Seattle City Schools, *op. cit.*

VII. Visual Aids
VIII. Bibliography
Including teacher reference, pupil references, and sources of free and inexpensive material.

XI. PROGRAMMING THE DAY'S WORK

A new plan for the day. Flexibility and long blocks of time are the keynotes in the daily schedule of the modern classroom. Formerly the day was scheduled minute by minute and subject by subject. No matter how vital a discussion or how worth while a project, when the time came to change to another subject, the class changed. If they didn't, the principal might happen in and find out from the schedule on the door that they were wasting their time by working on English rather than on handwriting. In fact, in many schools the schedule proved to be the greatest interference with learning which they had.

For a modern program to develop, the shackle of the fixed schedule must be removed. Agreeing on a weekly schedule affords an opportunity for teacher-principal educational planning. To the teacher, the schedule which the principal or superintendent requires is a major indication of the supervisor's real educational philosophy.

Another toy balloon which burst when it was pricked by research was the idea that certain subjects had to be scheduled early in the day to avoid the results of mental fatigue. Mental fatigue wasn't the difficulty; the youngsters were "just plain bored." Actually the time of day when things are scheduled makes no difference in the possible learning.

The schedule is only an aid to providing the optimum learning situation. With that as a basis, certain needs which must be met by a schedule can be outlined. It is entirely possible to build schedules to meet these basic needs.

1. It must be flexible enough for a learning situation to continue as long as it is vital, to enable excursions to be taken, to plan for longer work periods than are usual.
2. It must provide for long blocks of time. Children cannot effectively work on problems in short periods repeated day after day.
3. It must provide for physical activity. Exercise is a fundamental need of children. The younger the child the more frequent is the need for physical change. Rest periods are essential to the young child.
4. It must provide time for a variety of activities during the day, time for research and study, for drill, for self-expression, for enjoyable experiences in reading, art, and music.

Weekly schedules have become more popular as a means of introducing more flexibility and longer blocks of time. The teacher uses the weekly schedule as a check to determine whether she has made a fair distribution of her time. In her rôle as a guide, she must be able to control time allotments as well as experiences.

Many schools have organized their work with a social-studies unit and a science or health unit during the day. With such an arrangement the two units can be handled in the morning. Within these units related reading, oral and written expression, number concepts, and related art and music can be developed.

The afternoon is then used for arithmetic not developed through the units, creative music, art, and language experiences unrelated to the unit,

SCHEDULE A: FOR A ONE-ROOM RURAL SCHOOL [36]

9:00	Social-studies block	1:00	Reading block
10:30	Recess	2:30	Recess
10:45	Language-arts block	2:45	Arithmetic block
11:40	Fine-arts block	3:40	Science block
12:00	Noon	4:00	Dismissal

SCHEDULE B: FOR A FIFTH GRADE [37]

Period	*Minutes*		*Subject*
	Weekly	Daily	
9:00-12:00	25	5	Attendance and announcements
	75	15	Health instruction
	100	80	English:
			Reading and literature
			Library period
			Spelling and penmanship
	200	40	Arithmetic and banking
	100	20	Physical education
	800	160	
	100	20	Recesses
	900	180	TOTAL
12:00- 1:00			Noon
1:00- 3:30	25	5	Attendance and announcements
	100	20	Music
	(575)	115	Units of activity involving
	150		Written and oral English
	50		Civics and service
	200		Social studies
	75		Science
	100		Art education
	700	140	
	50	10	Recesses
	750	150	TOTAL

[36] Adapted from Wisconsin Department of Public Instruction, *Suggestions for Revising the Instructional Program of the Rural Elementary Schools of Wisconsin, Curriculum Bulletin,* Vol. 2, No. 2 (Madison, August, 1938).

[37] Adapted from John A. Hockett and E. W. Jacobsen, *Modern Practices in the Elementary School* (Boston, Ginn and Company, 1938), pp. 106-107.

SCHEDULE C: FOR THE INTERMEDIATE GRADES [38]

9:00. . . . Informal greetings, routine matters, exchange of ideas, music, reports of interesting events, designed to give the teacher the opportunity to observe each child and to give children an opportunity to express those things in which their interest is greatest.

9:15. . Social studies and nature study
Informal reports of committees or individuals as to the progress of their enterprises. Evaluation of work done. Plans and discussions of the work of the day. Appointing of committees, attention to the arrival of new material such as books from the library, material brought in by the class members, notices on bulletin board about subject in hand. Construction work, art work, research work done by groups or individuals as planned. Oral reports or other material to be shared by the group given at the last of the period. Language, arts, and reading cannot be divorced from social studies and nature study.

10:30. . . . Healthful living
Health and physical education activities and free play. Nutrition program and rest period for those who need it.

11:10 . . Language arts
Oral and written expression, spelling and handwriting skills and practice in the use of these skills through writing and presenting plays, and puppet shows, writing stories or poetry, reporting for the school newspaper, preparing reports for social-studies period.

12:00 . Lunch, rest, and directed playground activities

1:00 . . . Arithmetic enterprises
This period should be largely devoted to individual instruction. Establishment of fundamental skills should be the purpose.

1:40. . . Music skills, appreciations, and rhythms
Harmonica bands, orchestra, glee clubs. Club meetings, use of auditorium, committee meetings. Creative abilities may be a part of work under way in social-studies period; or a special interest, as pottery, weaving, or other craft work or fine arts. Library period (2 days a week).

2:10. . Rest and recreation

2:20 . Reading activities
Reading groups on the basis of ability. Remedial work for children with special disabilities. Free reading period. Reading research for enterprises in language arts, social studies, or nature study.

recreational reading and skills which the unit has shown need special attention.

Sample programs. Several schedules are given to illustrate the type of schedule which is being developed. Schedule A represents the most extreme of several schedules suggested for a one-room rural school. It can only be utilized when the teacher works with groups of pupils according to their needs rather than according to their grade classification. Schedule B is a suggested schedule for a fifth grade in a city school. It illustrates the weekly type of schedule and possible subjects which may be grouped together for improved scheduling. Schedule C is a program for the intermediate grades which suggests the types of things that are done during each period. It is also built on the larger blocks of time and combines related subjects.

[38] Adapted from *Teachers' Guide to Child Development in the Intermediate Grades*, compiled by the State Curriculum Commission (Sacramento, Calif., State Department of Education, 1936), pp. 34-35.

Suggested Learning Experiences

The principal experience for this chapter should be the construction of a unit as suggested under item 9. As the other suggestions are followed, your proposed unit should be kept in mind.

1. Select a written account of a unit or series of units used during the year. Use the criteria developed in section II to evaluate them.
2. Compile from several units a list of suggested approaches to the unit. What additional types of approaches could be profitably utilized? These same units should be used for items 3, 4, 5, 6, and 7.
3. What evidences are there that there was a careful formulation of problems and planning of procedures with the class?
4. List sources used by the pupils in obtaining information. List also methods used by individuals or committees in presenting their data. What additional sources or methods might have been used?
5. Compile a list of culminating activities. Can these activities be classified according to types?
6. Evolve from the suggestions in section IV or elsewhere a means of classifying activities, which meets the requirements of your group. Using this, classify the learning experiences which were used in the units studied in item 2.
7. Evaluate the learning experiences according to the criteria listed in section IV.
8. Evolve from the suggestions in section IX or elsewhere a unit outline which meets the requirements of your group.
9. Prepare a unit according to the outline accepted by your group. You should exchange your unit with that of another member of the group and evaluate it according to the criteria developed in this chapter.
10. Using the list of teaching procedures required in a unit of work as given by Wipperman and Mennes, first, reclassify it, and eliminate overlapping. Second, divide the resulting items among members of the group and each one prepare a paragraph of suggestions for his procedure.
11. Prepare an improved outline of a daily program for a class which has been observed.

Selected References

Adams, Fay, *Educating America's Children* (New York, Ronald Press Company, 1946). Chapter IV is a good overview chapter on a unit of work.

———, *The Initiation of an Activity Program into a Public School,* Contributions to Education, No. 598 (New York, Teachers College, Columbia University, 1934). An analysis of difficulties in beginning an activity program with suggested solutions.

Association for Supervision and Curriculum Development, *Group Processes in Supervision* (Washington, D. C., National Educational Association, 1948), 130 pp. Especially valuable for democratic planning and processes of group participation.

Burton, William H., *The Guidance of Learning Activities* (New York, Appleton-Century-Crofts, Inc., 1944). Chapters 9 and 10 should be read for a thorough orientation into unit teaching.

California State Department of Education, *Teachers Guide to Child Development in the Primary Grades* (Sacramento, 1930). Contains valuable descriptions of units.

———, *Teachers Guide to Child Development in the Intermediate Grades* (Sacramento, 1936). Contains valuable descriptions of intermediate units.

Carey, Alice E., Hanna, Paul R., and Meriam, J. L., *Catalog; Units of Work, Activities, Projects, etc. to 1932* (New York, Teachers College, Columbia University, 1932). Annotations of 7,000 printed accounts of units of work. See also Meriam, J. L., *Activities, Projects, Units of Work Cataloged for 1932-1939* (Berkeley, California, University of California Press, 1943).

Department of Supervision and Curriculum Development, *Group Planning in Education,* 1945 Yearbook (Washington, D. C., National Education Association, The department, 1945), 156 pp. Many excellent descriptions of teacher-pupil planning.

DICKIE, Donalda J., *Enterprises in Theory and Practice* (Toronto, W. J. Gage and Company, 1940). Enterprise is our Canadian neighbor's term for unit. Valuable for broadening thinking.

FOSTER, Josephine C., and HEADLEY, Ruth E., *Education in the Kindergarten* (New York, American Book Company, 1936). Valuable suggestions for kindergarten units.

FREDERICK, Robert W., RAGSDALE, Clarence E., and SALISBURY, Rachel, *Directing Learning* (New York, Appleton-Century-Crofts, Inc., 1938). Excellent for material on directing study.

GEYER, Denton L., "The Results of Activity Instruction," *Journal of Educational Research,* Vol. 30, November, 1936, pp. 188-197. Summarizes research on the results of the activity movement. Helpful to see relationships between studies.

GILES, H. H., *Teacher-Pupil Planning* (New York, Harper and Brothers, 1941), 395 pp. Basic for teacher-pupil planning.

GWYNN, J. Minor, *Curriculum Principles and Social Trends* (New York, The Macmillan Company, 1943). Chapter VII shows the development of the "unit technique."

HARAP, Henry, Chairman, *The Changing Curriculum,* a publication of the Department of Supervisors and Directors of Instruction and the Society for Curriculum Study (New York, Appleton-Century-Crofts, Inc., 1937). Chapter VII deals with the development of units.

HILDRETH, Gertrude, *Child Growth Through Education* (New York, Ronald Press Company, 1948). Chapters II-VII valuable for unit work. Chapter VIII excellent for the daily schedule.

HOCKETT, John A., and JACOBSEN, E. W., *Modern Practices in the Elementary School* (Boston, Ginn and Company, 1943). Chapters II to IV are especially helpful to teachers in developing a unit.

HOPKINS, L. Thomas, *Interaction* (Boston, D. C. Heath & Company, 1941), 490 pp. Excellent for those interested in experience units.

———, "What Are the Essentials?" *Teachers College Record,* Vol. 16, May, 1915, pp. 493-500. Eleven essentials, each a quality in the life of an individual.

HORRALL, Albion H., and others, *Let's Go to School* (New York, McGraw-Hill Book Company, 1938). Part II contains detailed descriptions of units on animals, community of San Jose and European Architecture.

JERSILD, Arthur T., and others, *Child Development and the Curriculum* (New York, Bureau of Publications, Teachers College, Columbia University, 1946), 274 pp. Useful for general concepts of interests and needs of children at various levels.

JONES, Arthur J., GRIZZELL, E. D., and GRINSTEAD, Wren Jones, *Principles of Unit Construction* (New York, McGraw-Hill Book Company, 1939), 232 pp. Of general value.

KALLEN, Miriam, *The Primary Teacher Steps Out* (Boston, Lothrop, Lee & Shepard Company, 1936). Describes a number of units and procedures.

LANE, Robert Hill, and others, *The Progressive Elementary School* (Boston, Houghton Mifflin Company, 1938). Chapter VI considers a number of current questions concerning units.

———, *The Teacher in the Modern Elementary School* (Boston, Houghton Mifflin Company, 1941). Chapters V-X valuable for illustrations and general principles.

Lincoln School Units of Work (New York, Bureau of Publications, Teachers College, various dates). Units in this series are most comprehensive.

MACOMBER, F. G., *Guiding Child Development in the Elementary School* (New York, American Book Company, 1941). Chapters II-V contain descriptions of units, and excellent material on selection, planning, and guiding units.

MCCALL, William A., ed., *Teacher's Lesson Unit Series* (New York, Teachers College, Columbia University, 1931). A series of units published on a large number of topics. Write to the publisher for a list.

MELVIN, A. Gordon, *The Activity Program* (New York, The John Day Company, 1936). Chapters X to XVI contain a discussion of classroom procedures.

MERIAM, J. L., "A Critical Survey of 1000 Activities," *Journal of Experimental Education,* Vol. 2, June, 1934, pp. 327-332. Answers some questions relating to selection of activities.

National College of Education, *Curriculum Records of the Children's School* (Evanston, Ill., National College of Education, 1940), 606 pp. Valuable descriptions of units.

National Society for the Study of Education, *The Activity Movement, Thirty-Third Yearbook,* Part II (Bloomington, Ill., Public School Publishing Company, 1934). Development, definitions, and critical appraisal of the movement.

———, *Child Development and the Curriculum, Thirty-Eighth Yearbook,* Part I (Bloomington, Ill., Public School Publishing Company, 1939). The best single source for a comprehensive summary of research in the field of child development having implications for the curriculum.

NOAR, Gertrude, *Freedom to Live and Learn* (Philadelphia, Franklin Publishing and Supply Company, 1948), 159 pp. Primarily for junior high school teachers but of value in teacher-pupil planning, execution and evaluation of experience units.

PARKER, J. Cecil, "Experiences to Meet Goals," *Educational Leadership,* Vol. 6, January, 1949, pp. 199-203. Helpful for evaluating experiences.

QUILLEN, James I., *Using a Resource Unit* (Washington, D. C., National Association of Secondary School Principals, 1942). The basic reference on resource units.

RICHARDSON, H. D., "What is a good Unit?" *Curriculum Journal,* Vol. 14, April, 1943, pp. 178-180. Provides a check list for evaluating units.

SMITH, Donnal V., and FREDERICK, Robert W., *Live and Learn* (New York, Charles Scribner's Sons, 1938). Chapter V discusses planning suitable for the beginner.

STRETCH, Lorena B., *The Curriculum and The Child* (Minneapolis, Minn., Educational Publishers, 1939). Chapters IV to VI are helpful especially for the beginning teacher.

STRICKLAND, Ruth G., *How to Build a Unit of Work* (Washington, D. C., U. S. Office of Education, 1946), 48 pp. Bulletin 1946, No. 5. Useful for the classroom teacher, contrasts differences on primary and intermediate levels.

TIPPETT, James S., *Schools for a Growing Democracy* (Boston, Ginn and Company, 1936). Chapters IX-XII describe units on Mexico, textiles, and South Carolina in detail.

Wisconsin Department of Public Instruction, *Suggestions for Revising the Instructional Program of the Rural Elementary Schools of Wisconsin, Curriculum Bulletins,* Vol. 2, No. 2, August, 1938. Lois Nemec has summarized a variety of ways of organizing the school day that are in practice in Wisconsin.

WOFFORD, Kate U., *Teaching in the Small Schools* (New York, The Macmillan Company, 1946). Chapter IV discusses scheduling in the small school, and Chapter V is a brief treatment of units.

8

Resources for Learning [1]

The typical "one material of instruction" in the outmoded elementary school was the approved textbook in each subject for each grade. Thus the directive factors in child growth were in the scheme of organization followed by the textbook writers.

In contrast, the trumpet blowers have succeeded in leveling the restricting walls, and the resources of the world are available. The lone textbook, especially in the social studies, has become practically obsolete. Many books, pamphlets, excursions, actual experiences, radio programs, movies, all forms of visual aids, and the out-of-school environment have become the materials utilized in the learning process. The possibilities are unlimited. Whole books have dealt with various phases of the problem. In this chapter we can only indicate some possibilities of each general type of material.

In the modern school no one learning experience is used solely to the exclusion of others. A need to be met or a problem to be solved may require a field trip. Such a field trip requires advanced preparation. Perhaps a film can be used, followed by a resource visitor who supplies reading material. A chart of the place to be visited may help, then following the visit, more reading material, another film, or pictures to clarify a point in question, can all be used. It is difficult to isolate and evaluate the worth of individual media. Each if used properly has made a contribution to the pupils' learning. As a result growth has taken place by improving attitudes, expanding understandings, and/or increasing skills. The teacher must be constantly alert to evaluate which experience or media will make the greatest contribution to the learning situation.

A child's educative experiences are more impressive and lasting when they are realistic and direct. In general this is true for the elementary child. Ten years ago the first grade teacher set a hen in class. Then after a few days one egg was opened to see what was happening inside the egg. The class rebelled at any more eggs being opened for it was killing the prospective chicks. The teacher then got a model from the hatchery showing the development of the embryo at different periods. Did our boy remember this ten years later? Upon questioning him, just now, it was clear that he did and in considerable detail. Would just reading about a hen hatching chickens have made this impression? The value of direct experi-

[1] Most of the revision of this chapter was prepared by Mrs. Pauline Walsh Olsen.

ence is stressed in the following chapters on social studies, language arts, arithmetic, science, and health.

A wide variety of resources and media are available to elementary teachers. All of the resources of the local community are just outside the school's door. The great events of the day are brought into the classrooms through the use of radio, television, films, magazines, and newspapers.

The past is made real through use of films, pictures, recordings, transcriptions, models, and stories. The chart following indicates how, through the media of community experiences, creative and socializing activities, audio-visual materials, and reading sources of many types, the walls of the classrooms are being expanded to enable children and teachers to learn together in and about the world in which we live.[2]

LEARNING RESOURCES USED IN EFFECTIVE TEACHING *

THE CHILD	LEARNING RESOURCES	THE CHILD HAS CHANGED
	Community Experiences →	
	Resource Visitors — Interviews — Field Trips — Surveys — Extended Field Studies — Camping — Service Projects — Work Experiences	
His	*Creative and Socializing Activities* →	*His*
• Background of Experience	Music-making — Dancing — Drawing — Painting — Dramatizing — Demonstrating — Constructing — Collecting — Clubs — Athletics — Debates — Student Government — Publications	• Background of Experience Reorganized and Developed
• Attitudes		• Growth in Attitudes
• Understandings and Concepts	*Audio-Visual Materials* →	• Expanded Understandings and Concepts
• Skills	Maps — Globes — Charts — Graphs — Diagrams — Radio — Recordings — Transcriptions — Flat Pictures — Slides — Filmstrips — Motion Pictures — Television — Models — Specimens — Objects	• Improved Skills
	Words →	
	Formulae — Lectures — Discussions — Books — Magazines — Newspapers — Letters — Essays — Reports	

* The classification and items in the center were adapted from Edward G. Olsen, *School and Community Programs* (New York, Copyright, 1949, by Prentice-Hall, Inc.).

[2] The authors realize that there is considerable overlapping in the major headings used in this chapter, and also that there is considerable disagreement among the "audio-visual experts" as to classifications. This is merely a convenient one.

The possibilities of these learning resources are almost limitless. Whole books have been published dealing with various fields, but in this chapter we will indicate only some of the possibilities of each general type of learning resource. References in each area will be found in the bibliography at the end of the chapter.

I. LEARNING THROUGH COMMUNITY EXPERIENCES

The community around the elementary school pupil plays an important part in his life. His contacts outside of school time with the corner grocer, the traffic policeman, the fireman, the postman, can be utilized and expanded to increase his knowledge and understanding of the value of each "community helper," as these people are so often called by primary teachers. Visits to major industries in the vicinity, or to view geographical or historical points of interest, are of special value to the upper grade student who is beginning to evaluate the contributions of his community to the state or the nation, or to the world. Interviews with a variety of resource people who can bring special talents, skills, training, or hobbies to the attention of the class will help bring about appreciation for the abilities of others. Assistance in service projects which are in keeping with his age, ability, and interest is another way in which the community can provide the elementary school student with learning experiences. School camping, for a day or longer, is rapidly being recognized as a valuable means of educating teachers as well as children—not only for the actual nature learnings that take place, or the physical activities that are encouraged, but for the many aspects of democratic behavior that are required in actual living with other people.

Through these media, democracy, which "cannot be learned by rote—but by experience," [3] can be recognized and practised as in no other type of school organization. Recent progress in this area has been great, but every community still offers many "untapped" possibilities.

Learning through these direct experiences needs careful preparation and evaluation so that the underlying purposes of the experience are apparent and fully understood by the participants. The activities should arise from class or school projects, and should fulfill a definite purpose, meet a specific need, or solve a particular problem. For example, when a group becomes interested in the study of the food we eat and how it comes to us, and realizes they do not have the answers to all their questions, is that not the time to invite the neighborhood grocer to contribute his particular knowledge through a class journey to his store? Many other people and centers of interest may be used to answer children's questions and increase their knowledge and awareness of people in the world outside the school.

[3] Educational Policies Commission, *Education for All American Children* (Washington, National Education Association, 1948), p. 119.

Specific suggestions follow for making each type of activity most meaningful and of utmost value.

Field trips. The terminology for this type of learning experience often varies with the school system and the individual teacher. Some teachers take their pupils for walks to teach observation of the surroundings. These walks are in reality field trips. Whatever the term used, field trip, lesson journey, or excursion, it is well to distinguish between the experience chosen for its distinct educational purposes and the athletic or music contest, picnic or sightseeing excursion. Most educators prefer the term "field trip" or "school journey" to clarify the thinking of both teachers and students as to the purpose of the experience.

Many aspects of community life are suitable for investigation by young children. They may be found in areas such as the following: [4]

Local History
- Names of persons, places, streets, buildings
- Memorials, statues, and relics
- Pioneer utensils, furniture, clothing
- Spots of historic interest
- Old records and discarded primitive machines

Local Geography
- Land and water forms
- Nearby bodies of water
- Climate, soil, products
- Native birds, animals, plants, trees
- Natural resources, minerals, oil, coal

Local Industries
- Manufacturing establishments
- Truck gardening
- Dairying, fruit growing, stock raising, farming
- Commerce, communication, exchange
- Services, enterprises

Local Institutions
- Museums, libraries, fairs
- Homes
- Churches
- Hospitals, clinics, dispensaries
- Educational institutions
- Press, radio, motion pictures

The People of the Community
- Workers and the work they do
- Scientists, inventors

[4] This list was compiled by the University of Minnesota Elementary Demonstration School Faculty for *Using Community Resources* (Minneapolis, Minn., University of Minnesota Press, 1918), pp. 2-3.

Some school systems, such as Los Angeles and San Diego, California; Des Moines, Iowa; and Longview and Vancouver, Washington, have issued extensive directories of school trip possibilities in their communities.

See also lists of school journeys in Harry McKown and Alvin B. Roberts, *Audio-Visual Aids to Instruction* (New York, McGraw-Hill Book Company, 1940), pp. 205-208.

Artists, musicians
Authors
People with hobbies

Local Government and its Services
Police and fire departments
Health protection, traffic regulation
Parks and playgrounds

Here are a few suggestions for organizing a class journey for the maximum educational benefits:

1. Through class discussion, decide why the trip is to be made and list the questions which are to be answered, either by direct asking or through observation. Often committees of children can be responsible for specific items or areas of information.
2. The teacher should take the journey himself, or be assured through the principal, or coördinator of such activities, that such a trip is feasible and within the ability of the group.
3. The necessary arrangements need to be made with school officials, parents (with written permission obtained for each student, particularly for a trip involving transportation), and the person in charge of the place to be visited. It is often helpful to have a guide accompany the group during a visit. At least one other adult—an interested parent, principal, or a supervisor—should accompany a class of average size.
4. Plan the route to be taken, for reasons of safety and to observe points of interest along the way. If a different street or highway can be taken for the return to school, so much the better.
5. Plan activities for the travel time. A desirable code of conduct should be discussed and agreed upon by the children and then maintained during the trip. Interest will be enhanced if each child has a highway map on which he can follow the route during a long trip. Students can be responsible for planning bus games or leading group singing to prevent boredom en route.
6. During the actual visit encourage the students to make observations and record answers to questions for later discussion. A chart or diagram is of great help in understanding a complicated industrial plant, particularly if there is much noise or the size of the group prevents all from hearing the explanations of the guide.
7. Adequate thanks should be given the hosts at the time the group leaves, and also later by letter. This provides excellent opportunities for language arts expression.
8. Carefully analyze or interpret the trip as soon as possible after the return to school. Help the children discuss the answers they have found to their questions, and honestly evaluate their learning. Trip behavior should also be discussed and evaluated at this time.
9. Often it is difficult for the entire class to see all phases of a process or plant, in which case the class can be divided into committees under a leader to see and report on a specific phase of the trip. The reports can then be presented to acquire the total picture.
10. A follow-up for each field experience should be planned so that other interests are opened to the class. From such follow-up, related and expanded learning experiences using other media will follow.[5]

[5] More details for organizing field trips will be found in Edward G. Olsen and others, *School and Community* (New York, Prentice-Hall, Inc., 1945), Chapter VIII.

Interviews and visits of resource people. These techniques of instruction are in some respects simpler to arrange than the school journey, since they may be easily managed in every community, and do not disrupt the schedule of the school. In every community, almost regardless of size, there are people with interesting hobbies, foreign backgrounds or living experiences, or occupations usual or unusual which can be shared with children. Such people are generally willing to come into the classroom to talk, answer questions, demonstrate, exhibit, or otherwise share their interests and abilities with the children. Committees from the class can be selected to interview adults in the community and then report their findings to the rest of the group.

The teacher should talk with the person to be interviewed or brought into the classroom to make clear to him the information desired and the level of the maturity of the class. The class likewise should know why the interview or the visit is taking place, and should be primed with intelligent questions. The group should be cautioned against time-wasting recitals of their own experiences during the visit of the specialist.

Such an experience can make very real the need for courtesy. It also provides fine opportunity for both oral and written language expression. A follow-up for such an interview or visit could be any one of a variety of activities, such as dramatizing the daily life of an early settler, or showing how the traffic officer performs his duties. Such learnings are reinforced if shared with another class or room.

Service projects. Many schools realize the educational value of having students take active part in many phases of community welfare. During the recent war it was evident that elementary school pupils could carry on many worthwhile services previously left to older citizens.[6] In peacetime also there is wide opportunity for even young children to learn social responsibility and reliable workmanship through community service projects.[7] Children today in the city have no chance whatever to learn certain things and have experiences which were commonplace to children fifty years ago.

Socially useful activities which provide for beginnings in leadership and the feeling of community responsibility in which the elementary school student can participate, include school and community clean-up campaigns, safety patrols, distribution of community chest information,[8]

[6] Association for Supervision and Curriculum Development, *Organizing the Elementary School for Living and Learning* (Washington, The Association, 1947), Chapter III, pp. 86-93.

[7] Description of elementary schools' service projects are found in Burton E. Davis, "A School's Junior Service Club," *National Elementary Principal,* Vol. 25, December, 1945, pp. 33-35.

See also Claude L. Williams and Gertrude C. Curtin, "The Development of Citizenship through Coöperation with Community Agencies," *Elementary Schools; The Frontline of Democracy, National Elementary Principal, Twenty-second Yearbook* (Washington, D. C., The Association, 1943), pp. 370-375.

[8] Solicitation of funds by elementary pupils is exceedingly poor practice.

urging registration of voters, and junior Red Cross activities. Community beautification through the transforming of an unsightly vacant lot into a school garden or playground area may lead to home planting and beauty. A school beautification project may become a service project for a school. Safety patrols teach many children safety habits and responsibility while protecting themselves and others from traffic accidents. Through distribution of Community Chest information and by learning to answer the questions asked by the householders on whom he calls, the student becomes familiar with the purposes and advantages of contributing to the chest. Likewise contacts to encourage registration or voting will bring keener realization of citizenship's duties, which will be carried into the student's own home and into his own later life. Children are quick to respond to activities that are socially significant.

The Junior Red Cross enables children in all grades to help the less fortunate—through producing such articles as tray favors, novelties, scrapbooks, and Christmas decorations for veterans hospitals, and by filling gift boxes for children in other lands. The exchange of scrapbooks or exhibits between school children from one section of our country and another, or with children of similar age in foreign nations, can help develop personal recognition of social understandings and responsibilities of the kind which must underlie any permanent peace.

Work experiences for elementary students are necessarily limited by age and strength, but there are a variety of ways in which younger children can learn the value and rewards of work. Some elementary schools provide names of students for merchants or householders to call when errands need to be run, handbills distributed, babies tended, lawns mowed, snow shoveled, and the like.

School camping. Outdoor experiences through camping provide ideal opportunity for practicing democratic living in a way that no school room or playground situation can offer. The values of self-reliance and coöperation, of knowledge and appreciation of nature so gained, are steadily recognized by more teachers and lay people. This is leading to increasing awareness that school camping is both enjoyable and desirable. Experiments in both year-round and part-time school camping are already well under way in several states, notably California, Michigan, New York, and Washington.[9]

Several types of camps have been developed to meet specific problems of different areas and the maturity levels of the children. Even children of primary grades can participate profitably in day camp programs. In such camps the children assemble each morning to go to the selected spot, either bringing their lunches or assisting in the preparation of food for all.[10]

[9] Helen K. Mackintosh, "Camping and Outdoor Experiences in the School Program," United States Office of Education, *Education Bulletin*, No. 4 (Washington, D. C., 1947), pp. 37-38.

[10] *Ibid.*, pp. 10-11 describes a second grade experience in day camp.

They spend the day learning to use the natural materials available in making their own toys, tools, or equipment.

Camp experiences of several days to a week or more may result from the coöperation of several teachers, usually with a camp leader or director in charge. Parents are helpful in assisting in preparations or in developing the camp sites. An excellent beginning is for each community to organize a camping committee including parents, teachers, and prospective campers.[11]

School camping can and should be considered an integral part of the school program. School and camp should be intimately related in philosophy, programs, and means of evaluation, and should be characterized by continuity in pre-planning, follow-up, and in the educational approach of the personnel.[12]

II. LEARNING THROUGH CREATIVE AND SOCIALIZING EXPERIENCES

The variety of creative and socializing activities possible in the modern elementary school results in much direct learning. As the child draws or paints, dances, sings, or acts in response to a learning situation to which he has been exposed, the teacher has excellent opportunity to observe his reactions and to discover just how much the experience has changed the child. Such learning resources as those mentioned above are widely utilized by competent teachers and are discussed in detail in Chapter 14, Creative Activities.

Construction activities. The construction activities described in the preceding chapter, in relation to the unit of work, warrant mention here since they are also creative learning resources. Much construction activity in present-day schools needs careful evaluation, since, in the minds of many teachers, activity-learning and construction have become synonymous.[13] But it must be remembered that the construction activity is a means, not an end. These suggestions may help to avoid some of the more common difficulties:

1. Construction should be carefully planned in advance.
2. Construction should be based on some research. Even a kindergarten child can make beginnings.
3. A proportionate amount of time should be devoted to the construction. If it represents planning, expression of research, opportunity to work together,

[11] For description of such a program, see Hugh B. Masters, "A Community School Camp," *Elementary School Journal*, Vol. 41, June, 1941, pp. 736-47.

[12] William Van Til, "Schools and Camping," in Association for Supervision and Curriculum Development, *Toward a New Curriculum* (Washington, The Association, 1944), Chapter 7.

. Description of school camps will be found in Edward G. Olsen, *School and Community Programs* (New York, Prentice-Hall, Inc., 1949), Chapter 8.

[13] For a description of construction activities which considered these factors, see David H. Russell and Ruby L. Hill, "Learning about Airplanes in the Third and Sixth Grades of the Same School," in *Twenty-third Yearbook*, Department of Elementary School Principals (Washington, D. C., The department, 1944), pp. 175-182.

it will take time, but there are many outcomes other than the finished product. Too long a job destroys interest.

4. Construction as a rule should be sufficiently large to allow children to play in it or work it. This gives the child a further identification with the experience and should result in increased insight. Muscular development is another factor which supports larger construction rather than small models.

5. Fairly large blocks of time are needed for construction work. With too short periods they no sooner get started than they have to clean up.

Pupil-made models to illustrate some phases of the unit are valuable, if the object cannot be made full size. Often students will develop very ingenious methods of reproducing an action or a situation which has been discussed in class, or read about in relation to the unit. The sand table, clay, soap, erector sets, large size building blocks, and similar equipment enable children to build models in their own room. These models emphasize the learnings of the children as they play with and operate the apparatus.

Socialized experiences. All of the activities of the modern elementary school are socialized to some degree. Certain activities at one time were considered extra-curricular. In today's socialized school the value of these activities is determined by the extent to which they contribute to the broad objectives of the school. These include programs, clubs, athletics, class or school newspapers, student councils, and other types of student government. They provide pupils with additional opportunities to learn democratic procedures through democratic activities.[14]

Programs. Pupil programs should grow out of the work of the class. They provide an excellent culmination for a unit of work. Assembly programs in the school auditorium are of value in developing stage presence, but room programs are proving more and more popular. Often the things which have been built for a class unit are not practical to move. Then the class invites another class or the parents in for an afternoon's program, not a planned "show-off"; just the final wind-up of the work.

The most significant features of programs for the ethical and social development of pupils were listed by over a hundred elementary principals. Their responses listed in the order of their apparent importance were: [15]

1. Original programs initiated, developed, and presented by pupils with a minimum of teacher supervision, and growing out of school and classroom activities

a. Dramatization: plays, pageants, reviews of activity units, puppet shows, and scenes; particularly those written, prepared, and directed by the children

[14] The *Twenty-second Yearbook* of the Department of Elementary School Principals, *op. cit.*, is devoted to the discussion of such democratic socializing activities. Of particular value are Chapter VI, "School Enrichment Experiences," and Chapter VII, "Student Organizations."

[15] *Ibid.*, pp. 284-285.

b. Assemblies conducted by the children; each grade in turn takes charge of the assembly according to a scheduled plan; class president or chairman presides, principal and teacher remaining in the background

2. Music: community singing, school orchestras, bands, glee clubs, rhythm bands, harmonica bands, individual school songs, and music appreciation by means of radio and phonograph records

3. Visual presentation: slides, particularly those prepared by pupils; silent and sound films; shadow graphs; chalk-talks; and picture talks for art appreciation

4. Student-council reports and discussions on school problems: safety patrols, sanitation squads, Red Cross participation, health records and school citizenship

5. "Outside" speakers and performers

The point stressed by these experienced principals is the need for programs to be developed by the children. This emphasis on creative work is an outgrowth of the changing philosophy of the elementary school. The second point is that programs should develop from school and classroom activities. A more comprehensive discussion of the whole area of creative work is given in Chapter 14.

Clubs. "Whenever two Americans meet, they organize a club." In some places this practice is being assiduously cultivated, and a nice crop of clubs have sprung up. When they are so thick, there may be a doubt as to how many are weeds and how many really worth harvesting.[16]

Clubs in the elementary school can be considered under three types—the room club, the clubs within the school, the clubs associated with outside groups. By the room club is meant the organization of children in the room to conduct the business of the class. This organization is a device for placing responsibility on the members of the class and minimizing the direction of the teacher. As such it provides one more occasion for pupil responsibility. When the class has many problems of its own, as in the newer type of school, it is usually effective. If used in the traditional schools, it is likely to be a failure, for the work the rest of the day is all teacher-directed, and the children do not sense problems of the group. Room clubs are no panacea for all educational ills, but used intelligently, should be helpful.

Clubs within the school usually develop from common interests of children. These interests form a common bond for their activities. A common interest is not a sufficient reason, however, for the formulation of a new club. To read some accounts it would seem that every time the children became interested in something a club was organized. An example of this follows: [17]

The animal club was organized as a result of a picture of an animal brought into a class of younger children. These children talked about the animal's home,

[18] For an account of an extreme number of clubs in a school see "Every Child a Club Member," in *Fourteenth Yearbook* of the Department of Elementary School Principals, pp. 397-401.

[17] *Ibid.*, pp. 398-399.

food, and habits, and told of their own experiences with other animals. From such a small beginning as this, the children who are new in club work learn the purpose of a club, the duties of its officers, and the joy of working together.

The account represents a fair introduction into a unit of work but a dubious reason to force upon younger children "the duties of its officers."

Until they are nine or ten, children have little interest in group membership. However, the school does need to make some provision for that age to have a satisfactory outlet. Too much of the child's energy is spent in non-educational radio-club activities sponsored by some commercial concern to boost its sales.

Some suggestions for club activities for the intermediate grades might include dramatics, science, music, art, sewing, stamp collecting, reading, current events, first-aid, gardening, Junior Red Cross.[18]

Clubs associated with outside groups are usually limited to the intermediate grades. The Gra-Y program of the Y.M.C.A. and the Cub program of the Boy Scouts are among the best-known of these programs for boys. Later these lead into Hi-Y and Scout work. The girls may join the Brownies and Blue Birds, and later go into Girl Scouts or Camp Fire Girls, or similar organizations. The Junior Red Cross provides both boys and girls with a wider outlook and direct contact with children abroad as well as in other sections of our own country.

In many cases the leadership for these clubs will come from without the school, but the school should coöperate in every way it can. Often it is much better to have the leadership come from an outsider rather than a teacher. To expect teachers to furnish all the leadership for children in a community is an imposition. Being a Sunday-school teacher, a Boy Scout master, and a regular teacher is too much of the same thing for any one to render efficient service.

School newspapers. The main function of the school newspaper is to provide children with an opportunity for creative expression.

One of the most comprehensive studies of elementary-school newspapers appears in the *Fourteenth Yearbook* of the Department of Elementary School Principals. The findings of this were reproduced in the form of the typical school newspaper.[19]

A most helpful list of suggestions for producing a school newspaper was prepared by Thomas. Many of the pitfalls can easily be avoided by following these suggestions:[20]

1. Every elementary school should provide desirable socializing experiences by publication of a newspaper of some type.

[18] These clubs and possible activities for each are described by Hannah M. Lindahl, "Club Activities in the Intermediate Grades," in the *Twenty-Third Yearbook* of the Department of Elementary School Principals, *op. cit.*, pp. 116-121.

[19] John S. Thomas, "The Elementary School Newspaper," *Fourteenth Yearbook* of the Department of Elementary School Principals, pp. 473-502.

[20] *Ibid.*, pp. 499-500.

2. The most effective newspapers are organized and the material is prepared under the supervision of some member of the faculty, or under the guidance of a group of teachers called the teachers' staff.

3. The preparation of material, production, and distribution of the newspaper, particularly of the mimeographed paper, may well be a pupil enterprise.

4. The content of the newspaper should be as largely the actual work of children in the school as possible, with articles by principal and teachers using only a small part of the space.

5. The pupil staff should be carefully selected and should include those children especially qualified for such work.

6. The content of the newspaper ought to represent the whole school in the activities described, the material selected, and the interest aroused.

7. The newspaper might help to integrate the otherwise unrelated activities of the school; it may serve frequently as a unifying agency for the school and the school-community.

8. There is considerable value in selecting a central topic for each issue of the paper around which most of the content may be planned.

9. The subscription price of the newspaper should be as low as possible so as to insure widespread distribution.

10. It is desirable that the elementary-school newspaper not be produced for profit.

11. A minimum of paid advertising is desirable. If the subscription price can be kept to one or two cents per copy without the use of advertisements, it is wise to eliminate advertisements entirely.

12. The newspaper should be read by every child in the school and should go into the homes of all the children.

13. The newspaper may well be issued as frequently as possible, up to a frequency of ten times each year.

14. Plan the newspaper to provide a distinct community influence.

15. The life of the school may be interpreted through the newspaper in news articles, illustrations, original poetry and stories, and general descriptions of practices.

16. An attractive style of publication is important in either printed or mimeographed form.

17. The newspaper may well contain a number of illustrations or drawings.

18. Every copy of the newspaper should have the name of the paper, the date of issue, the name of the school, the volume and issue number, and the price on the front page.

19. Names of the children and teachers on the staff should appear in each issue.

20. It is undesirable for the paper to be too large in size.

21. Each issue should contain four or more pages, but should not be so large as to necessitate a curtailment in the number of issues each year.

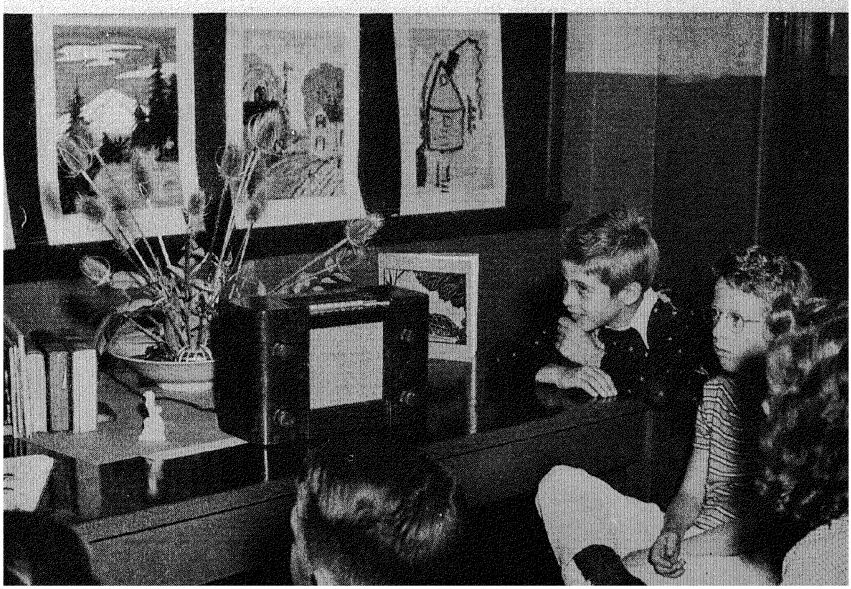
22. The content must be perfectly legible, even though the newspaper is mimeographed.

23. The names of the contributors should be attached to all articles.

Most of the papers are mimeographed, which seems to be the best method of reproduction for use in the elementary school. It means that students can take part in more of the processes of reproduction, the

The far and near, the past and the present

The President speaks



Advance planning

Reality through the museum

paper can contain more illustrations, it is cheaper, and in most cases it can be distributed free.[21]

The newspaper at the elementary level needn't be a model of the commercial journal. The test of the successful school paper should be its representativeness of the children and their curriculum—not how closely it approximates professional journalism. Instead of a few reporters selected for their competence in writing skills, the writing of the "news" should be done by children of all classes, clubs or activities. The school newspaper should be something more than an outlet for a talented group of children.

III. LEARNING THROUGH AUDIO-VISUAL EXPERIENCES

Another large area of learning resources is commonly termed "audio-visual." While the hands of time will not turn back, films can transport a class to a distant time or place. While you cannot take your class to hear the President speak, you can bring his voice into the classroom. Even tape or wire recorders allow the radio program of the evening to be captured and brought into the classroom the next day. Each medium, where properly used, can make a unique contribution to learning. The wealth of such resources includes museum exhibits, specimens, objects, models, pictures, slides, films, maps and globes, graphs, charts, the radio, transcriptions, wire or tape recordings, and, increasingly, television.

Objects, specimens and models. Some of the more easily obtained groups of audio-visual aids are the objects, specimens, or models which children eagerly bring to school from home, or which can be purchased from commercial supply houses. Exhibits for display and discussion can provide motivation for valuable language experience, since the child is anxious to tell about what he has brought or made. The collecting, labeling, and arranging of the exhibit is often the most valuable part of the activity, although displays which have been made in previous years can be used to inspire other classes. Some of the better exhibits can form the nucleus of a school museum in the room, building, or school system. Interested adults will often contribute items or collections to a school museum.

Materials for school museums could well be selected to further develop the common units, and arranged to tell a story for the children. The diorama type of exhibit is one of the most valuable, both for the school room and for the school museum.[22] The school museum should be a resource center for children.

[21] See also Margaret Barnett, "Our Class Newspaper," in *Twenty-third Yearbook* of the Department of Elementary School Principals, *op. cit.*, pp. 23-27; and R. H. Lane, "Issuing the School Newspaper," *The Teacher in the Modern Elementary School* (Boston, Houghton Mifflin Company, 1911), pp. 247-251.

[22] J. W. Jenkins, "Let's Make a Diorama," *See and Hear*, Vol. 4, November, 1948, pp. 36-37.

Public museums often loan exhibits to schools. Some museums provide study rooms and guides for a field trip to the museum when an exhibit cannot be removed.[23]

Pictures. Pictured materials of many kinds are used by good teachers to make vicarious experiences meaningful to children. Using pictures as part of the context is done in practically all children's books, and some companies are publishing picture materials to accompany and supplement the stories in their texts. The large cardboard figures used in reading-readiness programs pointed the way, and more recently filmstrips have been made to enrich the story in the book and to strengthen the learning of new words.[24]

Because pictures make such a vivid impression, they need to be carefully selected. Pictures giving distorted, partial, or one-sided concepts of processes, peoples, and conditions may result in more damage than any amount of reading might do. Accurate concepts should be the result of the use of picture materials.

The picture or series of pictures needs to be chosen for a distinct purpose. This is as true of pictures for the bulletin board, or for slide projection, as it is for motion pictures. Sufficient preparation for viewing the picture and adequate explanation to accompany it are also necessary, since we find in a picture only what our past experience leads us to see. A class should be as carefully prepared for what they will be shown in pictures as they are for what they are to see on a field trip or in a museum.

Pictures have their greatest value when used to show contrast, to make comparisons, or bring out continuity. Contrast and comparisons can be shown in a single print or in a series. Several series of flat pictures which show continuity, as in a manufacturing process, are now commercially available.[25]

Education departments or public relations divisions of large business organizations publish such series of pictures for advertising purposes. These are often valuable for teaching, although caution must be exercised to eliminate undesirable advertising or sensationalism.

Poor pictures can cause confusion just as good pictures can clarify. If pictures are to serve their optimum purpose, they should be selected with

[23] See also Edgar Dale, *Audio-Visual Methods in Teaching* (New York, Dryden Press, 1946), Chapter 6, "Exhibits and Museums."

Harry C. McKown and Alvin B. Roberts, *op. cit.*, pp. 61-66.

Hoban, Hoban, and Zisman, *Visualizing the Curriculum* (New York, Dryden Press, 1937), Chapter 3, "Objects and Models, The School Museum."

[24] *Educational Screen*, December, 1947, presents a symposium on correlation of filmstrips and textbooks.

See also, Eric Bender, "Textfilms, the Textbook's New Partner," *See and Hear*, Vol. 4, December, 1948, pp. 21-34.

[25] A good series published for teachers is the Picture Reference Library of the Informative Classroom Picture Publishers, Grand Rapids 2, Michigan. Other picture series will be found listed in the Educators' Guide to Curriculum Materials. (See Bibliography.)

certain criteria in mind. Quality rather than quantity should be the first criterion. A few other guides might well be: [26]

1. A good teaching picture is clear and definite; it presents vividly that which it is portraying.
2. It is authentic and represents the situation as one might see it if one could visit the scene personally.
3. A picture which purports to show current conditions should be up to date.
4. Simplicity of composition is essential, especially for young children. A complex picture often distracts attention and scatters interest instead of focusing it on the main points.
5. Some known measure of size, such as a man, shown in the picture with an unfamiliar object, aids the learner in securing the correct mental picture of the new object.
6. A good picture is one showing man performing an activity in his natural environmental background. The dramatic quality of the suggested action often stimulates the children's imagination very effectively.
7. Color, when *truthfully* used for purposes of identification, enhances the value of most pictures; but misuse of color often leads to erroneous ideas. A poorly colored picture should not be used. A good quality black-and-white picture is far superior.
8. The picture should be large enough to be clearly visible.

To use pictures to the best advantage, they must be quickly accessible. Many teachers collect their own pictures and keep them in a file in the classroom, classified under suitable headings such as the title of units, ready for use at a moment's notice. A legal size file is preferable because of the varying sizes of illustrative materials from some of the current picture magazines, such as *Life*. The *National Geographic Magazine* is another source of excellent pictures.

A picture file can be made from a crate or box. The file needs to be kept where the children can use it as well as the teacher. They will be very anxious to help build a picture collection for the room, and can be counted on to supply a wealth of material. Evaluation and revision of such materials must be constant. Teachers, too, need a change from the same pictures year after year. In addition to the room file, a picture collection in the building can supply those materials which are more expensive, or less frequently used. The disadvantage of a central file may be offset by the advantages of teachers working together on this project. Almost any teacher has pictures in her personal collection which another teacher could use with profit. Working together on this problem may lead to other coöperative activities in curriculum planning for children. Some school systems build up picture departments, although having flat pictures in a central place removed from the building is in some respects a disadvantage. In some cities such picture departments collect framed

[26] Ella C. Clark, "The Use of Still Pictures," *How to Teach with Pictures* (Grand Rapids, Michigan: Informative Classroom Picture Publishers, 1947), pp. 44-45.
See also Leila Trolinger, "The Evaluation of Still Pictures for Educational Use," *Educational Screen*, Vol. 18, March-May, 1939, pp. 81-83, 116-117, 157-159.

reproductions of art prints of great masters or contemporary artists. These can be circulated throughout the schools of the system and add much to the children's knowledge and appreciation.

Pictorial materials should be carefully and artistically mounted. The attractiveness of the picture, photograph, or silhouette is increased; it becomes more usable, as it is more easily handled, hung, and filed. Several smaller items can often be mounted together on the same page to show comparison, contrasts, or continuity.

Slides. The growing popularity of photography enables many teachers to make their own picture materials for units which they teach. Interesting personal experiences or summer travel pictures have an added interest in the eyes of the pupils. The miniature camera and the 2x2 slide are making possible the production of picture material closely adaptable to local situations and needs. If the teacher is not interested in photography, there is often someone in the community who will coöperate to produce the desired slides. Frequently high school photography classes will produce slides or pictures that are definitely needed in the elementary school.

The slide is a very flexible teaching medium. In addition to the miniature slide mentioned above, the large 3¼" x 4" slide, commonly called the lantern slide, offers many possibilities. Many sets of slides are commercially available, but the greatest value in the lantern slide is in the handmade slide. Teachers or pupils can produce their own slides. A variety of media can be used. Ink, special paints, or colored pencils, even ordinary lead pencils, can be used on plain or etched glass, or on celluloid.[27] If a permanent slide is not desired, the glass can be cleaned and re-used.

Stories, review lessons, tests, words for songs, etc., can be typed on cellophane and projected. Silhouettes, placed between two pieces of glass, are often valuable for motivating story telling in the primary grades. Enlarged maps can be made by projecting a small map onto a large piece of paper or a blackboard. The ingenious teacher will discover many ways to use the handmade slides, and the lantern slide projector.

Slides have two chief advantages: they can be arranged in any desired order, and they can be made by the teachers or the children. Filmstrips, cheaper to buy than slides, are less flexible since the order of the frames cannot be altered. In spite of general practice there is no rule that all of a filmstrip must be shown at one time, or that the individual pictures must be projected in the order that they are printed in the film strip. Some filmstrips are being made to correlate directly with books and

[27] One of the best detailed descriptions of how to make lantern slides is to be found in Mary Esther Brooks, "Lantern Slides and How to Use Them," in *See and Hear,* Vol. 2, May, 1946, pp. 70-79.

The Keystone View Company publishes, free, a comprehensive treatment of slide-making by G. E. Hamilton, "How to Make Handmade Lantern Slides" (Meadville, Pa., Keystone View Company, 1940).

motion pictures, providing review questions and tests on material presented.

Projecting pictures. The opaque projector can project any flat object which will fit into the projector. By some experts it is considered the most important projector for a teacher. The imaginative teacher will find many uses, such as objects, textiles, written exercises or stories of pupils, penmanship samples, drawings of children as well as pictures, diagrams from books, or reading material. One teacher had the projector set up in the cloak room where individuals or committees could use it.

Several types of micro-projectors are also made which enable children to view on the screen specimens ordinarily seen only through a microscope. This procedure enables all the pupils to concentrate attention on the same phenomenon at the same time.

The stereograph is the picture produced by two cameras and merged into a single picture by the stereoscope. This produces the three-dimensional effect with an increase in the illusion of reality. It is the same old stereoscope that used to grace grandmother's parlor table, that special treat when we had been good. It is returning to popularity as an individual tool of instruction. The equipment is still much the same. The hand stereoscope is still most popular, but there is available a telebinocular [28] which rests on an adjustable base and lights the picture.

A modernized version of the stereoscope is the Viewmaster,[29] a less expensive individual viewer, for which excellent scenic views have been produced. A series of fairy stories that young children enjoy is also available for the Viewmaster.

A flannelgraph provides opportunity for picture building and story telling. A large mounted piece of flannel, appropriately colored, forms the background on which can be placed the pictures of either figures or objects needed in the story. A small piece of flannel or sandpaper pasted on the back of each picture will hold it in place on the background during the telling of the story; then each can be removed for a sequel or another story.[30]

The criteria for the use and selection of pictures apply equally well to all of the types discussed in this section. Usually the projected material is free from many of the difficulties of flat pictures, but the teacher still has the responsibility for selecting the ones that are applicable to the unit of work.

The motion picture. The motion picture has become a prominent force in educating all people, both in school and out. The film challenges the teacher to make each school experience of the utmost value. Entertainment films have so conditioned children that careful preparation for a

[28] Manufactured by the Keystone View Company.

[29] Manufactured by Sawyer's, Incorporated, Portland, Oregon.

[30] A description of how to make and use a flannelgraph is found in Alice Cook Fuller, "The Flannelgraph," *Grade Teacher,* Vol. 64, April, 1947, pp. 16 ff.

film showing is essential if maximum learning is to take place. Using the word "film" rather than "movie" when discussing or planning the lesson may help to give the children the proper mind-set.

Nearly all films produced today are sound films; for research has shown they have greater interest for pupils.[31] But there are opportunities for much learning from silent films, where sound is not essential to the subject or the action. Sometimes the teacher will not wish to use the sound track on a film, so that the picture can be used with younger children than the vocabulary of the film would otherwise allow. Likewise, when the film is shown for the second or third time, as is often desirable when the film is used to introduce a subject, and then to review pertinent information, the sound can be turned off, and the pupil can tell what is being shown or done.

The vast power of the film offers unusual possibilities for developing basic historical, scientific, and social concepts. Children's primary interest in motion pictures has been found, through research, to be concerned with how other people live, work, and dress; what their social customs are; and how children of foreign countries work, play, and go to school.[32] While these are of primary interest, the opportunities for learning in other areas should not be neglected. Excellent films in science are of great value.

The values of films in education have been listed and discussed in detail by Dale. He points out that films can: [33]

1. Present certain meanings involving motion.
2. Compel attention.
3. Help clarify the time factor in any operation or series of events.
4. Bring the past and the distant to the classroom.
5. Enlarge or reduce the actual size of objects.
6. Present a process that cannot be seen by the human eye—even by microscope or telescope.
7. Provide an easily reproduced record of an event.
8. Reach a mass audience at a low average cost per person.
9. Build a common denominator of experience.
10. Offer a satisfying aesthetic experience.
11. Give an understanding of relationships of things, ideas, and events.

Films are not "cure-alls." Certain cautions must be observed in their use.[34]

1. Effectiveness—other experiences may be better for this.
2. Expense—other experiences may be as good and much cheaper.
3. Wrong time-notions—telescoping time, events following may be erroneously related.

[31] Walter A. Wittich and John Guy Fowlkes, *Audio-Visual Paths to Learning* (New York, Harper and Brothers, 1946), p. 16.

[32] *Ibid.*, p. 100.

[33] Edgar Dale, *Audio-Visual Methods in Teaching* (New York, Dryden Press, 1946), p. 191.

[34] Adapted from *Ibid.*, pp. 191-195.

4. Wrong size-notions—unless related to familiar objects.
5. Distorted impressions or conclusions—may not be representative sample, associations may be in error.
6. Administrative difficulties—availability of films, projection equipment, darkening of room.
7. Supplementary use—sometimes substituted for demonstrations or direct experience when either might be available.
8. Pupil comprehension—vocabulary, concept too difficult or necessary pupil background for understanding is lacking.
9. Group vs. individual use—primarily a group device though it can be used for individual study.
10. Film vs. teacher—not a substitute for teacher, gives her new responsibilities.

Teaching films are numerous. Educators are usually employed as advisers in the production of these films, so the quality of the learning experience is usually good. Some companies are producing "text" films to go with certain books. These films are the same as other teaching films, designed to develop an important understanding or attitude for children of a given age. The "teaming" of film and book should not influence the use or purchase of either. Each should be judged on its merits.

Teaching guides frequently accompany teaching films and supply the teacher with background material, suggestions for following-up activities, and additional reading. Some advertising films for industrial corporations have much value in illustrating technical processes. Such films should be most carefully previewed and evaluated to be sure that no objectionable advertising matter is included. Many excellent industrial films without advertising are available. The best guides to instructional films are the *Educational Film Guide,*[35] One Thousand and One,[36] and Educator's Guide to Free Films.[37] Some of the best Hollywood films have been cut to suitable length, and are available for school use at minimum cost through Teaching Films Custodians.[38] Many film libraries have been developed in the state departments of education, state universities and teachers' colleges, and museums from which schools can rent films. Catalogues are available from these libraries. For instance, in the state of Washington film libraries exist at the State College of Washington, the Central Washington College of Education, in some counties such as King and Spokane, and in some cities such as Bremerton, Seattle, Spokane, and Tacoma.

The amateur photographer in the community may make a unique contribution. It is possible for cities to develop films showing certain community resources or local industrial processes which would either substitute for or enrich excursions. The production of a film to show school activities is another valuable device.

35 H. W. Wilson Company, New York.
36 Educational Screen, Inc., Chicago.
37 Educator's Progress Service, Randolph, Wisconsin.
38 New York.

Suggestions for use. Films have been greatly misused. One cause is the necessity for booking the film in advance and without a preview by the teacher. Often she must use it when it arrives whether or not it is related to what she is doing. Some school systems, which are too small to have their own film libraries, book a given film for use during a given week. Thus it is a fortunate occurrence if the film happens to deal with the unit in progress. These suggestions include some of the most important points which have been made in relation to the use of films:

1. The teacher must preview the film.
2. A film can be projected in whole or in part. Usually more than one projection is of value.
3. The time of showing depends upon the purpose. Some are most appropriate to use as an approach, some during the research period, some as a summary.
4. Films generally can be classified as "(1) those demonstrating a process, (2) demonstrating a skill, (3) dramatizing some event, (4) explaining some industrial product, (5) having emotional emphasis, (6) documenting some social situation, (7) primarily furnishing background." The type of film should be carefully selected in relation to the objective which the teacher wishes to realize.[39]
5. Films should be shown in the classroom whenever the need for the information in the film is felt, so that the class accepts the film as a regular part of the class work.
6. The teacher must "set the stage" for the film showing. The major points or questions which the film can answer should be raised before the showing. We told the gunnery officer if he was to show his men a film on the 20 mm. to take them out and fire the guns first.
7. "Take it easy." Show only one film at a time. Two or three films will only confuse the children. What if you do have to set up your projection equipment again?
8. "Follow through." The observations of the pupils must be checked through discussion, questions, or written tests. Often the misconceptions become apparent and can be corrected.
9. Be sure the equipment is set up, and tested, and ready to run. This includes placement of screen high enough, focusing before the class arrives, placing the projector so the picture fills the screen (usually), speaker near the screen and at least waist high, film threaded, room ready to be darkened.[40]

The principal advantage offered by all projected material is that the attention of all the children can be focused simultaneously upon a single object. The main disadvantage is the expense of purchasing the original equipment and materials, and providing suitable rooms for use. In addition to projection equipment, screens, which add much to the brilliance and clarity of the picture, need to be purchased. Experiments are being

[39] Charles F. Hoban, Charles F. Hoban, Jr., and Samuel B. Zisman, *Visualizing the Curriculum* (New York, The Dryden Press, 1937), p. 121.

[40] Exceedingly helpful and a necessity for every school with projection equipment is Amo de Bernardis, *The Audio-Visual Projectionist's Handbook* (Chicago, 812 North Dearborn Street, 1948 edition).

See also Dale, *op. cit.*, pp. 472-487.

conducted with daylight screens to eliminate the expense of darkening each classroom, since it is accepted that teaching with projected material is most effective in the classroom rather than in an auditorium or "visual aids" room.

Charts and graphs. Charts, graphs, and cartoons are all abstract representations in comparison with the other types of visual aids discussed in the chapter. Since they are abstractions, it must be remembered that pupils must be taught to interpret them, and on the elementary level, therefore, they must be simple.

The pictorial chart has many possibilities as instructional material on the elementary level. In this type of chart a figure represents so many units; then comparisons are made by duplicating the number of figures representing approximately the total units. Children by using simple line drawings can use them to make graphic representation.

There are numerous cautions to be observed in the construction of graphs and many advantages and disadvantages among the various types. These can be found in other discussions.[41]

Maps and globes. Map work is usually formally introduced in the fourth grade, but actually it is started as low as the first grade. When a class makes a model of their school or the near-by streets, they have made a beginning in map work. To a small extent the concept of scale has begun to take on meaning. The idea that smaller things can stand for larger things, which is the foundation of understanding maps, has been well introduced. From this concept the ability to read, understand, and utilize maps develops by a process of increasing differentiations.

Maps serve many valuable purposes in helping pupils to understand a number of phenomena in their relation to social studies. It helps to reduce the scale of areas and distances so that what is otherwise intangible becomes meaningful. This brings abstract concepts of size, distance, and direction into the region of reality. Specifically, maps symbolize relative and exact position, area, extent, and distance; human or natural relationships; elevation and slope of land and patterns of natural or cultural items. Before this understanding can function effectively, the child must know how to read maps. Investigations have shown that map-reading is usually poorly taught, but that when it is well taught, the child can come to understand how to read and use maps with meaning and facility.[42]

Some suggestions beneficial in teaching children to read maps follow: [43]

1. Promote readiness for understanding the globe and maps, through first-hand observation of basic surface features, vegetation types, and bodies of water, or through pictures of such map features.

[41] See Dale, McKown and Roberts in the bibliography at the end of the chapter.

[42] See in the National Society for the Study of Education, *The Teaching of Geography, Thirty-Second Yearbook* (Bloomington, Illinois, Public School Publishing Company, 1933), Ch. XXIX. Studies by G. F. Howe and Mary T. Thorp.

[43] Gertrude Whipple and Preston E. James, "Instructing Pupils in Map Reading," *Social Education*, Vol. 11, May, 1917, pp. 205-208.

2. Accustom children to the appearance of the globe as viewed from various positions, thus providing them with reference points.

3. Develop the concept of what a map is through making many simple maps, such as diagrams of streets in the neighborhood, or floor plans of buildings, and through comparison of aerial views and ground photographs of the same place.

4. Lead gradually into the meaning of standard symbols found on all maps, with many examples of each.

5. Teach the measurement of latitude, through broad distinction in grades four and five, and through degrees in grade six or seven.

6. Teach the measurement of longitude at least a year later than latitude, and the time bands.

7. Lead children to use maps of all kinds frequently, so they have much practice in the skills learned.

Many suggestions for the selection and use of maps were presented in the yearbook on *The Teaching of Geography*. Some of the most usable ones for teachers are reproduced here: [44]

1. Wall maps are primarily for class use and should have important details clear from a distance of twenty-five feet. They should be judged in relation to the use to be made by the child.

2. General purpose maps must not be burdened with details that might be better shown on special-purpose maps, but should be supplemented by such special-purpose maps.

3. No flat map can give an accurate representation, so the teacher should be familiar with the advantages and disadvantages of each type of projection.

4. The "physical-political" map has the advantage over the political map in presenting and making apparent many relationships.

5. The methods of presenting relief on maps are (1) hachures, (2) hill-shading, (3) contours, (4) layer of hypsometric coloring, (5) all or some of these four in combination. Much research needs to be done before the real difficulties of children are known.

6. Maps should be graded according to the maturity of the children who are to use them. Reading material has been adapted for the fourth-grade child, and maps must also be adapted if he is to understand them.

7. The committee recommends the use of many more types of maps than are now commonly found in the classrooms, especially base maps, blackboard outlines, and unlettered maps.

8. More large-scale maps of small areas, especially the more important or critical areas are needed.

9. Maps should be selected on which all lines, such as coasts, rivers, and boundaries are shown plainly. The legends must be legible. Names should not be printed on other symbols. The practice of making the size of the type proportional to the population of the city is stated as being unsound.

10. No recommendation is made as to whether the native spelling or the English form should be used. The conflict is between accepted authority and current practice as found in newspapers and periodicals.

11. Globes for use in the school-room should not be less than sixteen inches in diameter.

[44] Adapted from *op. cit.*, Ch. XXV by Albert G. Eldridge, Alfred W. Abrams, William Jansen, and Clara M. Shryock. Quoted by permission of the National Society for the Study of Education.

12. Both maps and globes should carry the name of the author, publisher and the date.[45]

13. Only the important details should be shown on the map. It should not be cluttered up with a lot of unimportant detail. This may even mean that in some cases the name of the town in which the teaching is being done is omitted. (This in all probability should be considered as a recommendation for the map.)

Each of the standard map companies has certain unique maps. It is well for the teacher or committee to consider first what services they wish the maps to perform and then from the offerings select those maps which most clearly meet their needs. Too often the process is reversed; the map is selected, then they try to find out what use can be made of it.

Duplicating devices. This section would not be complete without some discussions of mechanical aids for reproduction. There are stencil duplicators, automatic and hand-operated; the typewriter with large primer type; machines using a master sheet with the ability to reproduce any kind of copy; the hand printing set; master copy ditto maps on which any markings can be made, then reproduced; the stamp ink pad for making ditto masters with hand stamping sets; photostatic processes for more permanent bulletins; multilith duplicators which can duplicate photographs as well as print or drawings. The models of the duplicating machines range from small, reasonably-priced hand-operated machines to expensive automatic models.

The radio. Radio has dramatically extended the walls of the schoolroom to encompass the world. Vital learnings of a most effective type are often available at only the turn of a dial. The same experience reaches the youngsters in a remote one-room school as easily as it does the pupils in a large city.

The teacher must be conscious of the fact that children in all grades are listening to radio programs a surprising amount of time each day. Research through interviews shows that children in the elementary grades spend approximately three hours daily listening to the radio.[46] They prefer listening to many play activities. Overstimulation is only one of the outcomes, especially in the case of young children.

Teachers can find out to what programs children are listening. A discussion of radio plots and characters which would be directed toward overcoming fears and anxieties of children would be a legitimate function of the school. Whether in first grade or in sixth grade, such presentations would more vitally affect the life of the child than many of the regular "lessons." It provides another opportunity to work with the personal problems of youngsters.

[45] For further discussions of maps see Hoban, Hoban, and Zisman, *op. cit.*, Ch. VI, and Zoe Thralls and Edwin H. Reeder, *Geography in the Elementary School* (Chicago, Rand McNally & Company, 1931).

[46] Roy D. Willey and Helen Ann Young, *Radio in the Elementary School* (Boston, D. C. Heath & Company, 1948), p. 10.

Other possibilities are present in the intermediate grades. The claims of radio advertisers can be considered, and a healthy skepticism developed. Both misrepresentation and overthrilling drama can be analyzed by the elementary pupil. Listening clubs can be organized for out-of-school listening, their purpose being to report to the class broadcasts of interest and evaluate them with class-developed criteria.

A supplementary learning experience. Radio as a supplementary learning experience is most valuable. Certainly radio can enrich the pupil's work by presenting a parade of personalities, by vivifying historic and current events through dramatic portrayal, by transporting him by magic carpet to a front seat in the music hall, to a place beside the President, to lands far and foreign. To plan, write, and broadcast a program or series of programs is a very vital experience for an elementary school child.

The greatest problems in radio education are synchronization of the time of the broadcast in the school day, adjustment of the radio programs to the curriculum, the inability of some teachers to effectively utilize the material, and the limitations of one-way communication.[47]

To be effective, radio education needs a resourceful and imaginative teacher. The choice of a program which will supplement other class work, enrich and stimulate instruction is most important. With older children, a committee can have some responsibility in suggesting possible programs. A number of state departments of education and large city school systems produce programs directly planned for school use. There are also many excellent programs not planned specifically for schools, but contributing much to a child's total development. News broadcasts, speeches of prominent persons, re-broadcasts from foreign countries, special-day programs, book reviews, health and safety talks, science programs, animal stories, music stories of great variety, can be used in the elementary school to add to the curriculum.[48] Some commercial broadcasts which do not have any advertising, or so little as to be acceptable for school listening, are excellent.

Radio thus brings two new opportunities and responsibilities to the elementary school: out-of-school and in-school listening. The need for aiding the child in interpreting his out-of-school listening experiences is only too apparent. This is the same problem that the commercial movies present. Yet the school has done far too little with an interpretation of either the seeing or listening experiences. The second responsibility is in profitably utilizing the extension of the classroom to include experiences of world-wide scope. To be effective in this extension the teacher must be constantly alert to the day-by-day opportunities.

Teachers' manuals are prepared by most of the stations producing pro-

[47] *Ibid.*, p. 27.

[48] Standard School Broadcasts (Pacific Coast), Westinghouse Science Programs, and "Let's Pretend" are some excellent programs for in-school and out-of-school listening.

grams for school use. These vary from the single sheet, which gives general information about the program, to a more elaborate form, which often includes art correlations, musical themes, suggestions for class projects, some of the script (so the teacher can judge vocabulary difficulties), and reading lists. Some of these programs also have lesson leaflets for the pupil which contain pictures, diagrams, charts, outlines, and/or questions on the broadcast.

Classroom radio technique, like any good teaching procedure, varies with the lesson and the class. Some preparation or introduction is necessary for every radio lesson. Tested approaches include discussing what is expected from the title of the program, viewing maps or pictures, training in the vocabulary indicated, preparing for listener participation in music, dancing, or science experiments—some mental or physical activity to help the pupils "live" in the broadcast itself. Note-taking by elementary pupils during the broadcast is not beneficial[49] but listening for something definite is of help in teaching good listening habits.

The pupils will be attentive and interested during the actual broadcast if the preparation has been adequate, and if physical circumstances such as volume of radio-program, ventilation, and seating arrangement, have been well arranged. After the program is over, a moment or two of silence helps pupils and teacher alike to think about what has been heard, and to integrate the experience of the broadcast into their own pattern of thinking and behaving. Two types of follow-up activities are usual. The immediate follow-up consists of brief discussion or recall of the parts of the program that most interested the pupils, some comparison with other broadcasts which can lead to discrimination between good and poor programs, or some plan for future use of ideas presented. The general follow-up, which may come at a later time or day, often includes reading, research, experiments suggested by the broadcast, reports, interviews, conferences, or some creative activity such as art work, writing similar scripts, or dramatizations.[50]

Experimentation on the best methods of listening is needed. In homes children listen with "one ear" and carry out other activities. Some teachers are experimenting by having the children participate in quiet activities such as drawing or mounting pictures while listening.[51]

It must be captured. One difficulty in bringing the radio program to the classroom is that the time of listening is inflexible. A program is on the air at a given time and, if missed, can never be recaptured unless it

[49] Willey and Young, *op. cit.*, p. 37.

[50] For descriptions of suggested lessons using radio programs see Association for Childhood Education, "Using Audio-Visual Materials with Children" (Washington, The Association, 1917), pp. 22-25.

For helpful material for parents see Josette Frank, *Comics, Radio, Movies and Children,* Public Affairs Pamphlet, No. 148 (New York, Public Affairs Committee, 1949), 32 pp.

[51] *Ibid.*, p. 19.

is "caught" on a tape or wire recorder. This, of course, is not the difficulty in the progressive school that it is in the traditional school. There is no feeling of guilt in the modern school when the class listens to a radio program during the time that is usually given to arithmetic. Arithmetic is taught at some other time, that day or the next. When the daily program or the administrative schedule of a school becomes a hindrance to learning, it is time to discard it and try something else.

The most effective use of radio requires frequent opportunity for individuals or small groups to listen to a program. It is no longer considered necessary that every pupil read the same book, nor should it be considered necessary that every pupil hear the same program.[52]

Transcriptions and other auditory resources. Perhaps one of the best ways to utilize radio programs is through transcriptions, which can be used precisely at the time they are needed in the classroom. Transcriptions are recordings made at 33⅓ revolutions per minute as contrasted to 78 revolutions per minute of the usual phonograph record, and they permit continuous reproduction for fifteen minutes on one side of a single disc. Long-playing records will permit up to forty-five minutes of recorded material to be heard without mechanical interruption.

A slow speed turntable is necessary to play transcriptions and long-playing records, but satisfactory equipment is not expensive. Some record players are made with dual or triple speed turntables so all types of recordings can be used on one piece of equipment. Light-weight pick-up arms and large speakers are musts. Many school systems are developing libraries of transcriptions and records, in much the same manner as film libraries have been developed. Schools may also purchase recording equipment and make their own transcriptions by taking the programs directly off the air.

Phonograph records and transcriptions for many fields of study are becoming available. For many years, recordings were used only in music education, but now areas such as social science and literature can have the advantage of dramatizations far beyond what a book can offer.[53] Stories based on well known books are a good way of interesting children in further personal reading. Recordings of poetry, read either by the authors or competent actors, can bring to children a real appreciation of poetry. Historical happenings, actual and reconstructed, can live for the listeners through records.

Procedures of preparation and follow-up activities similar to those

[52] Libraries equipped with listening booths for record players are found in increasing numbers. Listening booths for radio programs are equally desirable. See William A. Porter, "Audio Materials Supplement to Today's School Library," *See and Hear*, Vol. 2, May, 1947, pp. 44-46.

[53] Of special note are transcriptions such as "You Are There," Columbia Broadcasting Company, and records like "Books Bring Adventures," Gloria Chandler Recordings, 422½ W. 46th St., New York 19, N. Y. See also section in bibliography at the end of the chapter.

suggested for radio listening are likewise indicated when recordings are used. The advantages of recordings are obvious: they can be heard when and as often as desired. Teacher helps are also available for many recorded programs; one company puts the program on one side of the record, and on the other side, suggestions for the teacher to use before presenting the record to the class as well as desirable follow-up procedures.[54]

Improved and inexpensive recording devices, wire, tape, and disc recorders, are making possible recordings by children themselves for educational purposes. The value of "hearing yourself as others hear you" is well known. Recording language experiences enables children to hear their own sentence constructions, pronunciation, and word usage, and facilitates both detection and correction of errors. Recorded music by groups or individuals has its own intrinsic interest, as well as the value of improving technique, tone quality, or enunciation. The speech of children who lisp, stammer, or stutter can be recorded for closer study of the problem and, if done at several intervals during the term, may provide a valuable record of improvement.

Unusual opportunities for speech and dramatic experiences can be provided by using a microphone and loud speaker to simulate a radio production. These classroom radio productions motivate and stimulate many experiences. First comes the production of the script, then the selection of the readers and the production staff, the selection of sound effects and background music, and finally working all together to produce the program. Throughout is the need for group planning. Such programs can be produced in the early primary grades as well as in the upper grades.[55]

Television. This medium of audio-visual education is being used in many classrooms throughout the country, and its use is expected to increase. Classroom television receivers can be used, both to see and hear informative-type telecasts, such as the inaugurations of public officials, political or historical events, and also demonstrations in science and other fields, by the best-qualified authorities using the best materials and equipment to present information to thousands of students at the same time. One school system is presenting the "Teletown Express" specifically for elementary schools. It includes a story, music, and dance by students with the aid of the radio-television staff member.[56]

[54] Training Aids, Inc., 7414 Beverly Blvd., Los Angeles 36, California.

[55] For helpful suggestions see Ruth Quinn and Allison J. McNay, *Classroom Radio Production* (Hollywood, Calif., C. J. Ver Halen, Jr. Publishing Co., 6060 Sunset Blvd., 1948), 31 pp.

[56] Reported in "Teacher! Here Comes Television" by Martha Gable, *Educational Screen*, Vol. 28, February, 1949, pp. 69-70.

Other discussions of television are to be found in Noran E. Kersta, "Television is New Educational Medium," "Radio Electronics in Education" (New York, Radio Corporation of America, 1943), pp. 29-32.

Gertrude Novokovsky, "A Symposium on Techniques for Utilizing Radio in Classroom," *See and Hear*, Vol. 4, November, 1948, pp. 26-28.

All audio-visual resources help to break down the walls of the classroom; they widen the pupil's contact both in time and space. None is complete or adequate by itself. Used intelligently, each offers much of value.

IV. LEARNING THROUGH READING RESOURCES

The textbook. Better evidence of the changing scene in the elementary school could not be desired than that of the vitalized textbooks. From drab, uninteresting pages of difficult vocabulary and even more difficult concepts the textbooks have been transformed into vivid, attractive, challenging presentations with simple vocabulary and full of meaningful ideas. Progress has been marked among all texts and is especially apparent in supplementary books.

Of even greater importance is the utilization of several books in place of the single text. Many cities have no single series of social-studies or reading texts for the elementary grades. Instead, they are purchasing a large number of smaller sets.

The use of several books in a class should improve the teaching. Comparison and contrast can be effectively utilized. It is commonly recognized that many influences affect the content of texts.[57] The critical attitude can hardly be effectively developed through one author's viewpoint. Since textbooks were the mainstay of the traditional program, the negativistic approach to progressive education has been to abandon texts entirely. One extreme is probably as bad as the other. A good series of texts often represents the best work of a lifetime of several outstanding educational experts and the editorial staff of the publisher. Certainly they do have much to offer.

Organization of material within the textbook has changed. Disappearing in the social-studies field is the study of "wars and rumors of wars" and a completely chronological organization. Units, generalizations, and developmental treatments—such as the growth of transportation—are taking their place as the basis of organization.

Pictures and illustrative materials have been improved in both quantity and quality. There is considerably more relation between the text and illustrations than formerly. Maps have increased in variety and definiteness of purpose.

Questions at the end of the chapters have been replaced by a variety of study helps. These helps are directed toward the improvement of the reading ability and the understanding and the utilization of the material. Some books suggest a variety of activities which would be profitable in connection with a unit.

[57] Howard K. Beale, *Are American Teachers Free?* (New York, Charles Scribner's Sons, 1936).

Bessie L. Pierce, *Public Opinion and the Teaching of History* (New York, Appleton-Century-Crofts, Inc., 1926).

There are several rather elaborate discussions of criteria for the selection of textbooks for use by selection agencies, such as state and city committees.[58] The primary concerns of the teacher are the suitability of some special phase of the material for the proposed unit and the most effective use of the text. A few questions of value to a teacher are:

1. What special contribution can the text make to the understandings, techniques, and attitudes of her children?
2. Is the vocabulary sufficiently simple?
3. Will it be interesting to the pupils?
4. Do the illustrations contribute to the concepts, both as to interest and understanding?
5. Are the concepts adapted to the level of the pupils?
6. Are the study helps of value?

Supplementary books. Even the traditional history and geography courses required supplementary books. The need of such material has been greatly increased with the advent of the activity and unit-of-work program.

Outstanding have been the supplementary books issued for the social studies. Publishers are attempting to supply the elementary schools with the type of book that will meet the needs of the unit-of-work program. The great differences in courses of study, especially for the fourth, fifth, and sixth grades, have made it extremely difficult to furnish adequate materials.

The miniature camera is responsible for one of the newer developments in supplementary texts. There are many books which make extensive use of photographs.

The elementary school library. The library has become an increasingly important part of the school. The most helpful treatment of the problems encountered will be found in *Teaching Through the Elementary School Library.*[59] Room libraries have become essential. Books must be where children are working if they are to be used.

The functions of the library have changed. It no longer is the sole dispenser of books, but rather the clearing-house for books, and many other types of learning materials. The American Association of School Administrators has stressed that, "The library is the logical center for all the learning resources. Actual materials, information files, and projection equipment can be effectively administered as part of the library collec-

[58] Miriam A. Compton, *A Check List for the Evaluation of History Texts* (Philadelphia, McKinley Publishing Co., 1932).

National Society for the Study of Education, *The Textbook in American Education, Thirtieth Yearbook,* Part II (Bloomington, Ill., Public School Publishing Co., 1931).

Gertrude Whipple, *Procedures Used in Selecting Schoolbooks* (Chicago, University of Chicago Press, 1936).

J. A. Clement, *Manual for Analyzing and Selecting Textbooks* (Champaign, Illinois, Garrard Press, 1942).

[59] Walraven, Margaret K. and Hall-Quest, Alfred L. (New York, The H. W. Wilson Company, 1948).

tion."[60] The outstanding difficulty is that the use of the school library may be mechanized due to administrative desires for a smoothly running school. This centralized library with scheduled periods defeats any purpose of the pupils doing research. They must have easy access to materials in the room. The administration should be aware that though the library may be scheduled for free reading periods, scheduling research periods will only tend to be unnecessarily restrictive on learning.

Small schools often do not have room for a separate library, but a corner can always be set aside. This corner should be the most attractive spot in the room. Good light, a large table, and many attractive books are the barest beginnings. The imaginative teacher will go much further.

Larger elementary schools often have a separate room and in many cases a librarian. This room should be the most attractive place in the school. Easy chairs, reading corners, displays, and pictures, all contribute to a reading atmosphere. Various rooms can have the opportunity to decorate the library. Many display materials from culminating activities can go into the library to make the children feel it is their own. The librarian is thought of as a resource person who will suggest materials which may be useful for certain units, and assist the teacher in securing, displaying and using them.

The magazines subscribed to in the community offer a source of material for schools which feel they cannot afford regular subscriptions. People in the average community take a much greater number of valuable magazines than one would think. Many of these can be obtained for school use.

Suggested Learning Experiences

1. This chapter offers many possibilities for the exploration of many learning resources. The following are some suggestions for reports by individual members of the group.
   a. Plan, and if possible conduct, a field trip for the class, as it should be done for a specific grade.
   b. Develop further suggestions for one type of socializing experience.
   c. Develop a file of visual material for the school, including suggestions for mounting such material.
   d. Show how to make various types of slides. This should be illustrated with slides.
   e. Demonstrate how to use a film in connection with a unit. If possible, an actual class should be used. If not, the preparation, showing, and follow-up should be illustrated with your group.
   f. Prepare an exhibit of the types of charts and graphs which are suitable for the various grade levels.
   g. Prepare an exhibit of the kinds of maps which are suitable for the various grade levels.
   h. Make a study of the effect of pressure groups on textbooks.
   i. Contrast a textbook series of some years ago with a modern series in the same subject.

[60] American Association of School Administrators, *American School Buildings* (Washington, D. C., The Association, 1949), p. 261.

j. Develop a suggested procedure for selecting texts (see footnote 58).

k. Develop a suggested list of books for an elementary-school library which is to be started.

2. Prepare for your present community of list of available resources for the curriculum. Include field trips, resource people, service projects, and camping possibilities for a particular grade level.

3. Select some of the most usable resources and write supplementary reading material which will help the pupils to better understand them. These accounts should be written for the grade which makes use of the resources.

4. Select from the many pictorial magazines a series of pictures for use in a unit of work. Does your collection show contrast, make comparisons, and bring out continuity? Are the pictures accurate, representative, clear, and appropriate?

5. A committee to study the radio could well be formed. Some of the materials which they could prepare which would be valuable to members of the class are:

a. A list of school programs available within their area—station, time, grade, type of program

b. A list of programs for out-of-school listening for the various grades

c. A list of programs of value to teachers or prospective teachers

d. A demonstration of the use of a radio program in the classroom

References Dealing With Several Resources

Association for Childhood Education, *Using Audio-visual Materials with Children* (Washington, The Association, 1947), 35 pp. Includes sections on community experiences, radio, films, pictures, and objects.

Association for Supervision and Curriculum Development, "Materials of Instruction," *Educational Leadership,* Vol. 5, January, 1948. Entire issue devoted to discussion of materials of instruction, including bibliography for audio-visual and community materials.

Dale, Edgar, *Audio-visual Methods in Teaching* (New York, The Dryden Press, 1946), 546 pp. Comprehensive treatment in terms of contributions made by each type of learning resource.

Dent, Ellsworth C., *Audio-visual Handbook* (Chicago, Society for Visual Education, 1942), 227 pp. Simplified survey of types, applications, and production of audio-visual aids of all kinds.

Department of Elementary School Principals, *Enriching the Curriculum for the Elementary School Child, Eighteenth Yearbook* (Washington, National Education Association, 1939). Chapters I, II, and VIII deal with the curriculum.

Hoban, Charles F., Hoban, Charles F., Jr., and Zisman, Samuel B., *Visualizing the Curriculum* (New York, The Dryden Press, 1937). Excellent description of all experiences with background discussions and detailed suggestions for use and construction.

Koon, Cline M., "School Use of Visual Aids," Bulletin 1938, No. IV (Washington, U. S. Office of Education, 1938). Good suggestions for using objects, pictures, and motion pictures.

McKown, Harry C., and Roberts, Alvin B., *Audio-visual Aids to Instruction,* 2d ed. (New York, McGraw-Hill Book Company, 1949). Descriptions of many aids, with suggestions for using them at various school levels and for administering and supervising a program.

Wesley, Edgar B., and Adams, Mary A., *Teaching Social Studies in Elementary Schools* (Boston, D. C. Heath & Company, 1946). Chapters XV, XVI, and XVII treat printed sources, audio-visual materials, and community resources.

Wofford, Kate V., *Teaching in the Small School* (New York, The Macmillan Company, 1946). Of particular value are Part III—"Providing Enriching Experiences," and Part IV—"Understanding and Working in the Out-of-School Environment."

Periodicals

These are the best of the current journals. They discuss many types of learning resources:

Educational Screen, 64 East Lake St., Chicago.
See and Hear, E. M. Hale Co., Eau Claire, Wisconsin.

Monthly columns reporting new developments and sources in the field of learning resources may be consulted in these and other standard professional journals:

"Look and Listen," in the *Elementary English Journal.*
"Audio-visual Aids," in the *National Education Association Journal.*
"Sight and Sound in the Social Studies," in *Social Education.*

REFERENCES DEALING WITH COMMUNITY EXPERIENCES

Association for Supervision and Curriculum Development, *Organizing the Elementary School for Living and Learning* (Washington, National Education Association, 1947), 207 pp. Chapter III, "Toward Community Planning," makes many suggestions for activities which are the proper function of the community school.

"Camping Education for the Elementary School Child," *The National Elementary Principal*, Vol. 28, February, 1949, pp. 1 thru 48. All of the articles in this issue stress the value of camp experiences for elementary school children.

Department of Elementary School Principals, *Community Living and the Elementary School, Twenty-fourth Yearbook* (Washington, National Education Association, 1945), 351 pp. Describes actual practice in both rural and urban communities.

——, *How to Know and How to Use Your Community* (Washington, National Education Association, 1942), 80 pp. Nine articles describing the use of community resources in curriculum planning.

KOOPMAN, Margaret O., *Utilizing the Local Environment* (New York, Hinds, Hayden & Eldredge, 1946), 62 pp. Philosophy, objectives, and techniques in community study, with special stress on surveys.

MACKINTOSH, Helen K., *Camping and Outdoor Experiences in the School Program*, Bulletin 1947, No. 4 (Washington, U. S. Office of Education, 1947), 41 pp. Many illustrations of programs developed by individual school systems. Includes a section on how to start a program.

New York State Education Department, *Exploring the Environment*, Elementary School Social Studies Pamphlet III (Albany, University of the State of New York Press, 1943), 174 pp. Practical suggestions to teachers for understanding a community better, and for making effective school use of community resources.

OLSEN, Edward G., and others, *School and Community* (New York, Prentice-Hall, Inc., 1945), 422 pp. Discusses philosophy, techniques, basic principles and problems of community study and service through the schools. An excellent annotated bibliography.

———, *School and Community Programs* (New York, Prentice-Hall, Inc., 1949). A casebook of successful practices from kindergarten through adult education.

OLSON, Clara M., and FLETCHER, Norman D., *Learn and Live* (New York, Alfred P. Sloan Foundation, Inc., 1946). Dramatic narrative of the Project in Applied Economics developed in the schools of three states over a period of years. Shows how classroom and community instruction can raise living standards in terms of food, clothing, and shelter.

University of Minnesota Elementary Demonstration School Faculty, *Using Community Resources* (Minneapolis, University of Minnesota Press, 1948). Detailed reports of illustrative experiences units for grades one to six.

REFERENCES DEALING WITH CREATIVE AND SOCIALIZING EXPERIENCES *

Association for Childhood Education, "Portfolio on Materials for Work and Play" (Washington, Association for Childhood Education, 1947). Twelve leaflets containing very practical suggestions for making a variety of simple equipment and for handling materials and tools. Bibliography included.

* See Chapter 14.

Association for Supervision and Curriculum Development, *Toward Better Teaching* (Washington, National Education Association, 1949). Chapter V, "Fostering Creativity," defines creativity, lists sources of materials, discusses media, and analyzes teaching atmosphere for maximum learning development.

Department of Elementary School Principals, *Creative Schools, Twenty-third Yearbook* (Washington, National Education Association, 1944). Beginning with the philosophy of creative experiences in the elementary school, by Lee and Lee, the book continues with a wealth of articles on all types of creative activities, most of them described by elementary school teachers or principals.

FALLIS, Edwina, *The Child and Things* (New York, World Book Company, 1940). A wealth and variety of suggestions for school room furnishings, play equipment, materials, and tools.

LANE, R. H., *The Teacher in the Modern Elementary School* (Boston, Houghton Mifflin Company, 1941), pp. 247-51. Excellent suggestions for school newspaper publication.

REFERENCES DEALING WITH AUDIO-VISUAL EXPERIENCES

General

Department of Elementary School Principals, *The Principal and Audio-Visual Education* (Washington, National Education Association, 1947), 88 pp. Deals with the opportunities and obligations of the principal in encouraging and improving teaching through audio-visual aids.

HARTLEY, William H., ed., *Audio-Visual Methods and Materials in the Social Studies*, National Council for the Social Studies, *Eighteenth Yearbook* (Washington, National Council of Teachers of Social Studies, 1947). Contains excellent ideas for using all types of audio-visual aids. Appendix lists sources of materials.

HOBAN, Charles F., Jr., *Focus on Learning* (Washington, D. C., American Council on Education, 1942). Summarizes a five-year evaluation study and relates the implications to the teaching field. Many practical suggestions.

National Council of Teachers of Mathematics, *Multi-sensory Aids in the Teaching of Mathematics, Eighteenth Yearbook* (New York, Bureau of Publications, Teachers College, Columbia University, 1945), 455 pp. Excellent for arithmetic teachers on visual aids.

National Society for the Study of Education, *The Teaching of Geography, Thirty-Second Yearbook* (Bloomington, Ill., Public School Publishing Company, 1933), Chapters XXIV, XXV, XXIX, and XXX. Discussions of visual material and its use in geography.

———, *Audio-Visual Materials of Instruction, Forty-Eighth Yearbook* (Chicago, Ill., The University of Chicago Press, 1949), Part I. Discusses school programs, city, rural, and state programs, preservice and inservice teacher training and research.

STRAUSS, L. Harry, and KIDD, J. R., *Look, Listen and Learn* (New York, Association Press, 1948). A non-technical manual on the use of audio-visual materials in informal education. Practical detailed suggestions designed for the layman.

TROLINGER, Leila, "Visual Instruction in Elementary Schools," *Educational Screen*, Vol. 22, November, 1943, pp. 331-336. An exposition by an expert of the responsibility of the elementary school for promoting wider and better use of all perceptual aids.

Pictures

American Library Association, "The Library's Picture Collection," *Subscription Books Bulletin* (Chicago, Illinois, American Library Association, October, 1946). A list of sources of pictures with information on processing, filing, and giving effective service.

BROOKS, Mary Esther, "Lantern Slides and How to Use Them," *See and Hear*, Vol. 1, May, 1946, pp. 70-79. One of the best descriptions of how to make slides, with suggestions for many types of teacher and pupil work.

COREY, Stephen M., "Teacher Evaluation of Classroom Motion Pictures," *Elementary School Journal*, Vol. 45, February, 1945, p. 324. Some criteria for evaluating films used in classrooms.

DALE, Edgar, BARTLETT, Mary M., LEMLER, Ford, and CLARK, Ella C., *How to Teach with Pictures* (Grand Rapids, Mich., Informative Classroom Pictures, 1947). Four articles dealing with the principles involved in teaching with pictures.

ELLIOTT, G. M., ed., *Film and Education;* a symposium on the rôle of the film in the field of education (New York, Philosophical Library, 1948), 597 pp. A comprehensive treatment by 37 specialists stresses enrichment possibilities. Rich in suggestions for uses.

FALCONER, Vera M., *Filmstrips* (New York, McGraw-Hill Book Company, 1948). A detailed analysis of filmstrips, what they are, how to use in teaching, mechanics of operation. Reviews 3000 strips on all subjects, includes distributor directory.

HOBAN, Charles F., Jr., *Movies That Teach* (New York, Dryden Press, 1946). Especially useful for teaching techniques and conditions of good use.

STOPLER, J. R., *The Bulletin Board as a Teaching Device* (New York, Bureau of Publications, Teachers College, Columbia University, 1946), 15 pp. Some ideas for using this usually forgotten audio-visual method of instruction.

TAYLOR, J. Y., *Opaque Projection, A New Frontier in Teaching* (Buffalo, New York, American Optical Company, 1941). Suggestions and directions for use of opaque projection.

WITTICH, Walter Arno, and FOWLKES, John Guy, *Audio-Visual Paths to Learning* (New York, Harper and Brothers, 1946). Report of a research study on utilization of the sound film in fourth, fifth, and sixth grades. Shows advancement in learning through use of certain teaching methods.

Radio and Other Auditory Resources

CALLAHAN, J. W., *Radio Workshop for Children* (New York, McGraw-Hill Book Company, 1948), 398 pp. Rich in suggestions for use of radio as "a colorful form of creative learning." Suggestions for pupil planning, writing, and acting of programs.

Department of Elementary School Principals, *Radio and the Classroom* (Washington, D. C., The Department, 1940-41). Eighteen articles on radio.

GABLE, Martha A., "Teacher! Here Comes Television," *Educational Screen,* Vol. 28, February, 1949, pp. 69-70. A description of the use of television in the Philadelphia schools, types of programs, and trends for the future.

LEVENSON, William, *Teaching through Radio* (New York, Rinehart & Company, Inc., 1945). An account of the use of radio by the schools in Cleveland, Ohio. Contains an excellent discussion on commercial programs for children.

LEWIS, Philip, "Television Goes to School," *Educational Screen,* Vol. 27, November, 1948, pp. 439-441 ff. Technical discussion of types of receivers and installations for schools. Includes diagrams of satisfactory solutions of some problems.

MILES, Robert, LOWDERMILK, R. R., and TYLER, I. Keith, *Recordings for School Use: A Catalog* (New York, World Book Company, 1945). Recordings listed according to subject field with good descriptions of each record. Also some criteria for selection and operation of equipment.

PALMER, Richard, *School Broadcasting in Britain* (London, British Broadcasting Corporation, 1947). Shows how radio can contribute to education. Clearly Britain is far ahead of us in the use of this medium.

ROSS, Alan, "The Radio Broadcast as a School Language Experience," *Language Arts in the Elementary School, Twentieth Yearbook* (Washington, National Education Association, 1941), pp. 549-53. Lists values of broadcasting, describes programs put on by elementary school children.

WILLEY, R. D., and YOUNG, H. A., *Radio in Elementary Education* (Boston, D. C., Heath & Company, 1948), 450 pp. The best and most complete discussion of techniques of teaching by radio generally, and for specific subjects. Chapter on administrative problems, and future of radio in school.

WOELFEL, Norman, and TYLER, I. Keith, *Radio and the School* (New York, World Book Company, 1945). A five-year investigation of school use of radio, transcriptions, and recordings. Comprehensive treatment of sources and selection.

Museums, Graphs, Maps, Other Teaching Aids

ARKIN, Herbert and COLTON, R. R., *Graphs: How to Make and Use Them* (New York, Harper and Brothers, 1936). Useful suggestions for graphic presentation.

FILDES, R. E., "Blackboards and Their Use," *Elementary School Journal,* Vol. 35, June, 1935, pp. 760-767.

FORSYTH, Elaine, "Map Reading," *Journal of Geography*, Vol. 42, October, 1943, through Vol. 43, May, 1944. A series of excellent articles outlining steps to be taken in teaching various map concepts.

MODLEY, Rudolph, *How To Use Pictorial Statistics* (New York, Harper and Brothers, 1937). Useful suggestions for graphic presentation.

RAMSEY, Grace F., *Educational Work in the Museums of the United States* (New York, H. W. Wilson Company, 1939), 289 pp. Suggested activities with school classes, museum and the radio, and museum excursions.

WHIPPLE, Gertrude, and JAMES, Preston E., "Instructing Pupils in Map Reading," *Social Education*, Vol. 11, May, 1947, pp. 205-208. Gives suggestions beneficial in teaching map reading to children.

REFERENCES DEALING WITH READING SOURCES

DOUGLAS, Mary Peacock, *Teacher-Librarians Handbook* (Chicago, The American Library Association, 1941). Developed to meet the specific needs of teacher-librarians. Lists standards for elementary school libraries. Very practical.

FARGO, Lucile F., *The Library in the School* (Chicago, The American Library Association, 1947). Deals with problems of school libraries, with some emphasis on elementary libraries.

FENNER, Phyllis R., *The Library in the Elementary School* (New York, Hinds, Hayden & Eldredge, 1945), 31 pp. Excellent source for the beginning librarian.

National Society for the Study of Education, *The Library in General Education, Forty-Second Yearbook*, Part II (Bloomington, Illinois, Public School Publishing Company, 1943). Section II deals with library services at the elementary school level.

———, *Reading in the Elementary School, Forty-Eighth Yearbook*, Part II (Chicago, University of Chicago Press, 1949), Ch. VII. Careful analysis of desirable materials, facilities and resources for reading.

WALRAVEN, Margaret K. and HALL-QUEST, Alfred, *Teaching through the Elementary School Library* (New York, H. W. Wilson Company, 1948). The best source of help for the teacher-librarian.

WHIPPLE, Gertrude, "Procedures Used in Selecting Textbooks," *Elementary School Journal*, Vols. 36, 37 (May, June September, 1936), pp. 665-73, 760-75, 17-57. A series of articles of considerable value to the committee responsible for selecting school texts.

BIBLIOGRAPHIES AND LISTS OF FREE AND INEXPENSIVE MATERIALS

BRODERICK, Gertrude G., *Catalog of Radio Recordings* (Washington, Federal Radio Education Committee, 1946). Lists transcriptions and recordings available to schools for rent or loan; many recorded broadcasts.

Educational Film Guide (New York, H. W. Wilson Company). Cumulative annual catalog with two-year supplement service. Includes all films of teaching value, rated by school people.

Educators Guide to Free Films (Randolph, Wisconsin, Educators Progress Service). Lists films and filmstrips by title index, subject classification, cross-indexed, with brief descriptions. Revised annually.

Elementary Teachers Guide to Free Curriculum Materials, edited by J. G. Fowlkes and D. O. Morgan (Randolph, Wisconsin, Educators Progress Service). Revised annually. Comprehensive listing of teaching materials. Mimeographed.

Teaching Aids Service of the Library, Lili Heimers, director (Upper Montclair, N. J., New Jersey State Teachers College). Issues booklets on various subjects, each booklet giving annotated listings of pictures, exhibits, recordings, films, charts, publications, etc. An excellent source of information.

WEINMAN, Constance, *Bibliography on Audio-Visual Instructional Materials for Teachers in the Elementary School* (New York, Bureau of Publications, Teachers College, Columbia University, 1947). Provides lists of references and sources. Includes a number of out-of-print sources still found in libraries.

Wilson Bulletin (H. W. Wilson Company, New York). Monthly service, listing pamphlets and posters which can be obtained free or at low cost.

9

Social Experiences: The Study of Man

I. WHY SOCIAL EXPERIENCES FOR THE ELEMENTARY-SCHOOL CHILD?

Purposes change social studies. Changes in the purposes of education have had more effect on social studies than any other area. From a concept of mastery of certain facts as the aim, social studies have moved toward a consideration of "the child's more effectively meeting situations involving social relations" as the goal. This change in purpose carries vast implications for changes in practice. Some changes have already been made; others will follow.

No longer should a controversy arise as to whether this part of history or that phase of geography should be taught. *The curriculum cannot be constructed by asking the subject-matter expert in one narrow field what, from his field, should be placed in the curriculum.* Rather, the start is made from "what are those situations involving social relations which the child is or will be meeting" and "how he can be helped to meet more effectively those situations?" The application of these latter criteria in guiding curriculum selection is necessary if progress is to be made toward the goals of the elementary school.

Functioning in social situations. The child to be effective in situations involving social relations must:

1. Be able to function as a member of the various groups of which he is or will be a part.
2. Be competent in dealing with such problems as arise in these groups.
3. Have developed such attitudes as will permit a careful consideration of these problems.
4. Be able to locate and utilize such material as will bear upon these problems.

With these needs as a basis the curriculum involving experiences in social relations is to be built.

There would be considerable agreement among educators that the social studies should develop in the child competence in the four phases mentioned. The points of disagreement occur largely in determining the means by which the ends could be realized and in deciding upon the implications which the ends have for the educational program. To what extent problems of personal relations with other people should enter into the curriculum is one example of disagreement. Another, which has been

given much more attention but is probably less vital, is how much and what history should be included. As the remainder of the chapter is studied, such differences can be noted in the various practices of schools which are described.

Social challenge of to-day. "Change" is the key-note of to-day. *One World Or None*[1] or *Education in a Divided World*[2] are issues facing educators to-day. The atomic bomb, United Nations, and UNESCO were all unheard of when the first edition of this volume appeared (1940). Less than two years later we were plunged into a war which sent our men to all parts of the earth. Now more than before we face widely recognized issues and controversies calling for information and understandings involving all peoples of the earth. The American people have the responsibility for decisions which affect the welfare of the whole world.

Such rapid and far-reaching changes have occurred that we have only too little understanding of their significance. Stresses and strains of the most urgent nature are causing countless pressures in our American civilization. Forces are constantly at work that may result in utter chaos. The evidence is only too clear in the areas of government, capital and labor relations, economic control, personal relations, and exploitation. In this "seething cauldron" appear certain probable trends which seem fairly well defined. Education must be conscious of them if the school program is not to be completely divorced from the society of which it is a part.

The importance of teachers' understanding the salient aspects of contemporary American civilization has been pointed out by Quillen and Hanna. They list the following generalizations as most important:[3]

1. The widespread employment of the scientific method of thought has produced revolutionary inventions and resulted in the development of a machine technology.
2. The widespread employment of the machine in the production of goods has produced a specialized, interdependent, and increasingly centralized economy, made possible not only by factory production but also by great advances in transportation and communication which have so reduced space in terms of travel and communication time that the whole world is rapidly becoming a single interdependent unity.
3. Factory production has caused a concentration of population in cities, thus producing a shift from a rural, handicraft culture to an urban, industrialized culture with increased complexity in human relationships and in the problems of daily living.
4. Relationships in modern urban culture have shifted, to a large extent, from the face-to-face (primary) associations of the earlier rural environment to person-to-group and group-to-group (secondary) relationships in which intimacy of acquaintanceship and warmth in personal relations are being replaced by

[1] Dexter Masters and Katharine Way, eds. (New York, McGraw-Hill Book Company, 1946).

[2] J. B. Conant (Cambridge, Harvard University Press, 1948).

[3] I. James Quillen and Lavone A. Hanna, *Education for Social Competence* (Chicago, Scott, Foresman and Company, 1948), pp. 19-20.

increasing anonymity and impersonality; thus, the individual often feels isolated and alone in the midst of great masses of humanity.

5. Science and invention have accelerated change in most areas of modern culture. The rate of change, however, has been most pronounced in the material aspects of the environment, while change in social organization and control has often been resisted strongly. The result has been incoördination in change accompanied by severe tensions, social maladjustments, and conflicts of interest, which, in periods of crisis, may extend to a challenge of basic values and established systems of social organization and control.

6. Since modern culture is specialized and interdependent over broad areas and the major relationships are secondary, interest groups have organized on a mass basis. Hence, conflicts of interest are waged by mass organizations employing the best psychological knowledge and the most efficient agencies of communication; and when these means fail, groups within and among nations sometimes seek to secure their ends by force.

7. The hope for peace, prosperity, and happiness in the modern world is that man will be able and willing to solve his problems and make necessary changes through the use of reason and democratic action. In a complex culture marked by limited opportunities for learning through direct experiences, formal education must assume a heavy responsibility for developing competence in critical thinking and democratic processes.

The above characteristics of modern culture condition the task of the school in general and of the social-studies teacher in particular. But a knowledge of cultural conditions alone is not enough. Change is necessarily in some direction. Hence, in order to develop the competence necessary for effective thought and action in contemporary culture, the social-studies teacher must possess a conception of values; and, in the United States, there is practically universal agreement that change should be in the direction of a fuller realization of democratic values.

The beginnings of these understandings must be made in the elementary schools. Changes must be made in the social studies program if we are to have literate adults. Eskimos and Indians certainly are not the most valuable units to be taught.

The tendency has been to say, "Economic competence must be developed; international understanding must be stressed; pupils must know about the United Nations and UNESCO; and the implications of the air-age and the atomic bomb must be taught." These are all added to the curriculum without once hearing anyone say what can be removed. Changes in the units actually taught have been very slow. The number of school systems actively at work revising their social studies program for grades one to twelve needs to be greatly increased. Programs must be developed to produce American citizens capable of meeting their local, national, and international obligations.

Values furnish direction. Values for individual and social groups are existent, whether stated or implied, whether conscious or unconscious. Fascism, Communism, and democracy, all differ in their values. A Pasteur and a Florence Nightingale have values different from a thief's. From a concept of values, effected by changing conditions, direction is indicated.

Democratic values have been stated by the Educational Policies Com-

mission in terms of "Hallmarks of Democratic Education." These, of utmost importance for social studies teachers, are: [4]

1. Democratic education has as its central purpose the welfare of all the people.
2. Democratic education serves each individual with justice, seeking to provide equal educational opportunity for all, regardless of intelligence, race, religion, social status, economic condition, or vocational plans.
3. Democratic education respects the basic civil liberties in practice and clarifies their meaning through study.
4. Democratic education is concerned for the maintenance of those economic, political, and social conditions which are necessary for the enjoyment of liberty.
5. Democratic education guarantees to all the members of its community the right to share in determining the purposes and policies of education.
6. Democratic education uses democratic methods, in classroom, administration, and student activities.
7. Democratic education makes efficient use of personnel, teaching respect for competence in positions of responsibility.
8. Democratic education teaches through experience that every privilege entails a corresponding duty, every authority a responsibility, every responsibility an accounting to the group which granted the privilege or authority.
9. Democratic education demonstrates that far-reaching changes, of both policies and procedures, can be carried out in orderly and peaceful fashion, when the decisions to make the changes have been reached by democratic means.
10. Democratic education liberates and uses the intelligence of all.
11. Democratic education equips citizens with the materials of knowledge needed for democratic efficiency.
12. Democratic education promotes loyalty to democracy by stressing positive understanding and appreciation and by summoning youth to service in a great cause.

Choices as to whether a child will contact "this" or "that" must be made. Selection cannot be avoided. Even non-disturbance of the status quo indicates that a decision has been made. The list of trends and democratic values have been included to indicate that there are other possible bases for choosing social-studies materials besides the one offered by traditional history and geography. The choice of means, by which we attempt to reach the aim of making the child more effective in meeting social situations, will determine our success or failure.

An overview. The planning of an adequate social-studies program requires the consideration of a variety of factors. The purpose of this chapter is not to present a comprehensive treatment of all of the factors but rather to suggest some of the possible considerations. This section has emphasized (1) the need of the child effectively to meet situations involving social relations, (2) social changes and trends that are important, and (3) goals and values which America holds worth while. Chapter 1 also contained considerable material of value on this last point.

[4] Educational Policies Commission, *Learning the Ways of Democracy* (Washington, D. C., National Education Association, 1940), pp. 35-39. Each is discussed briefly in the reference.

Recent years have seen many new emphases in social studies. These are discussed in section II. Section III analyzes more in detail the situations the child must meet. These are both personal and social. Section IV presents material dealing with understandings, skills, and attitudes. Section V lists a number of basic principles of value in developing a social-studies program. Actual programs are analyzed in section VI. This section shows in what way all of the factors have been synthesized in the curriculum. A variety of social experiences is given in section VII and suggested teaching procedures in section VIII.

The purpose of the whole chapter is to give the teacher a broad understanding of the problems involved in the elementary social-studies program. Unless the teacher can see the framework upon which she builds, there will be much wasted effort. One definite framework is not presented here as ideal. Rather, an attempt is made to show the elements which should be considered and how these elements may be combined in certain programs.

The teacher must be able to relate the units for the year to the complete social-studies program. Her units must provide for continuity, must fit into the total program. The purposes, experiences, and outcomes need to be planned in reference to the whole program. Though the teacher seldom has to develop an entire social-studies program, she must understand the complete development.

Many essential elements with which a social-studies program needs to be concerned are discussed in this chapter. All of these elements may not be present in the framework of the program of a given teacher. However, she should be conscious of the phases that need consideration in order to make the program richer for her children. These elements which are stressed throughout this chapter are:

The need of the child effectively to meet situations involving social relations
Social changes and trends
Goals and values which America holds
Social situations which involve personal relations
Suggestions for improving personal relations
Social situations which involve wider relations
Understanding and concepts needed to meet social situations
Essential techniques and abilities needed to meet social situations
Attitudes needed to meet social situations

None of the elements is especially complex, and each may be fairly easily understood by itself. However, when attempts are made to combine them into an effective program, the complex nature of the problem is apparent. The various programs are presented in order that teachers may better understand the program which is being or may be followed in their system.

II. RECENT EMPHASES ON SOCIAL EXPERIENCES

A survey of the literature in the social studies shows certain areas of emphasis. In some cases the development has occurred due to the interest of a definite group, often subsidized or fortunate in obtaining backing to continue their work. The result has been a stressing of their individual area of concern, without attention being given to the whole pattern. Each area is of extreme importance, but a synthesis needs to be made into a unified program.

Recent emphases can be characterized under the following terms:

Democratic living and relationships within the classroom and school
International understanding
United Nations and UNESCO
Intercultural relations
Atomic age and air age
Community school
Improvement of environment—housing, food, clothing
Economic understandings
Improvement in teaching American history

How can a school system proceed to improve its program to include the recent significant material? Obviously there is no easy answer. Equally obviously, as one studies existing programs, there is a very great need for re-thinking and re-evaluating present programs. One way would be to have teachers organize into committees, one for each of the newer emphases. Then the members of each committee could read the best of the material in its area.[5] They could develop a list of the understandings and attitudes of importance to elementary children and the suggested learning experiences necessary to develop these understandings and attitudes.

The second step would be to pool such statements, unify and combine where possible, and then compare with the existing program. To develop some understandings would require emphasis on each grade level; others would be more suitable for lower or upper grades.

Out of such a comparison would develop guiding purposes for each grade level in terms of understandings, attitudes, appreciations and experiences. These would serve to guide the teacher and children in organizing units and experiences to achieve these purposes. Suggested units and resource units could be developed. Such a program would provide flexibility for meeting the needs of the individual class and at the same time give the teacher assurance that he or she was working toward accepted goals.

A mastery of understandings is not enough; procedures are important. The first area to be considered is that of democratic living and relationships within the classroom. These involve teaching procedures. In social

[5] The footnotes in each area discussed are the most valuable references for teachers to use to become familiar with the area.

studies, as other subject fields, the teaching procedures used and the experiences of the pupils are of prime importance.

Democratic living and relationships within the classroom and school. It is obvious if children are to learn to live adequately in a democracy they must have experience with democratic living. They can have little of such experience unless the classroom and school become centers of democratic living. Chapter 5 [6] outlines the types of learnings needed in a democracy. Certain attitudes and habits need to be developed. Children must have much experience in independent thinking rather than learning to accept unquestionably the decisions and opinions of anyone, even the teacher. They must know how and where to find information needed as a foundation for their thinking, and they must learn to judge its pertinency and adequacy for their purpose. They must build attitudes which are the basis of their decisions. If their experiences are individual and competitive, their decisions will naturally be self-centered. If their work is planned by the group for the good of the group, each contributing as he is best able, their decisions may then be based on the truly democratic principle of "the greatest good to the greatest number." They must develop a sense of responsibility to the group, rather than just doing what the teacher tells them and learning to "get by" when no one checks on them.

The newer education provides many procedures for developing these attitudes and habits. The work of several experimenters [7] is reviewed in Chapter 3, which all points out the effectiveness of the democratic attitudes of the teacher and atmosphere of the classroom for developing democratic living, attitudes, and habits among the students.

The basis of control is the determining factor in any form of government. Democracy is based on self-government. The essentials to any form of self-government or self-control are a respect for the will of the majority —not of any one person; a recognition of the authority of whoever has been selected to administer the rules set up by the group, either child or teacher; and an understanding of the means whereby rules which are no longer acceptable to the majority may be changed, but followed until so changed. Ways in which these principles have been worked out in practice have been recorded by a number of writers.[8]

[6] Pp. 155-162.

[7] See pages 110-111.

[8] Some of the best references in this area are:

Educational Policies Commission, *Learning the Ways of Democracy* (Washington, D. C., N.E.A. and A.A.S.A., 1940), 486 pp.

Arthur D. Hollingshead, *Guidance in Democratic Living* (New York, Appleton-Century-Crofts, Inc., 1941), 260 pp.

L. Thomas Hopkins, *Interaction: The Democratic Process* (Boston, D. C. Heath & Company, 1941), 490 pp.

Rose Schneideman, *Democratic Education in Practice* (New York, Harper and Brothers, 1945), 534 pp.

See also the research listed in Chapter 3.

If children are to live contributingly in a democracy, they must also have developed values. These have been termed "spiritual" values by thinkers in the field. An excellent expression of this is:

> The idea of spiritual values may be associated with the idea of living on a high plane. A human being has many needs and functions in common with the lower animals, but he has insights, aspirations, and possibilities that are uniquely human. They represent spiritual values that are to be attained by good living in the natural world. Ideals of justice and coöperation, love of beauty, intellectual curiosity—such values and appreciations develop in human living.[9]

An individual acts in terms of the values which to him are important; understandings alone are not enough. The elementary school has a wonderful opportunity to provide many experiences which will help children develop spiritual values.

> They are growing in respect for human worth, in appreciation and desire for the finer things of life, in the acceptance of responsibility directed toward the common good, and in the desire to make themselves better persons.[10]

The teachers need to agree on the values they consider important and carefully analyze the program to develop such values. One listing of values the school should seek includes respect for personality, increase in control over one's destiny, loyalty to democratic group life, aesthetic sensitivities and enjoyments, and moral fiber.[11]

The two yearbooks of the John Dewey Society and the Department of Elementary School Principals are the best sources for the faculty to use to begin its thinking in terms of ways of developing spiritual values.

International understanding, United Nations, UNESCO. "Since wars begin in the minds of men, it is in the minds of men that the defences of peace must be constructed," is the theme underlying the planning of experiences for international understanding.

> "International understanding" is a broad term and necessarily encompasses many things. It does not connote the absence of national loyalty nor an unrealistic approach to the world. Rather, it includes the process of making students informed and loyal citizens of their own country—aware of the nature of the world in which they live, the relationship of their nation to the world as a whole, the forces that motivate national action, the life and institutions of other nations, and a host of other things in order that they may bring their intelligence and judgment to bear upon the problems of living in an interdependent world.[12]

[9] Department of Elementary School Principals, *Spiritual Values in the Elementary School, National Elementary Principal, Twenty-Sixth Yearbook,* Vol. 27 (National Education Association, September, 1947), p. 14.

[10] *Ibid.,* p. 243.

[11] John S. Brubacher and others, *The Public Schools and Spiritual Values, Seventh Yearbook* of the John Dewey Society (New York, Harper and Brothers, 1944).

[12] National Education Association, *Education for International Understanding in American Schools* (Washington, D. C., N.E.A., 1948), p. 9.

One wonders when one thinks of the number of our boys now in Germany or Japan if they are functioning better because of the social studies program they had no less than five years ago in elementary classrooms. The need for "world-minded Americans" who see beyond the borders of their own community and nation is great. The N.E.A. has developed a list of ten "marks" of a world-minded American that can well serve as the basic understandings for the school to develop.[13] They are:

1. The world-minded American realizes that civilization may be imperiled by another world war.
2. The world-minded American wants a world at peace in which liberty and justice are assured for all.
3. The world-minded American knows that nothing in human nature makes war inevitable.
4. The world-minded American believes that education can become a powerful force for achieving international understanding.
5. The world-minded American knows and understands how people in other lands live and recognizes the common humanity which underlies all differences of culture.
6. The world-minded American knows that unlimited national sovereignty is a threat to world peace and that nations must coöperate to achieve peace and human progress.
7. The world-minded American knows that modern technology holds promise of solving the problem of economic security and that international coöperation can contribute to the increase of well-being for all men.
8. The world-minded American has a deep concern for the well-being of humanity.
9. The world-minded American has a continuing interest in world affairs and he devotes himself seriously to the analysis of international problems with all the skill and judgment he can command.
10. The world-minded American acts to help bring about a world at peace in which liberty and justice are assured for all.

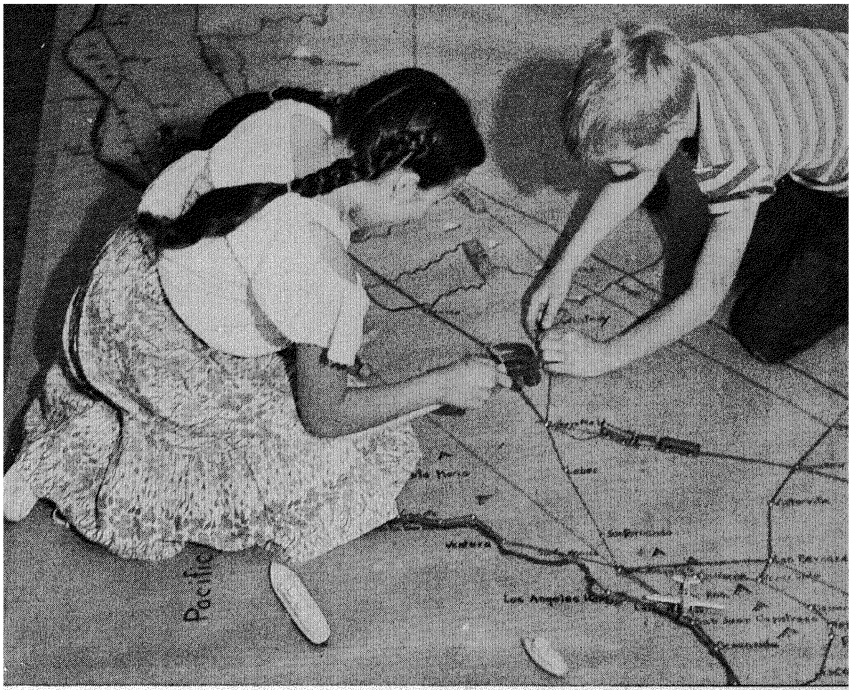
Each of these understandings is discussed in detail, with suggested learning experiences and references. Materials for teachers and pupils are suggested, and visual materials as well as written are included.[14] This volume should be carefully studied by all teachers.

The most important responsibility of the elementary school in laying the foundation for international understanding is through the development of human relations. This development should begin in the kindergarten and continue throughout the school program. Experiences should be provided to continuously expand their concepts from their playmates to include all peoples. There are numerous accounts of school programs. Too many of these seem to be of the "tea-drinking" and "school pageant"

[13] *Ibid.*, pp. 12-13.

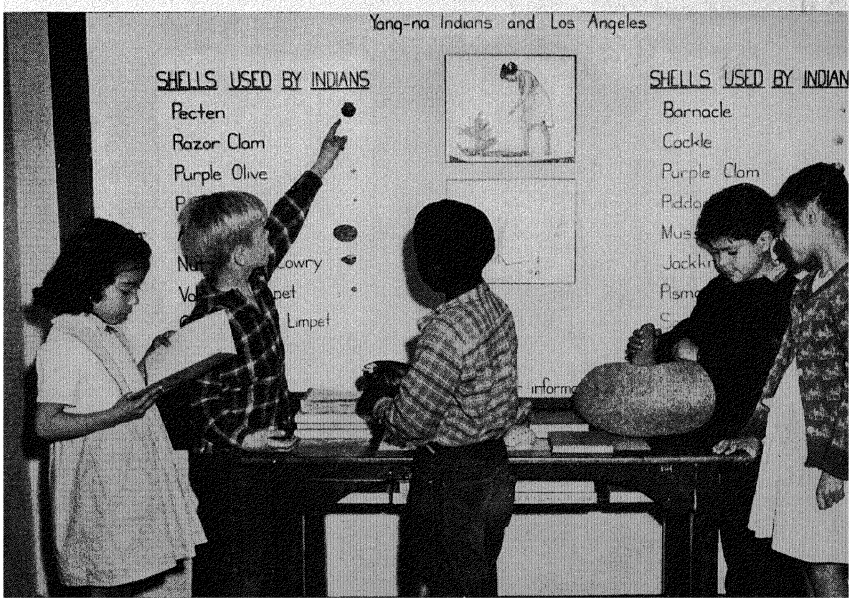
[14] Valuable references are: National Education Association, *Education for International Understanding in American Schools* (Washington, D. C., National Education Association, 1918), 230 pp.

National Council for the Social Studies, *Citizens for a New World, Fourteenth Yearbook* (Washington, D. C., The Council, 1944), 186 pp.



Maps acquire meaning

Local Indians become important



Working toward a goal

Enjoying the accomplishment

type of experience, with few important concepts being involved in the learning experience.

Critical evaluation of learning experiences in this area is a prime responsibility of the staff. Good learning experiences in international understanding are ones in which the learner: [15]

sees the relationship between himself and the apparently remote persons and places involved in world affairs;

sees value and relevance in the information that he learns;

acquires, develops, or modifies his attitudes toward international issues in the light of new information as related to a consciously held scheme of values;

utilizes the processes of critical thinking and evaluation;

has appropriate opportunity for actual doing.

Intercultural relations. There is a very close relationship between the programs of international understanding and those of intercultural relations. As far as the elementary school is concerned, there should just be one program. The goal is to improve human relations in the immediate community. This will provide a basis for improvement in the wider world community.[16]

Selection of curriculum experiences in this area should be made with several criteria in mind. These are grouped as follows: [17]

A. *Significance of Content*

Does the study add to the concepts and generalizations which are basic in interpreting the problems and issues of group relations, such as racial differences, fundamental ideas about what culture is, what are significant cultural variations and how they come about, modifiability of human conduct and cultural conditioning of that conduct?

Does it get at the sensitive understandings of group relations so as to avoid the trivial, esoteric, and ephemeral?

Does the knowledge help eliminate misunderstandings and prejudice?

Are the problems and issues those which clearly demonstrate specific successes, conflicts, and difficulties in group relations in America; such as housing, income, employment, civil rights, and educational opportunities?

B. *Relevance to Immediate Situation*

Here the needs of the community and the interests and security of the pupils are involved. Experience after experience has illustrated that it is possible to eliminate points of stress, especially among the students, by helping various groups understand each other better.

[15] *Education for International Understanding in American Schools, op. cit.*, p. 108.

[16] Valuable references are: National Council for the Social Studies, *Democratic Human Relations, Sixteenth Yearbook* (Washington, D. C., The Council, 1945), 366 pp.

Department of Supervisors and Directors of Instruction et al., *Americans All* (Washington, D. C., The Department, 1942), 385 pp.

Theodore Brameld, *Minority Problems in the Public Schools* (New York, Harper and Brothers, 1946), 261 pp.

[17] The following section is freely adapted from National Council for Social Studies, *Democratic Human Relations, Sixteenth Yearbook* (Washington, D. C., 1945), pp. 37-43.

C. *Consistency of Content and Objectives*

Do the experiences and content really contribute toward the objectives? A pageant based on irrelevant and superficial portrayals of groups does not hit the mark. Are stereotypes avoided?

D. *Cumulative Sequence*

Do the concepts to be enlarged build upon those already begun?

Is the material suited to the children's maturity level? Encouragement to take positions on complex matters prematurely results in verbalism which may be mistaken for understanding. Careful experimentation and evaluation will help. There is no easy answer here.

E. *Integration of Ideas*

Does the unit relate the problem to the whole of American life? Teaching minority groups in isolation is poor. The whole of any group and the whole rôle of minorities needs to be progressively developed.

Atomic age and air age. The exploding of the atomic bomb made more vivid and more necessary the understanding of the concepts that:

The earth is growing smaller and our protective natural barriers have largely disappeared.

Man has vast resources at his command which can be used either for the good of mankind or for its destruction.

Our social controls have lagged behind our scientific development.

These concepts are by no means new, but their extensions and implications were terrifically accentuated.[18]

Increase in speed of transportation and communication has constantly shrunk the world. The increased use and efficiency of the airplane has changed the pattern of world travel routes and the previous importance of certain natural barriers. Our defenselessness against the atomic bomb has removed the geographical advantages which we previously had.

A beginning of these understandings must begin early in the elementary grades. Where the past is studied, comparison must be made with to-day. The slow progress of the pioneer to California must be contrasted with our speed to-day. The development of Seattle as a seaport contrasted with the possible development of Edmonton, Alberta, as an air-center to Alaska and beyond.

Interdependence has taken on new meanings in terms of time, space, and control. The controls exercised in a country of small population along the Atlantic seaboard differ radically from a complicated country with many dependencies upon the whole world. Units stressing these understandings obviously contribute to international understandings. It

[18] "Air-Age Education in the Elementary School," *National Elementary Principal*, Vol. 28, December, 1948, pp. 1-35.

Harold C. Hand, *Living in the Atomic Age: A Resource Unit for Teachers in Secondary Schools*, Educational Research Circular No. 57 (Urbana, Illinois, University of Illinois, 1946), 59 pp.

Stanford University School of Education, *Aviation Education Source Book* (New York, Hastings House, 1946), 855 pp.

is important that the necessary relationships be shown. Air-age geography in isolation is not adequate; it must be related to its larger implications.

The airplane in the primary grades can be studied as another means of transportation and in connection with workers. The correlations with science are numerous.

Community school. Continued stress is placed on the ideas further developed by those concerned with an environment-centered curriculum. The major ideas are:

1. First hand contact and experiences provide one of the best bases for learning.
2. Social learning requires participation. Socially useful activities afford a real opportunity for pupils to make a contribution to their school and community.
3. The quality of living in a community should improve because of the presence of the school which the community supports.
4. The school has the opportunity for continuous coöperation with many agencies in the community.[19]

The community has been utilized best in the primary grades. Here the opportunities and need for direct experience are clear. Participation in socially significant experiences was best done during World War II, though there is an increasing number of descriptions of peace time projects available.[20]

Improvement of the environment—housing, food and clothing. Closely related to the concepts developed by those interested in the community school movement is the Sloan Experiment in Applied Economics. The concept directing the experiments is that the school can improve the immediate living in the community. The original experiment selected three problems and three centers. Each center worked with teachers in this area. The University of Kentucky dealt with food, the University of Florida followed with housing, and the University of Vermont concerned itself with clothing.

The evidence from the experiment indicates that the school's instruction in methods of improving personal and family economic conditions will actually raise the level of living in the community. Considerable reading material for pupils has been produced dealing with local needs. The program has been extended to other teacher training institutions to help prepare teachers to analyze local community needs and to direct instruction in improving the level of local living.

[19] Edward G. Olsen and others, *School and Community* (New York, Prentice-Hall, Inc., 1945).

National Department of Elementary School Principals, *Community Living and the Elementary School,* Twenty-fourth Yearbook, *National Elementary Principal,* Vol. 25, September, 1945.

[20] In the bibliography see Arndt, *Large Was Our Bounty,* Chatto and Halligan, Department of Elementary School Principals, Educational Policies Commission, Ninth and Sixteenth Yearbooks of National Council for the Social Studies, Olsen, and Olson and Fletcher.

The questions submitted to themselves by some faculty members at Mount Pleasant, Michigan, are useful for any faculty: [21]

1. If it were in your power to change this community, what changes would you make?
2. What needs have the people in this community?
3. What plan of action would you suggest that the schools undertake to meet these needs?
4. What changes in the curriculum would you make so as to meet these needs?

Included in the same reference is a useful sequence of objectives, activities, and materials relating to food, clothing, and shelter from grades one to six as developed by the Auburndale School in Florida.[22] Every school can utilize experiences which will give boys and girls insight into the problems of concern to their community and state.

Economic understandings. Consumers—and all of us are—have two basic needs: first, to develop a sense of values to decide which of various needs or desires are most important; and second, to develop habits, attitudes, and techniques for critically evaluating the choice of ways to reach the objectives decided upon. Experiences must be directed toward helping boys and girls get more of the finest in life with their resources.

The close relationship between the work of the Sloan Foundation and the improvement of economic understanding or consumer education can be clearly seen. The best materials available are an outgrowth of the Sloan Foundation experiments and the Consumer Education Study sponsored by the National Association of Secondary School Principals.[23]

Improvements in the teaching of American history. In answer to certain pressures, several of the groups interested in social studies published suggestions of value which can be adapted to a broad program of social studies.[24]

American history is peculiarly qualified to further an understanding of the "One World" concept. American history tells the story of the birth and development of a nation characterized by the merging of many loyalties into a common loyalty to a political unit currently composed of forty-eight States and varied overseas possessions. Out of the successful struggle for national unity in the United States has emerged the proof that peoples of many nations, races, and creeds can live together and work side by side in a decent, orderly society. American history also offers a living demonstration of the rich potentialities

[21] Clara M. Olson and Norman D. Fletcher, *Learn and Live* (New York, Sloan Foundation, 1946), p. 93.

[22] *Ibid.*, pp. 76-87.

[23] The most helpful references in addition to the Sloan Foundation Studies are:
Consumer Education Study, *Consumer Education in Your School* (Washington, D. C., National Association of Secondary School Principals, 1947).
National Council for the Social Studies, *Economic Education, Eleventh Yearbook* (Washington, D. C., National Council for the Social Studies, 1940).
"Consumer Education in the Elementary School," *National Elementary Principal,* Vol. 27, February, 1948, pp. 1-33.

[24] National Council for the Social Studies, *The Study and Teaching of American History* (Washington, D. C., The Council, 1946). Adapted from pp. 8-9.

of the federal system, of the tradition of coöperation, and of man's long struggle for a larger measure of freedom.

Each faculty can do considerable analysis of the program offered in American history. Too often the objectives to be obtained are taken for granted. Here especially will careful analysis of the purposes to be achieved pay dividends in producing better informed and motivated citizens.

III. WHAT SOCIAL SITUATIONS ARE VITAL TO THE CHILD?

An acceptance that one purpose of education is "to enable the child to meet more effectively situations involving social relations," implies the need to determine social relations which are vital. Such social relations can be considered as being of two types for purposes of analysis. First, those situations involving the direct or personal relations of the individual to the various immediate groups of which he is a member. Second, those situations in which the individual is concerned as only one member of "a more remote group."

Personal relations. Direct relations of the individual to the various immediate groups of which he is a member are those that require:

Getting along with playmates
Being a member of a family
Working with others at school
Participating with others in church, clubs, games

On the adult level the scope of such social contacts has widened. Basically there is little fundamental difference caused by maturity level. Involved at all levels are the problems of getting along with others and making a maximum contribution to the group. Situations in which the individual is a contributing member of a larger group involve the social, political, and economic problems of the government and non-government groups of which he is a member. The former can be thought of as the personal problems of relationships and the latter as the social problems of society. Though this delineation represents an obvious over-simplification of the problem, it is helpful in discussing the two types of situations.

Important? Supporters of history, geography, or "racial heritage" challenge the use of personal and social problems as a basis for determining the curriculum of the social studies. They say that "important materials are being entirely neglected." The crux of the controversy hinges on the definition of the word *important*. Is it important because it will enable the child to meet situations involving social relations more effectively, or is it important in the organization of a body of knowledge of a given field of scholarship?

Racial heritage has a most important contribution to make. It is to enable the pupil to understand and to appreciate more fully present problems. As such, racial heritage will probably make its greatest contri-

butions to the social problems. However, there are many opportunities to utilize racial heritage in a better understanding of still unexplored personal problems.

Actually as school programs have changed from a subject-matter organization to one utilizing experiences involving social relations, the social type of problem has received practically all of the emphasis. Only in a relatively few localities have "personal" problems been given consideration. An exception to this last statement can be made on the kindergarten level and increasingly on the first- and second-grade levels. The kindergarten teacher, not restricted by imposed subject-mastery requirements, has realized that her most important job is to help children get along with one another. Thus it is that coöperativeness and consideration have been among the desired outcomes of the kindergarten.

Some possibilities. There is relatively little material available to aid in the selection of the most important personal experiences for the elementary-school child, although suggestions are available on problems of preschool youngsters.[25] The adolescent has also been the subject of much study, but in comparison relatively meager information [26] is available on the problems of children from six to twelve years of age. Yet these second six years of a child's life rank next only to the first six in providing a basis for life adjustment.

The material which is available suggests:

Problems involved in physical responses
in expressional responses
in mental responses
in moral and religious responses
in emotional responses
in social responses

Each of these areas could be subdivided into a number of parts, for instance problems involved in social responses relate to:

Need for prestige
Need for security
Need for satisfactory attainment
Need for conformity
Need for association with others
Need for self-reliance and control

Many studies have been made of problem children,[27] but relatively few have discussed the problems of children.[28] The two are far from

[25] Typical of such material is the material issued by the Institutes of Child Welfare and Development at Iowa, Minnesota, Yale, and Teachers College, Columbia University.

[26] Much that is available has been discussed in Chapters 2 through 5, especially in Chapter 3.

[27] For a summary of a number of such studies see George D. Stoddard and Beth L. Wellman, *Child Psychology* (New York, The Macmillan Company, 1934), Ch. XV.

[28] On the adolescent level such as Percival M. Symonds, "Life Problems and Interests of Adolescents," *School Review*, Vol. 44, September, 1936, pp. 506-518.

synonymous. The former studies yield most valuable information as to difficulties so extreme as to result in serious conflict with the social group. The latter, such as the study of *Children's Fears,* by Jersild and Holmes, yield information valuable for guiding all children.

Two contributions. The social studies can make two contributions in enabling children to better meet their "personal" problems. First, by doing something directly about the problem. An untried possibility is in dealing with the fears of children. Fears would constitute one subdivision of problems involving emotional responses. A classified list of fears reported by children is given in Table VI. The school could do much in the areas of imaginary creatures, imaginary or remote animals, fearful characters, characters in stories and movies, and animals, to dispel such fears. These causes of fear constitute 45 per cent of the total causes. Imaginary creatures might be stressed on the primary level, whereas remembered characters would be more suitable for older children.

TABLE VI

RELATIVE FREQUENCY OF FEARS AS REPORTED BY CHILDREN 5 TO 12 *
(The figures are percentages.)

Feared Situation	*All Children*	*Age Groups (in years)*			
		5–6	7–8	9–10	11–12
Number of Children	398	99	100	100	99
Number of fears	772	161	236	182	193
1. Danger or threat of bodily injury, harm, confinement, fights and attacks by others, fire, sight of fighting, dangers of traffic, diving, etc.	11.9	7.5	10.6	15.9	13.5
2. Imaginary creatures, ghosts, bogeys, witches, etc.	10.0	19.3	11.4	4.4	5.7
3. Robbers, burglars, murderers, kidnappers, etc. (in absence of actual contact with such characters)	9.5	14.9	10.2	7.7	5.7
4. *a.* Remote or imaginary animals (lions, wolves, etc.)	9.2	14.9	9.7	7.7	5.2
b. Animals (not including imaginary animals or remote creatures such as lions, tigers, wolves, etc.)	8.2	12.4	8.5	3.8	8.3
5. Characters met in or remembered from stories, radio programs, moving pictures	8.4	3.1	8.5	9.9	11.4
6. The dark, being alone in dark, imaginary animals and characters feared in connection with darkness	6.9	2.5	8.1	5.5	10.4
7. Gestures, activities, noises, tales, apparently deliberately designed to frighten	5.7	3.7	6.4	6.6	5.7
8. Fears arising during dreams of fear of dreaming	5.6	4.3	5.9	6.6	5.2

* Adapted from Arthur T. Jersild and Frances B. Holmes, *Children's Fears,* Child Development Monograph, No. 20 (New York, Teachers College, Columbia University, 1935), p. 152.

TABLE VI (*Continued*)

RELATIVE FREQUENCY OF FEARS AS REPORTED BY CHILDREN 5 TO 12
(The figures are percentages.)

Feared Situation	*All Children*	*Age Groups (in years)*			
		5–6	7–8	9–10	11–12
Number of Children	398	99	100	100	99
Number of fears	772	161	236	182	193
9. Mechanical or vocal, proximate or distant noise; agents of noise, thunder	3.9	1.2	3.4	7.7	3.1
0. Pain, painful situations, persons specifically inflicting pain, medical situation, operations, events associated with pain	3.4	2.5	1.7	4.9	4.7
11. Strange persons (actually met as distinct from robbers, burglars, kidnappers, etc., with whom child has had no direct contact); also masked figures, deformed persons	2.5	3.7	3.4	1.1	1.6
12. Death, funerals, corpses, matters connected with dead people	2.5	3.1	2.5	2.7	1.6
13. Being abandoned by parents, illness or death of relative	2.1	1.9	.84	2.7	3.1
14. Being alone, imaginary animals or characters feared when alone	1.9	1.9	.84	2.2	3.1
15. Failure, apprehension over personal inadequacies, personal appearance, ridicule; also fear of meeting and appearing or performing before people	1.6	.62	.84	2.2	2.6
16. Apprehension over possible punishment for misconduct, fears due to warnings	1.6	0	1.7	2.2	2.1
17. Falling and loss of support, danger of falling, high places	1.4	0	1.7	1.1	2.6
18. Lights, flashes, shadows, reflections, sudden disappearance of persons, lightning	1.0	.62	1.3	1.1	1.0

Another example of directed teaching is given in a study by Stiles.[29] Six classrooms from grades four to six were involved. Each room had a room council which considered infractions of rules. Would direct study of behavior through stories and discussion result in improvement in the individual student's assignment of punishments? She used three stories involving (1) aggressive behavior arising from need for physical activity, belongingness to the group, to do something worthwhile and to avoid insecurity; (2) teasing and bullying; and (3) trespassing. These stories

[29] Frances S. Stiles, *A Study of Materials and Programs for Developing An Understanding of Behavior at the Elementary School Level,* an unpublished Ph.D. dissertation, State University of Iowa, 1917.

were read and then discussed from the standpoint of "why a child behaved as he did."

This direct method of analyzing behavior was effective, for she found a significant improvement in each class. This improvement was evidenced in the students' assignments of reasons for punishments. This study is an indication that we need a great deal more research on the helping of students to understand behavior.

The second contribution that can be made toward this end is the provision in the school situation of those elements which make for good mental health in youngsters. These elements are: [30]

1. Play and other recreational activities, especially with children of the same age
2. A variety of wholesome, useful, and interesting activities
3. Home and school environment free from worry, strain and emotional upheaval
4. Useful habits and skills
5. Providing opportunity for freedom and responsibility
6. Opportunities to develop self-confidence and self-control

The reorganization of elementary education which is taking place is much more in the direction of providing these elements than was the school whose purpose was subject mastery alone. A beginning of utilizing this point of view is developed for each grade in the Virginia course.[31]

Social relations. In contrast, social problems offer so much material that the important factors are selection, delineation, and classification. The differences in the selection are obvious in the resultant courses of study. There is some slight agreement in the first two years, but following those it would appear to be a case of "every course for itself." A survey of courses will reveal that in the third grade practically everything from local history through Indians to the ancient Greeks is offered. Many of the differences are discussed in section VI of this chapter.

The most helpful analyses of social problems have been made recently in connection with the "social functions" courses. The approach used in the social-functions courses was to determine the major areas of human activity. Comparisons between some of these lists can be seen on page 330.

A further analysis of these areas in connection with the Mississippi curriculum program resulted in identifying some of the most important problems in each of these areas. This list which was prepared by Frederick and Farquear should be of considerable help, both in the teaching process and in selecting curriculum materials. It is only possible to reproduce

[30] Adapted from Fowler D. Brooks, *Child Psychology* (Boston, Houghton Mifflin Company, 1937), pp. 497-500. For an application of these two contributions in a social-studies program see *A Guide for Planning the Social Studies Experiences of Elementary School Children* (Wisconsin, Wauwatosa Public Schools, 1939).

[31] Virginia State Department of Education, *Course of Study for Virginia Elementary Schools* (Richmond, Virginia State Department, 1913).

the major areas of human activity with the problems indicated. A more detailed discussion can be found in the original source.

AREAS OF HUMAN ACTIVITY WITH THEIR MAJOR PROBLEMS [32]

Protecting Life and Health

1. Making the school environment more healthful and safe
2. Coöperating with health agencies for a more healthful community
3. Practicing habits of personal hygiene
4. Preventing and controlling disease
5. Protecting life from accidents
6. Securing and maintaining mental and emotional health
7. Protecting the physical and mental health of industrial workers
8. Protecting the consumer from fraudulent and harmful medical goods and services
9. Developing an adequate medical service for all persons at a reasonable cost
10. Promoting and utilizing medical research
11. Conserving and increasing the racial vitality of the American people

Making a Home

1. Carrying on the socializing functions of the home
2. Carrying on the consumer-economic functions of the home
3. Carrying on efficient management of the home
4. Carrying on the biological functions of the home
5. Adjusting to trends and changes in the home
6. Stabilizing the home
7. Extending family boundaries by promoting the child-welfare movement

Conserving and Improving Material Conditions

1. Using and controlling fire, heat, and light
2. Making adjustment to geographic factors
3. Gaining protection against natural catastrophes
4. Improving plant culture
5. Improving animal culture
6. Improving and conserving land
7. Relating the earth to other bodies in the universe
8. Developing and conserving the natural resources within the earth
9. Making and using machines
10. Developing and using power
11. Creating a new type of physical environment by inventions and adjusting man to it
12. Conquering time and space through transportation inventions
13. Conquering distance through communication inventions
14. Organizing and encouraging a balanced program of scientific research in the interests of society as a whole

Coöperating in Social and Civic Action

1. Participating in non-political community affairs
2. Fulfilling one's rights and duties as a good citizen
3. Improving relations with minority race groups
4. Developing a definite population policy

[32] O. I. Frederick and Lucile J. Farquear, "Problems of Life," I and II, *School Review*, Vol. 46, May, June, 1938, pp. 337-395, 415-422.

5. Financing the government's operations
6. Voting intelligently
7. Providing and observing law enforcement
8. Coöperating in political governmental functions
9. Establishing and improving international relations

Getting a Living

1. Producing and preparing goods
2. Exchanging goods
3. Engaging in professions and service occupations
4. Consuming goods intelligently
5. Providing for a more nearly equal distribution of national income, wealth, and resources
6. Providing for proper care and use of money and monetary values
7. Choosing a vocation
8. Improving the agricultural situation
9. Protecting and improving conditions of labor
10. Determining the scope and control of economic freedom
11. Maintaining balance in our economic system while adjusting to machinery
12. Making our economic organization more efficient and more secure

Securing an Education

1. Making the most of one's educational opportunities
2. Extending educational opportunity to all
3. Providing adequate school facilities
4. Financing education
5. Improving the administration of schools
6. Deciding on higher education
7. Continuing education after leaving school
8. Integrating all educational agencies
9. Changing the schools to meet the needs of a changing civilization
10. Preserving academic freedom

Expressing Religious Impulses

1. Enjoying spiritual elements in seasonal holiday activities
2. Choosing a personal religion
3. Applying religion to life
4. Participating in and promoting the activities of organized religion, the church
5. Enlarging the functions of the church
6. Promoting coöperation of various religious agencies
7. Promoting religious tolerance

Expressing Esthetic Impulses

1. Relating art to everyday life and experience
2. Expressing, reproducing, or enjoying beauty through the fine arts
3. Developing artistic hobbies
4. Supporting and utilizing agencies for the development of art
5. Developing good taste
6. Giving to all people more opportunity for esthetic expression and enjoyment
7. Designing new forms and types of art appropriate to new mechanical processes and new materials

8. Encouraging the contribution of the government to the fine arts
9. Developing international feeling through the fine arts
10. Relating art to business

Engaging in Recreation

1. Determining in what kinds of recreation to engage
2. Supporting and coördinating the organizations concerned with the recreational needs of society
3. Adjusting to changing forms and needs of recreation
4. Making recreation more available to all people
5. Controlling and improving commercial amusements

As with the other elements discussed in this chapter, problems of life do not furnish an organization of the social-studies curriculum. They do, however, furnish material that needs to be definitely considered in organizing a social-studies program.

The total picture. From the discussion in this section an implication might be drawn that the social-studies curriculum should be organized solely in terms of problems or situations involving social relationships. Such, actually, is not the case, for there is much more involved in making the child more effective in meeting situations than merely knowing the situations which he is meeting or will meet. One of the clearest portrayals of these phases of meeting situations appears in the former Texas course of study.[33] There are set forth the five phases involved in this concept of a social-studies program.

Using Table VII, it can be made clear that as the individual or the group meet situations which involve human relationships, it is necessary to resort to certain processes (col. 4). These processes involve the utilization of ideas or concepts (col. 5) in order that the functions (col. 2) may be performed in the several areas (col. 3).

First — The individual learner.
Second — The things that people do as individuals and as members of groups, tend to gather into certain groups designated as *functions.*
Third — The functions are performed in certain *areas,* such as that of the home.
Fourth — The performance of the functions in certain areas necessitates resorting to certain *processes* such as that of thinking.
Fifth — The resorting to certain processes involves the utilization of ideas, data, and subject-matter. These may be organized in certain groups of *significant ideas.*

Another approach which appears to offer much of significance is Marshall's "social process" approach.[34] This process is not to be confused with the ones mentioned in the Texas course, for they are not comparable. It

[33] State Department of Education, *Tentative Course of Study for Grade One Through Six* (Austin, Texas, 1936), p. 144.

[34] Leon C. Marshall and Rachel Marshall Goetz, *Curriculum-Making in the Social Studies,* Report of the Commission of the Social Studies, American Historical Association (New York, Charles Scribner's Sons, 1936), pp. 12-13.

is omitted here for its value is mostly in curriculum construction rather than for the teaching process.

TABLE VII

A PERSPECTIVE OF THE ENTIRE SOCIAL-STUDIES PROGRAM *

1	2	3	4	5
The Maturing Child	*Functions Involving Social Relations*	*Areas in Which the Functions Are Performed*	*Necessary Processes*	*Groups of Significant Ideas*
Interests Needs Abilities	Producing Distributing and consuming Communicating and transporting Controlling Achieving mental and physical health Recreating Experiencing and expressing the beautiful and useful Learning	Home School Community	Thinking Coöperating Utilizing a meaningful perspective of the contemporary world	Democracy Interdependence Change Values Adaptation Control over nature Shifting population

* Adapted from *Tentative Course of Study for Grades One Through Six, op. cit.*, p. 145.

IV. WHAT ARE UNDERSTANDINGS AND CONCEPTS, TECHNIQUES AND ABILITIES, AND ATTITUDES ESSENTIAL IN MEETING SITUATIONS?

Isolated facts are of themselves of little value. It is only when several facts are combined to contribute to a concept, understanding, or generalization that they are valuable. The development of understandings alone is not sufficient; the attendant knowledges, skills, and attitudes are also important.

A study of the books dealing with the teaching of social studies, courses of study, and textbooks yields a large number of specific understandings, skills, and attitudes. It might seem the logical plan to divide these objectives among the various units. The difficulty is that in general, the more important understandings, abilities, and attitudes cannot be handled in such a manner. Understandings become increasingly complex as the child matures; finer and finer shades of meaning are attached to them. For the first-grade child it may be limited to the idea that dad (or mother) is responsible for obtaining food and clothing for him, whereas on the eleventh-grade level the pupil would realize that all peoples are linked together in a most complex manner, and that his life may be affected by peoples thousands of miles away. On the graduate level the complex

pattern of interdependence, its implications, and its control would be much clearer.

Most abilities are ever widening in character. The ability to locate information on the first-grade level may be limited to locating a given story in a book. The fourth-grade child may be able to use the index, whereas on the graduate level his techniques will be such that he should be able to locate practically all available material on a topic. Attitudes are similar to the extent of finer and finer differentiations on increasing maturation levels.

Concepts and understandings. Our understanding of concepts is being rapidly widened. Experimental studies are furnishing definite data on their development in children. Teacher experience is helping to determine properly when certain concepts should be emphasized. Courses of study are indicating some of the larger concepts which curriculum-makers deem important. Experts in the social sciences are contributing comparable lists they consider essential. From these sources must come the teacher's understanding of the rôle of concepts in the social-studies program.

Correct and incorrect concepts. Experimental evidence offers considerable knowledge of how concepts are developed. Several studies in the field of science [35] are especially valuable for illustrating increase in the scope of generalization with maturity. In the social studies Lacey [36] presents interesting data on the growth of certain concepts in primary children. She determined the extent pupils in grades one to three were familiar with a number of concepts such as mother, policeman, wigwam, dress, sheep, winter, radio, and saving money. For each item she obtained several reactions which contributed to the extent to which the child had a total correct concept of the object in question. For instance, to be credited with completely understanding sheep, the child had to know that:

It was a farm animal, not a wild animal.
It gives us wool for our clothes.
It was covered with fur and wool rather than short, stiff hair.
We must feed and care for it if it is to live.

The continuous development in children's concepts which she found offered encouragement for the instructional program. However, the high percentage of misconceptions which was evident showed that all phases of a concept need to be stressed.

The next step is to develop means of determining to what extent indi-

[35] See such studies as George W. Haupt, *Experimental Application of a Philosophy of Science Teaching in an Elementary School*, Contributions to Education, No. 633 (New York, Teachers College, Columbia University, 1935).

W. C. Croxton, "Pupil's Ability to Generalize," *School Science and Mathematics*, Vol. 36, June, 1936, pp. 627-634.

[36] Joy M. Lacey, *Social Studies Concepts of Children in the First Three Grades*, Contributions to Education, No. 548 (New York, Teachers College, Columbia University, 1932).

vidual pupils generalize. The concept *boat* may merge in the larger concept *transportation* and then into the concept of *interdependence.* With a number of courses of study built around larger concepts or themes such as *interdependence* and *control,* numerous illustrations of subject-matter from such courses are available for conducting such a study.[37]

Some too difficult. Related to the problem of developing understanding is evidence from a study by Adelaide Ayer.[38] She shows definitely that one source of pupil inability to comprehend material from fifth-grade histories was the difficulty of the paragraphs. However, the stronger implication of her data is the suggestion that pupils do not comprehend the "ideas" involved. Comparable evidence from the subject-matter of geography is also available.[39]

Instructional activities and experiences may be heavily overloaded with concepts which are "a far cry" from the needs of the child. Torrid, temperate, and frigid zones are pertinent illustrations.

Lists of generalizations. Some courses of study have utilized the generalizations as directive factors within the course. Four such courses[40] yield the following composite list of concepts:

Interdependence
Adaptation to environment
Adaptation to change
Control over nature
Population (migration of peoples in search of improved conditions of living)
Coöperation
Culture
Democracy—social, economic, political

[37] See various issues of *Review of Educational Research* listed in bibliography. Also Leo J. Alilunas, "A Review of the Research on the Historical Concepts of American Children," *Educational Administration and Supervision,* Vol. 31, September, 1945, pp. 331-344.

Kopple C. Friedman, "Time Concepts of Elementary School Children," *Elementary School Journal,* Vol. 44, February, 1944, pp. 337-342.

Arthur T. Jersild and others, *Child Development and the Curriculum* (New York, Bureau of Publications, Teachers College, Columbia University, 1946), 274 pp.

Sina M. Mott, "The Development of Concepts: A Study of Children's Drawings," *Child Development,* Vol. 7, June, 1936, pp. 144-148.

National Society for the Study of Education, *Child Development and the Curriculum, Thirty-Eighth Yearbook,* Part I (Bloomington, Ill., Public School Publishing Company, 1939). Especially Chapter XV on "Social Studies" by Kai Jensen.

[38] Adelaide M. Ayer, *Some Difficulties in Elementary School History,* Contributions to Education, No. 212 (New York, Teachers College, Columbia University, 1926).

[39] Alison E. Aitchison, "Torrid, Temperate, and Frigid Zones—Source of Error in Children's Thinking," *Thirty-Second Yearbook* of the National Society for the Study of Education (Bloomington, Ill., Public School Publishing Company, 1933), pp. 483-485.

[40] Des Moines Public Schools, *Course of Study in Social Studies,* Grade III (Des Moines, Iowa, 1935), pp. 9-21.

Houston Independent School District, see any recent social-studies unit.

Fort Worth Public Schools, *Social Studies* (Fort Worth, Texas, 1933). See any bulletin, Grades I-VI.

Wilmington Public Schools, *Coöperative Curriculum Revision* (Wilmington, Delaware, 1935), pp. 45-46.

Several valuable lists of concepts have been developed by experts. One compilation was prepared as a basis of correlation for English teachers by social-science specialists.[41]

SIGNIFICANT CONCEPTS FROM SOCIAL SCIENCES

1. The enormous age of human culture (especially of the prehistoric life of mankind) and the extreme recency of most things—railroads, telegraphy, telephones, automobiles—that are conspicuous in our civilization
2. The unity of man with the rest of living nature and his subjection to the same fundamental laws
3. The concept of change, involving the idea of progress, and especially of the progressive humanization of Man
4. The unity and continuity of cultural evolution
5. Man's machinery; that is, his body and organs
6. The essentials of man's heredity
7. The fact that all races and peoples have some culture of their own and that many excel in particular arts and activities
8. The need, therefore, for a sympathetic consideration of alien groups
9. The history of the foundation of the various nations, particularly those of the white race
10. The composition of and anthropological developments in the American people
11. The idea of history as representing what Hegel calls the ultimate design of the world
12. The relation of great personalities to the total social situation of their respective ages
13. The concept of contingencies and choices which have been, might have been, and may now be made
14. The causes of economic conflict
15. The encouragement of scientific method in social affairs, and the value of analysis and statistical measurement in studying social culture and social change.

It would be possible to develop the beginnings of practically all of these concepts in the elementary school. A careful study of the concepts shows many of the relationships between what have been considered separate areas, social studies and science.

One of the most challenging lists from which concepts can be drawn is proposed by Rugg[42] under two main headings:

I. Basic Characteristics and Trends of Human Societies on Earth To-day
   [Emphasis on western society]
   The culture of peoples
   Industrialism
   Accelerating change
   Changing standards of living

[41] Ruth Mary Weeks, chairman, *A Correlated Curriculum*, a publication of the National Council of Teachers of English (New York, Appleton-Century-Crofts, Inc., 1936), p. 15.

[42] Harold Rugg, *American Life and the School Curriculum* (Boston, Ginn and Company, 1936), Ch. XXIII.

Loss of worker's control
National competition
Economic nationalism
Changes in population
The democratic experiments
New controls over the public mind

II. Problems and Issues of Modern Civilization
Economic problems
1. Purpose of economic system
2. Problems of the production system
3. Problems of distribution
Problems created by individualism in business and government
Problems of nationalisms and internationalism
Proposals for reconstruction
Urgent social problems

He suggests that the concepts involved in the characteristics and trends offer vital bases for elementary and junior high-school programs of social studies whereas the issues of civilization are most profitable for senior high school and college.

A list of intriguing generalizations appears throughout the Virginia Course of Study as basic aims for each grade.[43] The combination of materials from various subject areas appears as an obvious procedure if these generalizations are utilized as a basis for selecting experiences.

An interesting treatment of concepts is provided by Wesley. He points out that the broad concepts such as interdependence and adaptation are adult and educator's categories and not social concepts for children. He identifies concepts for elementary pupils as *words,* which point directly toward human relationships. He groups them into the following classes: [44]

1. Social action (thank, join, spend, rise)
2. Social process (listen, serve, live and change)
3. Social condition (poor, success, lost, peace)
4. Social status (public, gentleman, officer, known)
5. Social communication (laugh, news, write, history)
6. Social entity (boy, system, shop, human)
7. Social group (army, family, British, national)
8. Social quality (good, fair, kind, truth)
9. Social relationship (father, enemy, own, neighbor)
10. Social institution (court, college, war, industry)
11. Social instruments (farm, road, power, music)
12. Time
13. Place

Elaboration of a concept. One of the better presentations of concepts appears in the Des Moines course. A general statement of the concept is made; then follows an interpretation of the significance of the concept to

[43] Virginia State Department of Education, *Course of Study for the Virginia Elementary Schools,* Grades I-VII (Richmond, Va., 1913).

[44] Edgar Wesley and Mary A. Adams, *Teaching Social Studies in Elementary Schools* (Boston, D. C. Heath & Company, 1946), p. 292.

society and to the individual. Aspects which have been touched in previous grades are listed as well as aspects which may be treated in later grades. An illustration of the procedure is from the third grade.[45]

ADAPTATION TO CHANGE

Life is growth and because of its dynamic character brings changing conditions which man is called upon to meet.

(Significance to society)

Intelligent adjustment to changing conditions is essential if society is to develop progressively.

(Significance to the individual)

The individual must be aware of social trends, understand their causes, and adjust to them intelligently, if he is to contribute significantly to this progressive development of society.

(Aspects of this concept which have been treated in kindergarten, grade one, grade two, and grade three)

a. Change of environment tends to change the mode of living.
b. Industries change in response to changing conditions.
c. Competing and supplanting products, new processes, and new services bring a necessity for change and vice versa.
The needs for communication between more and more people have been met by new postal services and by federal supervision of them.
d. Coöperation and competition between groups force changes.
e. The industrialization of the United States has brought the necessity for new and constantly changing plans for subsistence.
f. Rapidity and complexity of changes demand independent thinking, self-analysis, and an elementary knowledge of his own mental processes as aids to the individual in adapting himself to these changes.
g. The social world is evolving out of its past.
The increasingly complex group life of humankind makes necessary increased provision for civic protection of individuals.

(Aspects of this concept which may be treated in later grades)

a. Extreme resistance to change and unwillingness to make adaptations result in heavy penalties. (China, the Old South.)
b. Industrialism and intense competition are changing the methods and plans of introducing young people into their vocations.
c. Changing ideas and industrialization have affected the status of women and have tremendously extended their sphere of action.
d. Long-time industrial and social planning is needed for the benefit of society as a whole to aid in meeting the conditions implicit in change. (The coordination of production and distribution; assimilation of primitive and foreign-born peoples in our society in such a way as to be of cultural advantage to all.)
e. The cultural heritage of peoples gives a color or set to their way of thinking, their method of transforming the transformable, and their method of adapting themselves to the natural features of an environment.

[45] Des Moines, *op. cit.*

Summary. Confusion due to the variety of generalizations presented, can possibly be avoided by itemizing some concepts concerning concepts.

1. To "understand" a situation, is: [46]
   - To grasp its significant meaning
   - To identify its elements
   - To know what the facts in it signify
   - To see the relations among its important aspects
   - To detect its central ideas
   - To be able to think through the problem it presents
   - To be able to generalize, or draw inferences from its data
   - To evaluate its importance
   - To adopt appropriate attitudes
2. Concepts develop gradually.
3. Children entering school have many more concepts than are usually recognized.
4. A wide range of individual differences among children exist in the concepts held as in other traits.
5. For a given concept a given child has some correct and some incorrect understandings involved in the concept.
6. Levels of understandings are a helpful approach to thinking about the problem. A classification of possible levels is:

"*a.* On the simplest level: acquiring facts and information—that is, getting meanings and making habitual responses, taking appropriate bodily and mental attitudes.

b. On a somewhat more complicated level: all the foregoing plus recognizing and solving problems, thinking, reasoning, generalizing, seeing relations, with corresponding 'scientific' experimental attitudes.

c. On a still more complicated level: all the foregoing plus attitudes of weighing values, making practical personal decisions, predicting future events, estimating probable outcomes." [47]

7. Thus complete mastery of a concept can only be approached.
8. Increasingly widening concepts should be the purpose of the teacher. The evolution from *boat* to *transportation* to *interdependence* illustrates the process of development.
9. Relatively little is known concerning the age at which it is possible for children to understand certain phases of various concepts. The teacher must be constantly alert to extend pupils' understandings.
10. A number of situations should be used for developing concepts. The reverse is also true; concepts should be applied in a number of situations for the purpose of generalizing.
11. Concepts are interrelated and growth in one depends upon others.

Techniques and skills. Here as with concepts, there appears a number of lists of techniques which the social studies have primary responsibility for developing. Too often it is felt that a given skill must be mastered by all children in a given grade. As understandings develop gradually, so do skills.

The striking challenge to teachers in the following list of skills from

[46] These items under 1 are quoted from Rugg, *op. cit.*, p. 308.
[47] *Ibid.*, p. 309.

Wesley lies in developing the processes of thinking which are implied in the list.[48]

Study Skills

Reading and study involve the finding of a great variety of sources and skill in using them. In the social studies the study skills may be divided into five groups, which really constitute steps in study and learning. In the following list each of the five main steps is subdivided into a number of illustrative sub-steps or special skills.

I. *Locating Information*
1. Library catalogue
2. *Readers' Guide*
3. Yearbooks, such as *World Almanac*
4. Encyclopedias
5. Dictionary
6. Bound periodicals
7. Guides, timetables, folders
8. Newspaper files
9. Digests and reviews
10. Atlases
11. Maps
12. Bibliographies, separate and in books
13. Pictures, still and motion
14. Records and recordings
15. Collections of clippings
16. Telephone directories
17. Government directories, local, state, and national
18. Models and specimens
19. Series and sets in the social studies

II. *Techniques of Using Materials*
1. Significance of title page
2. How to use a table of contents
3. Using lists of illustrations
4. Significance of preface
5. Use of learning aids
6. Using an index
7. Using dictionaries
8. Using encyclopedias
9. How to use maps
10. How to interpret graphs
11. Reading charts and tables
12. How to read a picture

III. *Process of Studying Materials*
1. Reading for various purposes
2. Learning new words
3. Recognizing abbreviations and symbols
4. Taking notes
5. Outlining, summarizing

[48] Edgar Bruce Wesley and Mary A. Adams, *Teaching Social Studies in Elementary Schools* (Boston, D. C. Heath and Company, 1916), pp. 281-285.

6. Transferring data from maps
7. Identifying main points
8. Shifting viewpoints
9. Analysis of contradictions
10. Standing of publisher
11. Recency of materials

IV. *Appraising Materials*

1. Distinguishing sources and secondary accounts
2. Reliability of the author
3. Serious and popular treatments
4. Accuracy of the account
5. Separating facts and opinions
6. Adequacy of proof
7. Tentative nature of conclusions

V. *Utilizing Results*

1. Preparing reports
2. Clearing up problems
3. Organizing events in sequence
4. Organizing results
5. Drawing conclusions
6. Making deductions
7. Making generalizations
8. Setting up periods, classes, groups
9. Establishing causal relationships

Another valuable list is in the Virginia Course of Study. A chart of abilities is given with the grade levels indicated on which instruction is to be emphasized. The abilities are described in specific behavior terms, which makes them more meaningful to teachers.[49]

AN EXAMPLE OF AN ABILITY DESCRIBED IN TERMS OF BEHAVIOR

Ability to Function as a Wise Consumer
To choose wisely consumable materials, such as foods, clothing, and shelter
To compare the quality and price of articles bought at stores
To judge the merits of claims made by advertisers of articles or services for sale
To use money wisely
To take care of personal property such as school materials and clothing
To take care of public property
To conserve natural resources: forests, game, song birds, etc.
To understand and enjoy creative works, modern and historical:
in architecture, sculpture, and painting
in the graphic arts
To make wise use of time

A caution. The change in teaching procedures from the use of one textbook to many sources of information has made teachers conscious of the need to teach children how to locate material. This need is so apparent that many teachers are doing a splendid job in training youngsters

[49] Virginia State Board of Education, *op. cit.*, pp. 281-282.

in the techniques of locating information. *But* it is vitally more important that children be able to use the information in thinking. Yet that phase of the problem is overlooked only too often. The processes of thinking are the most important technique on the elementary level, not the process of locating information (as important as it is).

Attitudes. The school can be an effective agency in affecting attitudes of children. Evidence [50] indicates that greatest changes are made when the teacher is conscious of the problem of attitudes. Other studies suggest possibilities for doing much more through the use of other materials, such as moving pictures.[51]

Too often attitudes are thought of as something separate. Rugg points out the fallacy of this concept in his statement: [52]

> There must be an emotional matrix for understanding. This, the psychologist is coming to believe, is supplied by the complex reaction called attitude. Attitude is the general mental-motor set of the organism. Every situation is approached in the physical framework of a given attitude, and this must be appropriate to the other phases of the individual's reaction or the meaning will not be clear.
>
> These attitudes are emotionally colored; witness some characteristic themes:
>
> An attitude of sympathetic understanding
>
> The scientific attitude
>
> The attitude of meaningful orientation
>
> An attitude of confidence
>
> An attitude of affection
>
> Attitudes of respect, liking, approbation, disapproval, friendship, contempt
>
> ... meaning, concept, generalization, and attitude are merely names for the constituents of general understanding. These are not neatly set off one from another. They are fused, thoroughly integrated into the total reaction of the individual.

One of the most vital lists of attitudes which should be the concern of the school follows:

1. The Attitude of Inquiry
2. The Attitude of Creative Self-Expression
3. The Attitude of Self-Cultivation
4. The Attitude of Self-Integrity
5. The Attitude of Respect for Personality
6. The Attitude of Critical Mindedness
7. The Attitude of Directness
8. The Attitude of Open-Mindedness
9. The Attitude of Mental Integrity
10. The Attitude of Responsibility
11. The Attitude of Generalizing
12. The Attitude of Concentration
13. The Scientific Attitude

[50] John A. Hockett, "Curriculum Investigations: Social Studies," *Review of Educational Research*, Vol. 7, April, 1937, pp. 169-170. Also October 1941 and 1947 issues.

[51] Ruth C. Peterson and L. L. Thurstone, *Motion Pictures and the Social Attitudes of Children* (New York, The Macmillan Company, 1933).

[52] Rugg, *op. cit.*, pp. 326-327.

14. The Attitude of Tolerance
15. The Attitude of Working Harmoniously With Others
16. The Attitude of Relying Upon Orderly Methods of Gaining Social Ends
17. The Attitude of Respect for Constituted Authority
18. The Attitude of Constructive Participation in Social Life
19. The Appreciation of the Beautiful
20. The Appreciation of Human Nature
21. The Appreciation of Shared Activity
22. The Appreciation of High Standards of Conduct
23. The Appreciation of Humor
24. The Appreciation of the Achievements of Thinking
25. The Appreciation of Good Workmanship
26. The Appreciation of Nature

The original source has the outstanding characteristics of each attitude listed in this manner: [53]

The Attitude of Open-Mindedness
- The inclination to welcome suggestions and information relevant to all undertakings
- The urge to encourage diversity of thought and action in dealing with questions
- The disposition to be free from prejudice
- The desire to entertain ideas which may modify existing beliefs, and lead to new purposes
- The tendency to emphasize the quality of the mental process as well as the production of correct answers
- The inclination to respect the point of view of others
- The willingness to acknowledge existing ignorance in any situation

A blending. Learning is not merely a mathematical summation of knowledges, understandings, techniques, and attitudes. It is a unity and blending, a growth and development. Attitudes are the integrators of these elements and driving forces to action. Mere knowledge is not sufficient. It will not necessarily lead to understanding or action. The changing concept of the purpose of the social studies from "knowledge concerning the past" to "more effectively meeting situations involving social relations" has forced into the spotlight the means of attaining the purposes. The mastery of facts offers little when contrasted with the development of understandings, attitudes, and techniques.

V. BASIC GUIDING PRINCIPLES

The statements [54] in this section are valuable guides to the work of the teacher or the thinking of a committee at work on developing a course of study. Some of the statements are based on research; others are from

[53] Virginia State Board of Education, *op. cit.*, pp. 500-506.

[54] These have been adapted from a number of courses and discussions by Roger E. Guiles and the authors.

competent workers in this area; all are consistent with the point of view developed in this chapter.

1. Democracy is the fundamental pattern for group living for America.
2. A democratic society should have a democratic school system.
3. The social-studies program should be directed toward helping children to meet social situations more effectively.
4. The social-studies program should develop the beginnings of concern for important social and economic problems.
5. The social-studies curriculum should furnish experiences which lead children to an understanding and appreciation of life about them.
6. Social-studies experiences should be unified rather than separated into separate subject-matter compartments.
7. Experiences should be planned to furnish opportunities for the well-rounded development of all pupils.
8. Learning experiences should grow out of the present environment and aid in the interpretation of contemporary life.
9. The school is only one influence in the child's life and must participate in and utilize other environmental influences.
10. Methods should be used which furnish opportunity for a maximum of self-direction, self-appraisal, self-control, and coöperative endeavor.
11. Problems should be selected and developed so as to be within the understanding of pupils of the given age.
12. The social-studies program of every school needs to be continuously evaluated and revised in light of current research to meet changing needs, locally, nationally, and internationally.

VI. TYPES OF SOCIAL-STUDIES PROGRAMS

Programs of social studies are varied. There are nearly as many as there are school systems. They are of all kinds and types. The seemingly random application of scissors and paste has nearly made it impossible to distinguish types of programs.

Wesley and Adams discussed six formulas for selecting units, namely (1) the subject (i.e. American History, etc.), (2) comparative cultures, (3) the concept-process approach, (4) areas of living, (5) generalizations, and (6) problems.[55] However, in their chapter XIII the difficulty of clear-cut classification is obvious.

A few programs have been selected to illustrate the variety of types in current operation. First common agreements between courses have been listed. Then illustrations have been grouped under the following headings:

Center of interest and social function organization.
Concept or theme courses.
A course combining processes, functions, and concepts.
Freedom within goals.
Special emphasis.

[55] Edgar Wesley and Mary A. Adams, *op. cit.*, pp. 142-153.

The traditional separate subject organization has been omitted, though there is no lack of examples of this type in recent courses of study. Such courses are on the decline. One should realize that a school system's present program may have changed entirely from the program described here or elsewhere.

Too often in educational literature a given course has been evaluated on the type of course it appeared to be in a printed description of it. Actually classroom practice may deviate widely from a written outline. The purpose of describing courses from certain systems is to give insight into attempts to make the elementary social studies more vital, certainly not to judge them.

Common agreements. Revealed in a study of proposed programs are five elements that are nearly universally present. First, whatever type of program is followed, the work of most of the classes is coming to be organized into units of work. Many courses are no more than a collection of suggested units, sometimes with an apparent sequence and at other times with no recognizable sequence. Second, the teacher has more responsibility for determining what is to be studied and what is to be done. Third, the work of the first grade is usually centered around the home, whereas the community is emphasized in the second grade. Beyond the second grade there is little agreement. Fourth, gradually a much greater variety of learning experiences is being utilized. These provide a more vital program in their tendency to emphasize participation. Fifth, the use of community resources, films, and other learning resources is more common than in the previous decade. This departure from a dependence solely upon books for learning experiences has much in it to commend.

Variations of the "center-of-interest," "social functions" type of organization. The publication of the Virginia course of study in 1934 [56] created considerable interest in organizing similar types of programs. One point that probably should be noted was that in the Virginia course the social functions were used, to a considerable extent in practice, as separate units. The 1943 course has listed several large problems for each grade. Social functions are considered in selecting these problems but are not so apparent. The new organization is undoubtedly much easier for the teachers to understand and teach. More recent courses have specified that the specific aspect of the social function to be considered in any one level is "to give emphasis and to define the scope of the work for each grade. They are designed to give teachers clues to activities and understandings. They are neither units nor titles of units." [57]

Scope and sequence. The scope of this type of curriculum utilized the major social functions, whereas the sequence was known as "centers of interests" or "areas of experience." An idea of the similarity of scope

[56] Virginia State Department of Education, *op. cit.*, 1934 edition.

[57] Burbank City Schools, *A Tentative Basic Curriculum of the Burbank Schools* (Burbank, Calif., 1936, revised, 1939), p. 5.

and sequence of the various programs can be obtained by studying three courses, one state and two city ones.

SCOPE (MAJOR SOCIAL FUNCTIONS)

Burbank, California [58]	*Fresno, California* [59]	*Virginia* [60]
Production	Production and Distribution	Personal Development
Distribution	Consumption	Production, Distribution and Consumption
Consumption	Transportation and Communication	Communication and Transportation
Communication	Conservation and Protection	Protection and Conservation
Transportation	Recreation	Recreation
Protection and Conservation	Esthetic Expression	Expression of Esthetic and Religious Impulses
Leisure Time	Religious Expression	
Esthetics	Education	
Ethics	Extension of Freedom, Particularly through Self- and Social Control	
Education		

Clearly marked is the agreement that the early years of the elementary-school experiences are concerned with the immediate environment. Apparent also is the agreement that the upper years, grades three to six, deal with various aspects of the broader environment. These phases deal with life in contrasting environments, advancing physical frontiers (Virginia in grades three and four; and Burbank, grade five), and man's increasing control over his environment.

Suggested units. Usually for each area is suggested a number of units from which the work of the year is developed.[61] These units vary from simple ones with a few meager suggestions to extremely comprehensive ones which contain much more than any class could possibly use.

Concept or theme courses. A popular method of organizing courses is basing the organization on themes, concepts, or generalizations. The Baltimore program utilizes four classifications of concepts: relationship between man and environment, tendency to better living conditions, interdependence, and democracy as a way of life. Each unit is preceded by the list of generalizations and understandings for that unit classified under the four headings. An example is taken from a unit for the sixth grade, "Democracy as a Way of Life." [62]

[58] Burbank City Schools, *op. cit.*, p. 6.

[59] Fresno Public Schools, *Tentative Elementary Program in Social Studies, Grades One to Six* (Fresno, Calif., 1936), p. 7.

[60] Virginia State Department of Education, *op. cit.*, p. 518.

[61] The Fresno program is an exception; the sequence each grade in each school will follow has been listed. Whether the increase in materials available to teachers is sufficient to compensate for the artificiality of the plan, only they can judge.

[62] Baltimore City Schools, *Course of Study in Social Studies for Grades Four, Five and Six* (Baltimore, 1946), pp. 430-431.

SEQUENCE (CENTER OF INTEREST OR AREA OF EXPERIENCE)

Grade	*Burbank, California*	*Fresno, California*	*Virginia*
	Adaptation of Living within Immediate Environment	*The Child and His Immediate Environment*	
NURSERY SCHOOL KINDERGARTEN	Adaptation of the individual to group life		
GRADE I	Adaptation of the individual to home and school life	Living at home and school	Home, school life and community life
GRADE II	Adaptation of individual to community life	Living in the community	
	Adaptation of Living to the Broader Environment	*Life by Adjusting to Environment*	
GRADE III	Adaptation of peoples of various cultures to contrasting environments	In types of communities which are primitive or simple	Adaptation of life to varied natural environments and to advancing physical frontiers
GRADE IV	Adaptation of life to environmental influences in California	In varying physical environments	
		Living by Adjusting to Increasingly Complex Environment	
GRADE V	Adaptation of life to environmental influences in the United States	In our city, county, state, nation, and continent	Effects of invention, discoveries and machine production upon our living
GRADE VI	Relation of certain cultural phases, past and present, to our living	In the world at large	

Relationships Between Man and Environment

1. The availability of good farm land encouraged many Europeans to settle in the New World.

Tendency to Better Living Conditions

1. The desire to improve their living conditions led many Europeans to seek a home in America.
2. Because they felt that living under British rule robbed them of their rights and privileges, the American colonists fought for their independence.
3. When independence had been won, the new nation put forth every effort to form a government which would give its citizens the rights they felt had previously been denied them.
4. Through the efforts of wise leaders and the coöperation of its citizens, the United States of America established the Constitution which set up

for the nation a government "of the people, by the people, and for the people."

5. The willingness of the citizens of the new nation to adapt themselves to their new way of life made progress possible under the Constitution.

Interdependence

1. Before the American Revolution the colonists depended upon the mother country for many products which were necessary to their comfort in the New World.
2. When England cut off the colonists' trade with other countries the Americans began the work of producing many of their own necessities.
3. When independence had been won, the American government made provisions for developing industry in the new nation and for carrying on trade with other nations in order that all might benefit by the materials produced in various parts of the world

Democracy as a Way of Life

1. Democracy is based upon certain beliefs:
   a. Democracy holds that government derives its power solely from the consent of the governed.
   b. Democracy believes that decisions concerning public policies made by the pooled judgment of the majority are in the long run the wisest.
   c. Democracy implies understanding of and respect for minority groups in its midst.
   d. Democracy offers the greatest opportunities for the development of the individual.
2. Democracy grants to its citizens certain rights and privileges:
   a. Democracy guarantees civil liberties.
   b. Democratic government grants the right to labor at work of one's own choosing, provided it does not interfere with the interests of society.
   c. Democracy permits, encourages, and provides information to help develop a well-informed citizen.
   d. Democracy implies equal opportunities before the law, regardless of race, creed, sex, or color.
   e. Democracy guarantees the assumption of innocence until proof of guilt, and right of trial by jury.
3. Democracy exacts of its citizens certain responsibilities:
   a. The blessings of democracy were obtained through struggle and battle, and each generation in turn must strive to preserve the democratic way of life.
   b. Democracy demands individual responsibilities and participation in government as a duty of citizenship.
   c. Democracy provides protection for the weak and care for the needy.
   d. Democratic institutions and departments of government are supported through proportionate taxation of all the people.

Another example is the course for Port Arthur, Texas. Specific units are listed for each grade. Though listed as questions, the themes are clearly apparent. These units are: [63]

[63] Port Arthur Public Schools, *Social Studies* (Port Arthur, Texas, 1946), pp. viii-xii. A separate volume is published for each grade.

OUTLINE OF WORK BY GRADES

KINDERGARTEN

Unit One — How Does the Family Live and Work?
Unit Two — How Is the Family Dependent on the Community Workers?
Unit Three — How Has the Family Made Use of Passenger Trains and Busses As Means of Transportation?

GRADE LOW ONE

Unit One — What Types of Work Do People in a City Do in Order to Provide Food, Clothing, and Shelter?
Unit Two — How Do Men Travel and Carry Goods in a Community?
Unit Three — How Do Men Use Communication to Promote the Welfare of the People Who Live in a Community?
Unit Four — What Recreation and Enjoyable Activities Do Men Provide in a Community?

GRADE HIGH ONE

Unit One — How Do Different Kinds of Farms Supply Different Kinds of Foods?
Unit Two — What Are Seeds and How Are They Used?
Unit Three — How Is Circus Fun Provided for a Community?

GRADE LOW TWO

Unit One — How Have the Physical Features and Climatic Conditions Determined the Animal Life Along the Gulf Coast?
Unit Two — What Amusements and Recreations Are Characteristic of the Gulf Coast Region?

GRADE HIGH TWO

Unit One — In What Ways Is the Gulf Coast Region Conducive to a Variety of Occupations?
Unit Two — What Are the Characteristics of the Cities in the Gulf Coast Region?
Unit Three — How Has Man Learned to Protect Life and Property Along the Gulf Coast?
Unit Four — How Can Boys and Girls Help Ensure Healthy and Safe Living?

GRADE LOW THREE

Unit One — How Has Port Arthur Grown from a Small Village to a Large Oil and Exporting Center?
Unit Two — How Have Different Modes of Transportation Contributed to Port Arthur's Growth?
Unit Three — How Have Various Methods of Communication Contributed to Port Arthur's Growth?

GRADE HIGH THREE

Unit One — How Does the Rest of the World Help Supply Our Clothing?
Unit Two — How Does Man Apply Scientific Knowledge and Methods to Supply His Clothing Needs?
Unit Three — How Does the Rest of the World Help Supply Our Food?
Unit Four — How Does the Rest of the World Help Furnish Our Shelter?

GRADE LOW FOUR

Unit One — How Has the Culture of the Red Race Contributed to the Development of Civilization?
Unit Two — How Has Negro Culture Contributed to the Development of Civilization?
Unit Three — How Has the Culture of the Yellow Race Contributed to the Development of Civilization?

GRADE HIGH FOUR

Unit One — How Do the Elements of Weather Effect Life on the Earth?
Unit Two — What Influence Do the Heavenly Bodies Exert upon the Earth and Its Inhabitants?

GRADE LOW FIVE

Unit One — What Constitutes Our Heritage from the Past?
Our Heritage from Primitive People
Our Heritage from the Egyptians, Greeks and Romans
Our Heritage from the Middle Ages
Unit Two — How Did the Europeans Find and Explore America?
Unit Three — How Did the Colonists Live and Develop a Nation?

GRADE HIGH FIVE

Unit One — How Did the American People Help in the Expansion of the United States?
Unit Two — How has the United States Become a World Power?
Unit Three — How Do the People of the United States Obtain a Living?

GRADE LOW SIX

Unit One — How Were Mexico and Central America Explored and Developed?
Unit Two — How Was Texas Explored and Settled; How Did Texas Become a Republic; and What Part Has Texas Had in the History of the United States?

GRADE HIGH SIX

Unit One — How Did the Explorers Discover and Settle South America; How Have the Countries Developed; and What Place Do They Have in the World Today?
Unit Two — How Has Texas Developed into a Great State?

A study of the suggestions shows orientation to local and area problems (Gulf Coast), intercultural emphasis (grade four), and Latin America (grade six).

Another example of a course utilizing concepts as an important directive force is the third grade in Beloit, Wisconsin. The work of the third grade deals with "Community Life in Beloit." Practically all of the concepts can be developed through the suggested units. To make the possible emphasis clear to the teachers, the chart on page 335 was developed. Units should be selected from the two groups to cover all concepts.

COMMUNITY LIFE IN BELOIT

Emphasis	How our needs for food and clothing are supplied in Beloit			How our needs are supplied by people working together in Beloit (business-public)			
Social Concepts to Be Stressed	Exchange of goods and services	Transportation	Production (original and manufacturing)	People working together for a common purpose	Member of world community	Many kinds of workers needed	Community provides services for its own benefits
Through Suggested Units on (To be selected by class)	Story of milk Story of shoes Story of corn or wheat Story of wool Story of fruits and vegetables			The department store The factory The post-office Keeping well in Beloit How Beloit supplies streets and roads			

A course combining processes, functions, and concepts. A course emphasizing processes, functions, and concepts as determiners of scope is the former Texas program. The scope is illustrated in Table VII. The sequence elaborated by unit titles is:

TEXAS STATE COURSE OF STUDY [64]

GRADE I

A. How a Family Secures Food, Clothing, and Shelter
B. How Members of the Family Travel and Communicate
C. How We Are Protected at Home and at School
D. How We Maintain Our Health
E. How We Play at Home and at School
F. How We Make the Home and the School More Beautiful
G. How We Learn to Play and Work Together at School

GRADE II

A. How Our Neighborhood Secures Food, Clothing, and Shelter
B. How People in Our Neighborhood Travel and Communicate
C. How Our Neighborhood Is Protected
D. How We Protect and Maintain Health in Our Neighborhood
E. How the Children of Our Neighborhood Play Together
F. How We May Make Our School and Neighborhood More Attractive
G. How We Can Use the Facilities of Our Neighborhood for Learning

GRADE III

A. How a Community Provides Itself with Food, Clothing, and Shelter
B. How Our Community Is Served by Various Means of Transportation and Communication
C. How Our Citizens Coöperate to Govern Themselves in the Community

[64] Texas State Department of Education, *Tentative Course of Study for Years One Through Six* (Austin, Texas, 1936), pp. 168-216.

D. How the Community Provides for Safety and Health
E. How the Community Helps the Family to Play
F. What We Can Do to Maintain and Improve the Beauty of Our Community
G. How the Community Helps Us in Learning to Live Together

GRADE IV

A. How Differing Communities Produce and Exchange Goods
B. How People in Differing Communities Govern Themselves
C. How Health and Life are Protected in Differing Communities
D. How the Children of Differing Communities Play
E. How Beauty Is Expressed in Differing Communities
F. How Learning Facilities of Different Countries Compare with Ours

GRADE V

A. How the Production and Exchange of Goods Influences Our Nation as a Community
B. How the Individual Discharges His Responsibility to Others
C. How Various Agencies Aid the Individual in the Protection and Maintenance of Health
D. How Varying Conditions Affect Recreation
E. How Our Community Expresses the Arts
F. How Our Community Seeks to Make Learning Possible

GRADE VI

A. How the Production and Exchange of Goods Make Texas a Part of the World Community
B. How Problems of Control Influence Texas as a Part of the World Community
C. How Texas Attempts to Meet Problems of Health and Safety
D. How Texas Provides for Recreation
E. How Texas Creates, Adopts, and Adapts the Arts of the World
F. How Texas Makes It Possible for Children to Learn

Freedom within goals. An illustration of a general framework within which the teacher and pupils can develop their units is the Seattle course. In the kindergarten, first, and second grades, children become acquainted with the home, school, and community. In the third grade, attention is turned to home, school, and community life in other lands. Goals and understandings are listed as follows: [65]

OUR GOALS

To develop in each child

1. A consciousness of the necessity for coöperation among all peoples
2. An appreciation of the resources around him and a desire to use them wisely
3. An appreciation of the contribution of all racial, religious, ethnic, and socio-economic groups to the child's own school and community
4. An awareness of how ways of life are influenced by geographical and cultural factors

[65] Seattle Public Schools, *Social Studies, Grade Three,* Mimeographed bulletin, September, 1917.

UNDERSTANDINGS

To be developed through stories of children of other lands

1. *That people are becoming increasingly interdependent*

   The growing nearness of all lands because of modern transportation and communication makes it imperative for self-preservation that we understand other peoples and coöperate with them. Children and adults need to realize that a nation cannot be judged by its worst members. They also need to realize that we in the United States are affected by the needs of people in other lands.

2. *That ways of life are influenced by such cultural factors as education, technology, and family institutions*

   The mores and folkways of a people reflect their cultural heritage, giving reason to ways of life which may at first glance seem strange.

3. *That their ways of life are influenced by climatic conditions and their natural environment*

   The standard of living of any people is also influenced by the manner in which they adapt themselves to, and make use of their environment.

4. *That the worth of each person is determined by his individual merits rather than by his race, religion, ethnic, or socio-economic group*

   Similarities among people are greater than the differences among them. The elements that unite people are so much greater than those that divide them. To be different does not mean to be inferior. Variations within groups may be as great as variations between groups.

SUPPORTING SKILLS

1. *Gather, organize, and interpret data* from books, conversations, excursions, newspapers, movies, slides, museums, globes, and maps.

2. *Work coöperatively with teacher and classmates* in organizing committees, selecting leadership, making studies, preparing and presenting reports. There should be continuous growth in the child's ability to make decisions and accept the responsibility of those decisions.

3. *Present data in oral and written form,* following the standards outlined in the GUIDEPOSTS and GUIDEBOOK for the Language Arts, Seattle Public Schools.

4. *Use library facilities.* Competence should be developed in using title, table of contents, chapter headings, pictures, and word lists as aids in finding materials.

5. *Assume leadership and accept followership.* Classroom situations must be provided so that every child has an opportunity to exercise leadership as well as to practice followership.

6. *Use geographic terms* necessary to an understanding of the geography introduced in their reading. Use a globe to locate countries studied and to see their relation to the United States.

The work of grade four deals with Seattle and the Pacific Northwest; in five, American history is approached through biography; and grade six is "Living in the Americas." For each grade the goals and understandings are listed with suggested skills which need to be developed. Thus the class has a basis and a guide for the selection of their units and experiences within units.

Special emphasis. As special areas have been stressed in certain school systems, the need has been met by developing units throughout all the grades. These units are usually added to the existing program and not a part of an integral framework. An East Greenwich publication is an example in the area of Latin America. They published a series of units for grades one to nine as follows: [66]

Brazil (grades 1-2)
A Trip Around the Caribbean (1-3)
South America (1-3)
Mexico (1-4)
ABC Countries (2-7)
Temperate South America (4-6)
Tropical South America (4-6)
Caribbean Countries (5-7)
Latin American Nations as Customers (6-9)

Another interesting example is a publication of Bay City, Michigan, which is a result of its study-group activities of grades four through seven during 1945-1946. Excerpts from the bulletin give an idea of the goals: [67]

The purposes guiding the year's work were therefore:

A. To use the forces of education as a defense against World War III.
B. To develop the significance of world relationships.
C. To give the necessary facts for understanding international dependence, sharing, and teamwork.
D. To help curb racial, national, and religious prejudices by analyzing them.
E. To urge that no intolerant act should go unchallenged in the presence of any member of an elementary school group.
F. To help preserve the heritage in the arts, crafts, traditions, and cultures of all racial and national groups, and interweave this heritage into American life. To translate the old world heritage but never to repress it.

Concerning prejudices the elementary school group recommend these guides:

A. Prejudice is usually based on emotion and therefore has little relation to facts.
B. Prejudices should be analyzed. Because they usually have so little foundation in fact, an intelligent person can weed his own out.
C. Every human being has dignity and personal worth. He should be treated with understanding and courtesy regardless of race, creed, or social status.
D. Everyone should try to develop friendships with at least one member of the minority groups in his community.
E. Children should be praised for acts of understanding and courage in their intercultural relations.
F. The idea should be spread that people should be permitted to live, work, and enjoy life wherever their tastes, financial resources, friends, and desired facilities may lead them, regardless of race, nationality, or religious beliefs.

[66] East Greenwich Public Schools, Experimental Units on Latin America for Grades I to IX (East Greenwich, Rhode Island, 1944).
[67] Bay City Public Schools, *We are World Citizens* (Bay City, Michigan, 1946), pp. 1-3.

In regard to the teaching of geography the elementary school group considers these points of emphasis desirable:

A. Global geography looks upon the world as a cluster of nations that must live together as one family.
B. Geography is the strategy of men, space, and resources.
C. Distance is now measured in terms of speed, which changes somewhat world relationships.
D. Thinking must be done in terms of land, water, and air.
E. Trends require us to be alert concerning changes in the distribution of material, e.g., silk no longer comes from Japan or rubber from Malaya.
F. Our horizons encompass the earth. It is important for us to realize our place and our responsibilities in the world.
G. Geography skills, relationships, map reading assume even greater importance with these new world concepts.
H. Such facts as the following must receive repeated emphasis. Every child should know
   1. World-wide distribution of basic commodities—oil, iron, coal, aluminum, rubber, wheat, corn, etc.
   2. World-wide distribution of races and peoples with similar national and cultural backgrounds.
   3. The international trade routes and the relationship of nations to them. The important canals, key straits, and inland seas should be well known.
   4. The significance of the coöperation of the United Nations in their common aims.
   5. Treatment of people in the occupied countries.
   6. Contribution to world needs by each of the United Nations.

"True freedom cannot be given; it cannot be bestowed or bequeathed; it cannot be handed down—it must be achieved." Children are given much practice in the Bay City elementary schools with democratic procedures. They are encouraged to plan with the teacher, the daily program, room interests and routines, assignments, building relationships, playground activities, some control and disciplinary factors. Children are taught to accept responsibility and assume loyalty to their group. They evaluate their individual contributions and also share in the evaluating of the group activities. This training provides children with practice in democratic procedures and points the way to world citizenship.

A series of units which were taught during the year constituted the body of the bulletin. Such units were included as Palestine (religious tolerance), Russia, International Friendship, Nationalities that settled in Michigan, and United Nations Organization. Such a program emphasizes several of the newer areas in which development is needed.

An overview. The brief overview of a number of plans for organizing social experience is sufficient to indicate the divergencies in present curriculums. It is necessary to have such an overview if one is to understand the program of one's own system or to contribute to the improvising of the local program.

Only the programs through grade six have been included. It is essential in each situation for each teacher to have an understanding of the total eleven- or twelve-year program of her own system. Without such a per-

spective the work of her grade cannot be correctly interpreted. It is not the function of the elementary teacher to center her work on preparing children for requirements the secondary school might set. It is, however, necessary for her to have an understanding of her contribution to the total growth of the child.

There is still much to be done to improve social studies programs. A number of the recent courses examined showed little or no attempt to meet current needs, to be flexible and allow for teacher-pupil planning; lay participation was absent. Others showed an adaptation to children's needs and phases of development, utilization of the community, an attempt to provide for personal and social development through participation, attempts to utilize new concepts and materials and to provide teachers with a basis for directing real learning for children.

VII. SOCIAL EXPERIENCES

Widening experiences. Learning experiences were no problem when the regurgitation of the textbook constituted the only experience of the child. From life to textbook to life has been the transition of the learning experiences of childhood. Education in primitive life consisted of the child's actually being trained in the experiences to which he would later be subjected. Gradually book learning came to play a larger and larger part and crowded out real experiences. Recently the trend has been in the other direction. Slowly the number and variety of learning experiences have increased. In fact, the words *activity movement* were applied to the trend, and schools came to be known as *activity schools.*

Excess was marked in this movement as is so often the case. It was felt that "activity for activity's sake" was the goal. Any and every activity was considered to have value. The pendulum is settling itself, and teachers are more and more evaluating activity in terms of its contribution to learning.

The worth of the activity must be judged in terms of the individual, the contribution it makes to his purposes, and whether it has resulted in growth for him. It is not to be judged by the technical excellences of the final product. The supervisor or principal is very apt to make this error in the judgment of art work. Instances where the work has been directly copied or the contribution of the teacher has been at a maximum and that of the child at a minimum are too common. The same is true of activities in fields other than the creative fields.

From a few routine learning experiences such as reading and memorizing, assembling note-books, and, on the secondary level, conducting a few experiments, to nearly an endless variety of activities, indicates the distance traveled. The imaginations of many versatile teachers have contributed much of value which is available to all. One rather comprehensive list of activities of value in the social studies, with illustrative examples, is the material from Texas appearing on pages 341 and 342.

TYPES OF ACTIVITIES FOR SOCIAL STUDIES [68]

1. *Constructing*
   a. Build a sundial, make a clock face.
   b. Make a scrapbook of great Americans, a book of biographies of local representative citizens.
2. *Visiting*
   a. Visit stores to see
      (1) Different kinds of furniture
      (2) Hardware, noting articles made of steel
      (3) Groceries, noting goods from other states and countries
      (4) Dry goods, noting materials and their sources
   b. Visit bank, telephone, and telegraph offices.
3. *Experimenting*
   a. Plant a garden: bulbs, flowers, and shrubs.
   b. Experiment with a compass to see how it is used.
4. *Observing*
   a. Watch the construction of a new building; note modern conveniences, pattern, materials, and fire hazards.
   b. Observe the moon changes, the North Star, Big and Little Dippers; learn to tell directions.
5. *Talking* (telling stories, discussing, contributing experiences, debating)
   a. Discuss the use and need of passports.
   b. Discuss natural forces against which people must defend themselves, such as earthquakes, volcanoes, tornadoes, floods, droughts.
6. *Listening* (radio programs, music, speakers)
   a. Listen to radio programs from another country.
   b. Listen to a policeman tell the causes of accidents that can be eliminated.
7. *Sharing and Serving*
   a. Give first aid.
   b. Send Christmas and birthday gifts to mothers, elderly people, orphans, etc.
8. *Collecting*
   a. Collect humorous stories of Americans and people of other lands.
   b. Collect news clippings and magazine articles on soil conservation and reforestation.
9. *Dramatizing*
   a. Practice good posture, sitting, walking, and standing.
   b. Dramatize a foreigner taking out citizenship papers.
10. *Seeing* (visual aids)
    a. Give historical picture shows.
    b. Exhibit pictures of animals of all lands.
11. *Planning*
    a. Make plans for beautifying school interior and grounds.
    b. Plan a country fair.
12. *Playing*
    a. Organize a travel bureau where a few try to induce others to buy and take trips to countries via their transportation companies.
    b. Play circus.
13. *Writing*
    a. Publish a health newspaper
    b. Write a letter of thanks, of appreciation.

[68] Texas State Department of Education, *op. cit.*, pp. 159-164.

14. *Reading*
    a. Real folk-lore, fables, myths, and fairy stories of various peoples.
    b. Read reports from the Highway Department, showing the share of expense of roads paid by commercial motors and vehicles.
15. *Singing* (singing songs and playing instruments)
    a. Sing songs children of other lands sing.
    b. Sing American patriotic songs.
16. *Representing Graphically*
    a. Make a weather chart.
    b. Make a products map of Texas.
17. *Interviewing*
    a. Interview mayor, fire chief, chief of police, physician, and make reports to school.
    b. Interview visiting personalities with reference to topics of current interest.
18. *Participating in Organizations*
    a. Plan and carry out an election.
    b. Organize your school-room on basis of the city government.
19. *Analyzing* (surveying, discovering, comparing)
    a. Survey health conditions in the community, and make a report to the health officer.
    b. Survey services rendered by Highway Department for the protection of life.
20. *Exhibiting* (demonstrating, advertising, displaying, giving programs)
    a. Present program before a civic club showing some need of the city as children see it.
    b. Send exhibits to schools.

Additional experiences are appreciating, inspecting, helping, evaluating, and criticizing.

Becoming acquainted with new media. The increase in activities has created a problem of technique for many teachers. However, some teachers do not understand the many new media. For that reason many systems are providing training for teachers in some form or another. Resource units such as published by Los Angeles County, Long Beach, and Pasadena City Schools of California are rich in suggestions. Actual experience with new media is provided for the teachers of Los Angeles County through institute meetings.[69] A similar difficulty is met in regard to the teacher's knowledge of the area within which the unit is chosen.

Additional references of value in locating suggestions for actually handling the newer teaching procedures are given at the end of this chapter and Chapters 7 and 8.

Criteria for selecting and evaluating activities or experiences. Accepting any activity as valuable is a dangerous fallacy of which only too many teachers have been guilty. McClure stated the case succinctly: [70]

[69] A. R. Clifton, "Teachers Like This Institute," *Nation's Schools,* Vol. 20, July, 1937, pp. 30-32.

[70] Worth McClure, "Education of Children," *Thirteenth Yearbook,* Department of Superintendence (Washington, D. C., National Education Association, 1935), p. 225.

Just as we have the old formalist who requires the memorization of historic data without regard to the comprehension of historic movements or the building of ideals, so we have also the new formalist whose pupils produce clay vegetables, Indian villages, and picture cutting books galore without regard to the understanding of human relationships and the modification of childish behavior.

The selection and direction of activities or experiences are the crux of the whole program. If the teacher fails here in her rôle of guide, the modern program *can* become far worse than the traditional program. Teachers, principals, and supervisors should spend much time in considering the worth of activities in progress. Only through continuous evaluation throughout the school system can there be any assurance of progress.[71]

VIII. TEACHING PROCEDURES

Changing purposes change procedures. Children are persons, individuals, human beings. Hardly a new idea, yet in the perspective of time it has emerged as key-note of our present educational philosophy. Memory pictures only too vividly teachers in our experience who neglected to think of us as humans. Which made the most lasting impression, the information those teachers imparted or the inadequate or thwarted feeling they developed in us? More than lip-service must be given to the fact that the child is an individual; teaching procedures must take cognizance of the fact.

The question-answer method where she-who-knows-the-answer asks the question of those-who-do-not-know-it cannot be justified as a process for developing a well-adjusted individual. If pupils are to be more effective in meeting situations involving social relations, they are going to have to have experience in meeting situations. The teaching procedure must supply such opportunities.

There is no magical formula or mystic short cut for good teaching. The outstanding difference between the "old" and the "new" is that in the old the teacher was supposed to be a master of the information to be taught. In the new the teacher in addition needs to know and consider children—their interests, the way they develop, the way they learn, and their outlooks and desires. Adaptations which have taken place in teaching procedures have been the result of more understanding and consideration of the child.

A new purpose affects the elementary social-studies teacher. New experiences which the child has in planning, purposing, and carrying through his purposes; coöperating with others; and evaluating his work are considered of much more importance than the answering of questions from the printed page. However excellent the questions for the development of thinking, the one-text-question-and-answer method gives little

[71] Chapter 7 has suggested criteria for evaluating activities and Chapter 15 deals with the various phases of evaluating the child's progress.

consideration or opportunities for the total development of the child. The change in teaching procedure is necessary to meet the change in the purpose of teaching.

Procedures in the social-studies unit. Units are the basis for the teaching of the social-studies program. Teaching procedures were discussed in Chapter 7 dealing with the unit. The following suggestions are reemphasized in relation to the social studies. Each one will be briefly discussed. Obviously the list is not exhaustive.

1. *Socializing experiences during the whole of the school day are in reality part of the social-studies program.* Trying to divide the child's day into subject-matter compartments only results in detrimental hair-splitting. Many suggestions have been made for rich vital social experiences. These should permeate all the work of the school and not be limited to any one period.

2. *Background on the part of children is necessary before they can raise important problems.* Too often teachers presume that children can suggest the important problems involved in a unit when actually they know nothing about the area. A period of orientation, through reading, discussing, or questioning must precede any statement of problems by the pupils.

3. *Pupils must be the dynamic force directing learning activities.* Only through pursuit of their own worthy purposes can the maximum learning take place. The teacher is not to sit back and wait for the pupils to make their purposes known. It takes a much cleverer teacher to have a class doing its own planning, than it does for the teacher to do it.

The spirit of the class is entirely changed and the outcomes vastly different. Group formulation of purposes and problems, planning and sharing, reconciliation of conflicting desires and viewpoints continuously occur. Class procedure changes from a process of suppression to one utilizing initiative and resourcefulness. Open-mindedness and a questioning attitude are developed.

4. *The needs of the whole child must be the basis of teacher guidance.* Attention to the intellectual development of the child is not sufficient. Any decision of the teacher must be made in terms of what is best for the child, including the effect on his habits of behavior, his attitudes, and his total reactions. It seems simple to repeat, but actually it is most complex. Mistakes will be made, no teacher can avoid them, but they will be much less serious than when only one phase of development is considered.

A common problem is what to do when an individual partially completes a project and drops it. In one case the project might have been beyond the child; in another it might be a habit the child developed of flitting from one thing to another. Unless the teacher knows the child, she may make a sad error in thinking in the first case that the child should be forced to continue or in the second allowed to drop it.

5. *Pupil-planning necessitates teacher-planning.* A common fallacy for teachers beginning to utilize new types of procedures is to feel that the

pupils are to do all the planning. The technique of utilizing pupil-planning needs to be slowly developed. The groups should be encouraged to develop a plan for their own work. Gradually the teacher becomes more expert and can increase the scope of pupil planning.

6. *All pupils do not have to contact the same material.* One fallacy in our educational practice has been the custom of having all pupils study the same material. When teachers first begin to use committees, the fact that all children are not contacting the same material is apt to worry them. Yet there is no reason why this should be so, for it is impossible to contact all material. There is no reason why some children should not work with one part of the problem and another group work with another. The final reports of the committees are the device for pooling the experience of all.

7. *Evaluation should be made in terms of purposes.* The purpose of the social studies is to help pupils meet social situations. Any attempt to evaluate what the pupils have learned should be in terms of this purpose. Most measurements have been made in terms of facts instead of the pupil's ability to utilize the facts. A number of suggestions for evaluation are presented in Chapter 15.

Suggested Learning Experiences

1. If you prepared a social-studies unit for Chapter 7, rework your unit in light of the material covered in this chapter. If you did not construct a unit, you should write one for this chapter.

2. Review one of the more important non-fiction books dealing with social conditions of the day. What are the implications of the material for the elementary social studies?

3. Discuss the possibilities for utilizing "personal problems" in the social-studies program. Books on psychology dealing with ages six to twelve should be helpful. Can the group evolve suggestions for each grade?

4. Using Table VI as a source for placement, outline your suggestions for eliminating fears of youngsters. These suggestions should be grouped as follows: Kindergarten-Grades 1 and 2, Grades 3 and 4, and Grades 5 and 6.

5. Prepare a list of geographic concepts which should be incorporated in the social-studies units. The *Thirty-Second Yearbook* of the National Society for the Study of Education and the *Nineteenth Yearbook* of the National Council for the Social Studies should be helpful.

6. If recent courses of study in the social studies are available, compare them with those discussed in the chapter. In what ways are they better than those discussed? What provision have they made for sequence?

7. Compare a traditional history series and geography series of textbooks with one of the newer fused series. What are the differences in the concepts considered?

8. Compare two of the newer fused courses. To what extent is there agreement and where do differences occur in sequence?

SELECTED REFERENCES *

A. *General References*

American Historical Association, *Conclusions and Recommendations* (New York, Charles Scribner's Sons, 1934). A condensed report of the findings together with the recommendations of the Commission.

———, Reports of the Commission on the Social Studies. There are the sixteen volumes of the Commission. Several of the individual volumes which have special significance are annotated in the remainder of the bibliography. All were published by Charles Scribner's Sons from 1932 to 1937.

ARNDT, C. O., ed., *Americans All: Studies in Intercultural Education* (Washington, D. C., Association for Supervision and Curriculum Development, 1942), 385 pp. Presents a system of values, programs of action, and issues to be faced.

Association for Supervision and Curriculum Development, *Large was our Bounty, 1948 Yearbook* (Washington, D. C., Association for Supervision and Curriculum Development, 1948), 216 pp. How schools may help to conserve our resources.

BATHURST, Effie G., *Inter-American Understanding and the Preparation of Teachers* (Washington, D. C., U. S. Office of Education, Bulletin 1946, No. 15), 100 pp. Describes background needed by teachers and suggests various programs for developing same.

BEARD, Charles A., *A Charter for the Social Sciences* (New York, Charles Scribner's Sons, 1932). A good book for elementary teachers to read to gain a rather long-range perspective.

BOWMAN, Isaiah, *Geography in Relation to the Social Sciences* (New York, Charles Scribner's Sons, 1934). A comprehensive treatment of geography.

CHATTO, Clarence I., and HALLIGAN, Alice L., *The Story of the Springfield Plan* (New York, Barnes and Noble, Inc., 1945). Describes the well publicized Springfield, Massachusetts plan for intercultural education.

CONANT, J. B., *Education in a Divided World* (Cambridge, Harvard University Press, 1948). Excellent for background reading.

Consumer Education Study, *Consumer Education in the Schools* (Washington, D. C., National Association of Secondary School Principals, 1947), 128 pp. A handbook for teachers and administrators directed toward the secondary level but containing a wealth of ideas for elementary.

CRARY, Ryland, "Challenging Areas in the Developing Social Studies Curriculum," *Teachers College Record*, Vol. 48, December, 1946, pp. 140-147. Defines areas needing more consideration but does not propose an integrated program.

Department of Elementary School Principals, *Community Living and the Elementary School*, Twenty-Fourth Yearbook, *National Elementary Principal*, Vol. 25, September, 1945, pp. 1-351. Contains many valuable descriptions of practice in connection with learning experiences in the community, developing community understanding and participation, and meeting community needs.

———, *Elementary Schools—the Frontline of Democracy*, Twenty-Second Yearbook, *The National Elementary Principal*, Vol. 22, July, 1943, pp. 245-591. Worthwhile descriptions of citizenship practices. The last chapter by Chase is valuable to a school in judging the worth of its program.

———, *How to Know and How to Use Your Community* (Washington, D. C., Department of Elementary School Principals, 1942). Practical suggestions on how to study and utilize community resources.

———, *Learning Goodwill in the Elementary School*, Twenty-fifth Yearbook, *National Elementary Principal*, Vol. 26, September, 1946, pp. 1-366. Excellent descriptions of practice. Singularly free of "tea-drinking" projects.

———, *Spiritual Values in the Elementary School*, Twenty-Sixth Yearbook, *National Elementary Principal*, Vol. 27, September, 1947, pp. 1-351. Contains many suggestions for incorporating spiritual values in the social studies program.

* See also the references at the end of Chapters 1, 7 and 8. References are generally not duplicated.

Department of Superintendence, *Social Change and Education, Thirteenth Yearbook* (Washington, D. C., National Education Association, 1935). Valuable as a background for a consideration of the *Fourteenth Yearbook*.

———, *The Social Studies Curriculum, Fourteenth Yearbook* (Washington, D. C., National Education Association, 1936). One of the best treatments of the whole problem of the social studies up to 1936.

DEWEY, John, "What Is Social Study?" *Progressive Education,* Vol. 15, May, 1938, pp. 367-369. Points out the relationship that exists between social studies and each of the other subjects of the curriculum.

Educational Policies Commission, *Education for All American Children* (Washington, D. C., National Education Association, 1948), 292 pp. Proposes hypothetical programs followed by actual descriptions of practices. Very helpful.

———, *Learning the Ways of Democracy* (Washington, D. C., National Education Association, 1940), 486 pp. Contains many valuable descriptions of classroom practices.

ENYEART, Buel F., and LEE, J. Murray, "Burbank, California, Schools—Twelve-Year Sequence for Social Understanding," *Clearing House,* Vol. 11, May, 1937, pp. 542-546. Describes the development of a twelve-year program, using the social studies as a "core."

FOREST, Ilse, *Early Years at School* (New York, McGraw-Hill Book Company, 1949). Part II covers social experiences through grade three.

FORSYTH, Elaine, "Map Reading," *Journal of Geography,* Vol. 42, October, 1943, pp. 249-257. See also her articles in the seven subsequent issues. Excellent help on map reading skills.

GAVIAN, Ruth W., *Education for Economic Competence in Grades I to VI* (New York, Bureau of Publications, Teachers College, Columbia University, 1942), 190 pp. A careful and helpful study of the problems of economic education.

HARAP, Henry, ed., *The Changing Curriculum* (New York, Appleton-Century-Crofts, Inc., 1937). Excellent critiques of several actual programs.

HARVEY, C. C., BLOOM, Lewis G., and GREENE, Max, "What Social Changes Should be Reflected in the Social Studies Curriculum?" *The Social Studies,* Vol. 37, February, 1948, pp. 79-81. A statement prepared by three schoolmen of changes which need attention in the social studies.

HILDRETH, Gertrude, *Child Growth Through Education* (New York, Ronald Press Company, 1948), Chs. IX, XII, and XIII. Discusses social studies, intercultural relations, and educating for world citizenship. Valuable bibliographies.

HOPKINS, L. Thomas, *Integration* (New York, Appleton-Century-Crofts, Inc., 1937). Chs. X to XIV discuss various types of courses especially with reference to the social studies.

HORN, Ernest, *Methods of Instruction in the Social Studies* (New York, Charles Scribner's Sons, 1937). Valuable chapter on thinking, meaning, and learning in the social studies.

JAMES, Preston E., "Developments in the Field of Geography and their Implications for the Geography Curriculum," *Journal of Geography,* Vol. 46, September, 1947, pp. 221-226. Outlines primary concepts in geography.

KELLEY, Truman L., and KREY, A. C., *Tests and Measurements in the Social Sciences* (New York, Charles Scribner's sons, 1934). Contains general discussion of measurement and much helpful material on concepts.

KELTY, Mary G., *Learning and Teaching History in the Middle Grades* (Boston, Ginn and Company, 1936). Offers suggestions and plans for teaching American history in the intermediate grades.

KILPATRICK, William Heard, and VAN TIL, William, eds., *Intercultural Attitudes in the Making,* Ninth Yearbook of the John Dewey Society (New York, Harper and Brothers, 1947), 246 pp. Proposes a series of principles for intercultural education.

KREY, A. C., *A Regional Program for the Social Studies* (New York, The Macmillan Company, 1938). A proposed program developed from the author's connection with the American Historical Association committee.

MARSHALL, Leon C., and GOETZ, Rachel Marshall, *Curriculum Making in the Social Studies* (New York, Charles Scribner's Sons, 1936). Stresses the "social processes" approach to curriculum construction.

MINOR, Ruby, *Early Childhood Education* (New York, Appleton-Century-Crofts, Inc., 1937). Chapter X deals with social studies as a background for experience in the primary grades.

MOHR, Clara Louise, "Child Development as an Approach to a Social Studies Curriculum," *Elementary School Journal*, Vol. 44, March, 1944, pp. 388-395. Points out the broad implications from child development for social studies.

National Council for the Social Studies, *Some Aspects of the Social Sciences in the Schools, First Yearbook* (1931); *Classroom and Administrative Problems in the Teaching of the Social Sciences, Second Yearbook* (1932); *Supervision in the Social Studies, Third Yearbook* (1933); *The Social Studies Curriculum, Fourth Yearbook* (1934); *The Historical Approach to Methods of Teaching the Social Studies, Fifth Yearbook* (1935); *Elements of the Social Studies Program, Sixth Yearbook* (1936); *Education Against Propaganda, Seventh Yearbook* (1937); *The Contribution of Research to the Teaching of the Social Studies, Eighth Yearbook* (1937); *Utilization of Community Resources in the Social Studies, Ninth Yearbook* (1938); *In-Service Growth of Social Studies Teachers, Tenth Yearbook* (1939); *Economic Education, Eleventh Yearbook* (1940); *The Social Studies in the Elementary School, Twelfth Yearbook* (1941); *Teaching Critical Thinking in the Social Studies, Thirteenth Yearbook* (1942); *Citizens for a New World, Fourteenth Yearbook* (1944); *Adapting Instruction in the Social Studies to Individual Differences, Fifteenth Yearbook* (1944); *Democratic Human Relations, Sixteenth Yearbook* (1945); *Study and Teaching of American History, Seventeenth Yearbook* (1946); *Audio-Visual Materials and Methods in the Social Studies, Eighteenth Yearbook* (1947); *Geographic Approaches to Social Education, Nineteenth Yearbook* (1948) (Washington, D. C., The Council, N.E.A.). Each yearbook constitutes a most helpful contribution in the area indicated by its title.

———, *Social Education for Young Children in the Kindergarten and Primary Grades* (Washington, D. C., The Council, 1946). Contains much of value for the primary grades.

National Education Association, *Education for International Understanding in American Schools* (Washington, D. C., National Education Association, 1948), 241 pp. The most comprehensive statement on the development of international understanding. Basic to any consideration of the problem.

National Society for the Study of Education, *The Teaching of Geography, Thirty-Second Yearbook* (Bloomington, Ill., Public School Publishing Company, 1933). Most valuable section on geography in the curriculum, teaching technique and research studies.

New York State Education Department, *Exploring the Environment* (Albany, New York, State Education Department, August 2, 1943), 174 pp. Appropriate materials for environmental studies, school practices, and state resources. Excellent.

OLSEN, Edward G., and others, *School and Community* (New York, Prentice-Hall, Inc., 1945), 422 pp. A comprehensive treatment of school-community utilization and relations. Valuable for orientation and specific suggestions.

———, "School and Community Bibliography," *Washington State Curriculum Journal*, Vol. 7 (November, 1947, January and March, 1948). The most comprehensive bibliography on the community school.

OLSON, Clara M., and FLETCHER, Norman D., *Learn and Live* (New York, Alfred P. Sloan Foundation, 1946), 101 pp. Highlights the Sloan experiments in food, clothing, and shelter.

QUILLEN, I. James, "What are the Social Concepts to be Developed in Children," *Childhood Education*, Vol. 23, May, 1947, pp. 405-409. Useful in preparing statements of general concepts.

———, and HANNA, Lavone A., *Education for Social Competence* (Chicago, Scott, Foresman and Company, 1948), 572 pp. While primarily for secondary teachers, it contains much of value to upper-grade teachers.

RUGG, Harold, *American Life and the School Curriculum* (Boston, Ginn and Company, 1936). Chapters XIX to XXIII especially helpful in constructing a course.

Stanford University, School of Education, *Aviation Education Source Book* (New York, Hastings House, 1946), 855 pp. A source book for teachers.

VICKERY, William E., and COLE, Stewart G., *Intercultural Education in American Schools* (New York, Harper and Brothers, 1943), 214 pp. Proposed objectives, methods, activities, and experiences which could be carried out.

WEEKS, Ruth Mary, chairman, "Significant Concepts from Social Sciences," *A Correlated Curriculum*, a publication of the National Council of Teachers of English (New York, Appleton-Century-Crofts, Inc., 1936), p. 15. Lists the significant concepts which the social studies can contribute in correlated curriculum.

WESLEY, Edgar Bruce, director, *American History in Schools and Colleges* (New York, The Macmillan Company, 1944), 148 pp. The report of the Committee on American History in Schools and Colleges of the American Historical Association, the Mississippi Valley Historical Association, and the National Council for the Social Studies. Gives specific recommendations of topics and skills.

———, *Teaching the Social Studies* (Boston, D. C. Heath and Company, 1937). A comprehensive treatment and summary of the literature in the social studies. The author discusses such subjects as the grading of material, the social-science teacher, utilizing community resources, methods, etc. The book contains extensive bibliographies.

———, and ADAMS, Mary A., *Teaching Social Studies in Elementary Schools* (Boston, D. C. Heath & Company, 1946), 362 pp. The best single reference for elementary social studies.

"We, the Children," *Educational Leadership*, Vol. 2, March, 1945, pp. 242-271. Excellent for use in beginning the study of intercultural attitudes.

WRIGHTSTONE, J. Wayne, and CAMPBELL, Doak S., *Social Studies and the American Way of Life* (Evanston, Ill., Row, Peterson and Company, 1942), 292 pp. A general treatment.

———, LEGGITT, Dorothy, and REID, Surley, *Basic Social-Science Skills* (New York, Henry Holt & Company, Inc., 1944), 181 pp. Helpful suggestions of how to study social studies.

B. *Researches, Summaries, and Bibliographies*

BAKER, Emily V., *Children's Questions and their Implications for Planning the Curriculum* (New York, Bureau of Publications, Teachers College, Columbia University, 1945), 172 pp. Fifty percent social studies, eight percent current events, 3.66% local communities, thirty-eight percent scientific, 3.46% human body.

BURTON, William H., and others, *Children's Civic Information, 1924-1935* (Los Angeles, University of Southern California, 1936). An extremely significant study of civic information of children.

CAREY, Alice E., HANNA, Paul R., and MERIAM, J. L., *Catalog: Units of Work, Activities, Projects, etc. to 1932* (New York, Teachers College, Columbia University, 1932), also MERIAM, J. L., *Activities, Projects, Units of Work Catalogued for 1932-1939* (Berkeley, California, University of California, 1943). A bibliography of units.

CHASE, W. Linwood, *Teaching Time and Place Relationships in Elementary School History*, Doctor's thesis, Teachers College, Columbia University, New York, 1934. Summarized in *Social Studies*, Vol. 16, March, 1935, pp. 198-199. The best study on time and place.

CLARK, Willis W., "Vocabulary Difficulty of Selected Social Studies Books," *California Journal of Elementary Education*, Vol. 3, May, 1935, pp. 213-219. Reports on the reading difficulty in seventy-seven elementary social-studies books.

COOK, Lloyd Allen, "Intergroup Education," *Review of Educational Research*, Vol. 17, October, 1947, pp. 266-278. Summarizes seventy-seven studies in a helpful manner.

DICKEN, Samuel N., and WESLEY, Edgar B., "Geography Textbooks," *Latin America in School and College Teaching Materials* (Washington, D. C., American Council on Education, 1944). An analysis of geography textbooks for content on Latin America.

"Education for Citizenship," *Review of Educational Research*, Vol. 17, October, 1947, pp. 253-300. Summarizes research from 1944 to 1947. Excellent chapters in intergroup education and the social studies.

"Education for Work and Citizenship," *Review of Educational Research*, Vol. 14, October, 1944, Chs. VI and VII. Chapter VI summarizes the research on social studies

and Chapter VII the research on "Trends in Social Education" for the previous three-year period.

JACKSON, Virgil Davis, "The Measurement of Social Proficiency," *Journal of Experimental Education,* Vol. 8, June, 1940, pp. 422-474. Contains a valuable summary of research.

JENSEN, Kai, "Social Studies," *Child Development and the Curriculum,* Thirty-Eighth Yearbook of the National Society on the Study of Education. Part I (Bloomington, Ill., Public School Publishing Company, 1939). A most comprehensive summary of the research dealing with social-studies concepts and placement available.

MANSKE, Arthur J., *The Reflection of Teachers' Attitudes in the Attitudes of Their Pupils,* Contributions to Education, No. 702 (New York, Teachers College, Columbia University, 1936). Contains an excellent bibliography on changing attitudes.

MICHAELIS, John U., "Current Problems of Elementary Teachers in the Social Studies," *The Social Studies,* Vol. 38, May, 1947, pp. 221-225. A judgment of the importance of teachers' questions by supervisors. Useful in preparing materials for teachers.

OJEMANN, Ralph H., "The Effects on the Child's Development of Changes in Cultural Influences," *Journal of Educational Research,* Vol. 40, December, 1946, pp. 258-270. Ojemann points out the members of an elementary student council (4-5-6) assigned punishments on the basis of a non-analytic approach to behavior. The school did nothing to help them analyze behavior. It merely perpetuated their bad practices. He offers evidence that students could be taught to analyze behavior and that it did affect their behavior pattern.

PRICE, Roy A., BURKHARDT, Richard W., and MINOTTI, Victor, "The Social Studies," *Review of Educational Research,* Vol. 17, October, 1947, pp. 279-292. Summarizes ninety research studies for the previous three year period.

"The Social Studies," *Review of Educational Research,* Vol. 11, October, 1941, pp. 419-474. Summarizes research from 1937 to 1941. Chapters on nature and function, curriculum, methods, community life, and evaluation.

TRYON, Rolla M., "Selected References in the Social Sciences," *Elementary School Journal,* October issue. An annual compilation of references selected from the literature appearing during the preceding year. Begun in 1933.

WHIPPLE, Gertrude, "How Can the Course of Study Improve the Use of Geographic Material?" *Elementary School Journal,* Vol. 43, November, 1942, pp. 151-159. An analysis of 110 courses of study.

WILSON, Howard E., "Intergroup Relations in Teaching Materials," *Educational Record,* Vol. 28, April, 1947, pp. 114-121. Shows inadequacies in texts.

10

Language Experiences: Learning to Use Language

> He will use language as one eats with a fork, as one rides a bicycle, as one drives an automobile; without conscious reference to the laws of physics or of mechanics, but with thoughts of the message, of the meal, and of the journey.
>
> —LAWRENCE H. CONRAD

I. THE CHANGING CONCEPT OF LANGUAGE ARTS

This quotation points the new direction of the language-arts program. Fading is the emphasis upon mechanics as teaching materials, and increasing is the stress upon the expression of the ideas and thoughts. Significant is the disappearance of the term *grammar school* and in its stead the substitution of the expression *elementary school.* Instead of many suggestions for the teaching of formal grammar, the newer courses are discussing situations in which the pupil uses language.

The only purpose of language is to improve and make easier communication. It makes possible the expressing of thoughts, ideas, and feelings by one person, through speaking or writing; and the taking in of those thoughts, ideas, and feelings by another through reading or listening. The expression is meaningless unless it reflects the thinking of the one speaking or writing. Just so the taking in of what one reads or hears is meaningless unless one reacts to it. Hence, the real and only basis of language is thought, and no language has any value without it. This has wide implications for school experience.

The change from the formal, stilted classroom to the informal living situation of the modern room naturally provides situations in which the child has much more of an opportunity to express himself. Assigned compositions have given way to the child's writing something he has a need to write. His writing has a purpose; it is to be used for something; it is to meet a need of his own. When children are given the opportunity to talk about something that is of interest to them, they respond freely. It is only in such situations that language may be adequately developed.

A realization that effective expression, either oral or written, is best developed in relation to all of the activities of the child has resulted in changes in classroom practices. Expression itself has no subject-matter. It

is a technique. As a technique it is best developed in connection with the material with which it is to be used. By our traditional school set-up, we did much to further the idea of many children that good expression was only important during the English or grammar period. During the days when departmentalization was rampant, little attention was paid to developing ability to read the subject matter texts, to mistakes in writing or spelling; that was the job of the spelling or reading or English teacher, who of course knew little of the child's special needs.

A discussion of the language arts within the limits of one chapter seems to be an impossible task. Whole books have been written on oral expression, written expression, reading, spelling, and writing.[1] Comprehensive summaries of the researches in these fields cover literally hundreds of pages.[2] It is the purpose of this chapter to give a point of view in relation to the teaching of the language arts, some concept of the principal outcomes which should result from elementary instruction, some idea of the practices of schools, and some of the more important problems and developments in each of these fields. This furnishes a background for further study in this area.

Purposes of language experience. A committee of the National Council of Teachers of English developed a list of basic aims for instruction in American schools. They are as follows:

I. Language is a basic instrument in the maintenance of the democratic way of life.
II. Increasingly free and effective interchange of ideas is vital to life in a democracy.
III. Language study in the schools must be based on the language needs of living.
IV. Language ability expands with the individual's experience.
V. English enriches personal living and deepens understanding of social relationships.
VI. English uses literature of both past and present to illumine the contemporary scene.
VII. Among the nations represented in the program of literature, America should receive major emphasis.
VIII. A study of the motion picture and radio is indispensable in the English program.
IX. The goals of instruction in English are, in the main, the same for all young people, but the heights to be attained in achieving any one of them and the materials used for the purpose will vary with individual need.
X. The development of social understanding through literature requires reading materials within the comprehension, the social intelligence, and the emotional range of the pupils whose lives they are expected to influence.
XI. English pervades the life and work of the school.

[1] See such books listed in the first two sections of the references at the end of the chapter.

[2] See especially the last section of references at the end of the chapter.

XII. English enriches personality by providing experience of intrinsic worth for the individual.

XIII. Teachers with specialized training are needed for effective instruction in the language arts.[3]

A clarification of purpose is vital to directing the language-arts program of any school. No matter whether one makes a statement of purposes, actual practice always implies the conscious or unconscious acceptance of a philosophy. Most of the language teaching of the formal elementary school indicated that detailed correctness was the purpose. In contrast the language teaching in many schools to-day implies that genuine expression, appropriateness, individuality, and the development of the child as a thinking person are the primary purposes to be realized.

Listed purposes, though they may be most acceptable, have no value unless appropriate activities are selected to realize them. From results it would appear that too many systems have had one committee working on statements of purposes and another committee on subject-matter. Their final report was brought together without any relationship between them. Unless activities are selected which will realize the purposes, obviously the purposes will not be realized.

The interrelationship of the language arts. Research is continually verifying the concept that, since each of the language arts is just a facet of the larger process of communication, there should be a great deal of interrelationship. Children must use words in speaking and have them meaningful before they can read them successfully. They can spell better the words which they read with understanding and which they want to use for their own purposes. Their hand writing even improves when they use it in purposeful communication, when someone important to them is going to read it. In the traditional school all these "subjects" were taught separately with little or no relationship to each other. A great deal of effort was wasted. When instead all these skills are used purposefully in relation to an area of interest, they reinforce one another and the learning process becomes more efficient and effective.

One school system lists the following objectives and then goes on to give suggestions for implementing them:

1. To improve the quality of thinking through a word-delineation of experiences
2. To develop an appreciation of personal experiences which are increased in significance through language
3. To develop ability to observe environment more accurately and through communication to share this observation with others
4. To develop appreciation for effective usage as a means of improving expression

[3] "Basic Aims for English Instruction in American Schools" (prepared by the Basic Aims Committee of the National Council of Teachers of English) (copyright by W. Wilbur Hatfield, *The English Journal*, 211 W. 68th St., Chicago 21, Illinois; published by the University of Chicago Press), *English Journal*, Vol. 31, January, 1942, pp. 40-55.

5. To develop appreciation of a rich vocabulary because it makes possible more adequate expression
6. To develop ability for clear expression in everyday speech and writing
7. To develop more adequate personalities in social relationships through improved facility and accompanying ease in communication
8. To improve personal integration through the use of language in creative, constructive activities and as a rational procedure in problems of mental health [4]

Interrelations of language and personality. Real communication in a free atmosphere is one of the essentials for good emotional development. If a child can and may express his thoughts and feelings so that his classmates and his teacher truly understand; if in return he can truly understand the things they are trying to tell him, he is well along on the road to emotional health. He will be able better to share others' experiences vicariously. He will gain confidence and clarify his own thinking by expressing his own ideas. He can learn self-control and thoughtfulness of others by not monopolizing the conversation.

Social competence is aided by being able to speak with facility, to command the attention of the group or of an individual, to have an awareness of the feelings of others as you speak, to be sensitive to their reactions to your way of expressing yourself. In fact, the social sense of an individual is judged by his fitness to say the right thing at the right time, to put others at ease, to make his points without arousing undue antagonism and to control speech when necessary.[5]

Language patterns are closely related to the personality of the pupil. Too often this relationship is neglected in the application of mechanical teaching procedures. A survey of the Madison, Wisconsin, elementary schools showed approximately one-fifth of the pupils with language difficulties. Practically all of these are an integral part of some personality problem and must be treated as such. Direct teaching in these areas is helpful only after the basic emotional problem is being solved. The language difficulties, with the number of pupils from kindergarten through grade six, which the teachers found are as follows: [6]

Embarrassment in speaking before a class (timidity)	243
Eagerness to talk—tendency to monopolize	119
Speech too low or fast	112
Inability to listen	104
Rambling talk	72
Usage errors	67
Unwillingness to take part in discussion	67
Indifference to discussion	60
Lack of originality	56
Too much docility in accepting criticism or comments in discussion	20

[4] San Diego County Schools, *Trends in Elementary Education: A Teachers' Guide* (San Diego, California, 1945), p. 33.

[5] Gladys L. Potter, "Reading, Writing, and Speaking: Their Contribution to Social Competence," *Childhood Education,* Vol. 19, October, 1942, pp. 69-73.

[6] Adapted from Ethel Mabie (Falk), "Language Ability and Personality Adjustment," *Elementary English Review,* Vol. 10, September, 1933, pp. 165-166. Copyright, 1933, by C. C. Certain.

This study of the Madison teachers is another contribution to the rapidly increasing evidence of the need for the teacher to be concerned with the total development of the pupil. Effective growth is not obtained from a rigid compartmentalization of teaching effort.

This approach to language teaching through a recognition of the various problems of pupils appears to have much more significance than the usual correction of minute errors which has been stressed by so many itemists. A helpful characterization of the groupings of these problems has been given by Falk.

LANGUAGE AND PERSONALITY PROBLEMS [7]

1. There are superior performers who are individual and interesting in their expression and who need only opportunity and suggestions. They may need also the removal of some of the standardizing, stultifying directions that we give: "Use an interesting beginning sentence and a good closing sentence that refers to the topic" or "Begin your sentences with *although, nevertheless,* etc."

2. There are other pupils who talk rapidly, with little interest in their listeners and with little evidence of clear thinking. They need to be made aware of the two-way nature of language—to realize that communication really consists of what some one understands of what we say and not merely of what we say.

3. There are those who can investigate a problem and organize material, but who become self-conscious when reporting to a group. For them we must remove the fear of a hypercritical audience of classmates and the type of teacher whose ear is tuned only for mistakes.

4. There are those who in their home environment acquire only a meager vocabulary and usage that is socially unacceptable, so that habits of correct and adequate expression are difficult to build. Perhaps a different level of achievement must be determined for them.

5. There are those who wish to monopolize the discussion, and who have the habit of repeating or completing what others say. They need to be made sensitive to the reactions of other people.

6. There are those who have ideas, but who are indifferent to the requirements of neatness and correctness of form. They need more motivation than is found in the usual English assignment in which the student writes merely to prove to the teacher and his competing classmates that he can do it. It is not inconceivable that a lively boy may discover situations in which he needs and wants to write well. It may be to secure a pamphlet on a subject in which he is interested or to make contact with some well-informed person. It may be to write up his own experiments or hobbies. At any rate, those pupils must be given a drive of their own because they have outgrown the superficial motive of pleasing the teacher.

7. There are those who have no feeling for organization of thought, and who, consequently, write poor sentences and paragraphs. They need not more drill on grammar or sentence exercises but real help with discovering a main idea and sticking to it.

8. There are those who are imitators, and who are not independent in gathering information to share with others. I wonder that there are not more of such problems! How can we expect either speaker or audience to be genuine and unusual when we ask them all to write and talk on the same topic—and

[7] Ethel Mabie Falk, "Adjustment Through English Expression," *The English Journal, High School Edition,* Vol. 26, May, 1937, pp. 384-385.

then to listen to the product on forty papers! Try listening forty times to even the most interesting talk!

II. THE CHANGING CONCEPTS: LANGUAGE REFLECTS CULTURAL LEVELS

What a variety of language is heard on the first day of school in a first grade class! The Spanish youngster talks rather broken English, but his Spanish flows freely, the lads who just arrived from New England and the South seem to speak differently, the professor's daughter uses "good" English, and the girl from the other side of the tracks uses "terrible" English. Where have these children learned their language? What kind of language do they continuously hear? As the whole area of language is considered we need answers to these questions.

Forces at work to change the stress on usage are numerous. Attempts to answer "What is good English?", studies of children's errors, studies of influences on good usage, newer lights on learning, and the consciousness of the importance of meaning rather than form are all affecting the teaching of language. Many forms condemned in grammar books are now accepted.[8] Research has supplied data concerning the most common errors. Formal grammar has shown little transfer to good usage. Meaning has become more important than parsing. To know that virtue in "Virtue ennobles us" is a common substantive, of the neuter gender, the third person, the singular number, and in the nominative case, has relatively little value. Most of us are concerned with other values that virtue might have.

Correctness in English. The determination of correctness in English must rest upon these criteria, according to the National Council of Teachers of English: [9]

1. Correct usage must find its authority in the living language of to-day.
2. It must recognize dialect and geographical variations.
3. It must judge the appropriateness of the expression to the purpose intended.
4. It must recognize social levels of speech.
5. It must take into account the historical development of the language.

Much confusion has resulted in practice by the acceptance of arbitrary standards of what constitutes good English. In the list of basic principles it is apparent that the authoritarian viewpoint of what is correct is not acceptable. Good English then is "... that form of speech which is appropriate to the purpose of the speaker, true to the language as it is, and comfortable to speaker and listener. It is the product of custom, neither

[8] S. A. Leonard and H. G. Moffett, "Current Definitions of Levels in English Usage," *English Journal*, Vol. 16, May, 1927, pp. 345-359.

[9] National Council of Teachers of English, *An Experience Curriculum in English* (New York, Appleton-Century-Crofts, Inc., 1935), p. 242.

cramped by rule nor freed from all restraint; it is never fixed, but changes with the organic life of the language." [10]

Levels of usage. Undoubtedly the most significant interpretation of this definition for teaching practice has been made by Pooley in his discussion of levels of learning.[11] He says that in American speech from Maine to California, six levels of language use may be recognized. They are: "(1) the illiterate level, (2) the homely level, (3) the informal standard level, (4) the formal standard level, (5) the literary level, and (6) the technical level." Obviously, they are not distinct nor mutually exclusive. Nor are they entirely arranged in ascending order beyond level three. The elementary teacher is interested in obtaining more proficiency at level three and in moving individuals up from levels one and two. This recognition of the speech level of a child offers much to enable the teacher to provide better for individual work. A brief characterization of the six levels is as follows: [12]

1. The Illiterate Level

The most surprising fact about the illiterate level of speech is its widespread uniformity. It is not merely a haphazard series of lapses from standard English, but is rather a distinct and national mode of speech, with a fairly regular grammar of its own. It is characterized principally by inversions of the forms of irregular verbs, the confusion of regular and irregular verb tense forms, a bland disregard of number agreement in subjects and verbs and pronoun relations, the confusion of adjectives and adverbs, and the employment of certain syntactical combinations like the double negative, the redundant subject, and the widely split infinitive. Some examples of the consistent grammar of illiterate English follow:

1. Inversion of the parts of irregular verbs: I *seen, done, come, give,* etc. (past tense)
2. Simplification of the verb *to be*
3. Confusion of regular and irregular verb tense forms:
   Growed, throwed, swang, clumb, etc.
4. Reduplicated preterits:
   Drownded, attackted, casted
5. Lack of number agreement in subjects and verbs:
   Four boys *was* arrested.
6. Confusion of number and case in pronouns:
   Us boys went; for *we* girls
7. Confusion of adjectives and adverbs:
   The girl sings *beautiful.*
   I don't feel too *good.*
8. Syntactical combinations:
   That there critter is lame.
   We ain't got *no* bacon.

These are, of course, only a few of the typical forms and constructions of the illiterate level, but they are practically universal in American speech of this level. An exceedingly interesting and full account of the common speech in America

[10] Robert C. Pooley, "The Levels of Language," *Educational Method,* Vol. 16, March, 1937, p. 290.
[11] *Ibid.,* p. 291.
[12] *Ibid.,* pp. 291-295.

may be found in Chapter IX of *The American Language* (Fourth Edition), by H. L. Mencken.

2. The Homely Level

Many writers on speech levels do not distinguish the homely level from the illiterate level, perhaps with considerable justice. But there seems to be a fairly universal area of speech use lying between the completely vulgar and the informal standard levels. It often has a slightly quaint or old-fashioned cast to it and displays, in many of its specific forms, the survivals of words and idioms once widely used but now dropped from standard speech.... Characteristic forms of the homely level are:

It *don't* matter a bit.
I *expect* you're the new teacher.
I *can't hardly* do it.
Now where are we *at?*
Lay down; *set* up to the table.
He *raised* (or *rared*) up and shouted.

To these fairly universal forms must be added the distinct uses of regional dialects like: *to home* for *at home,* of New England; the use of *admire* for *like,* of the South; and the use of *pack* in the sense of carry or wear, of the West (he *packs* a mean gun).

The homely level is perhaps the more characteristic speech form of the American people as a nation. Its users are neither completely "illiterate" nor fully "cultured." It is the speech level in the homes of the vast majority of children who attend our public schools, and its forms and peculiarities make up the greater part of the so-called "errors" in English which are heard in classrooms across the nation.

3. The Informal Standard Level

It is exceedingly difficult to draw a sharp line of demarcation between the homely and informal standard levels, on the one hand, and the informal standard and the formal standard on the other. The best way to describe these three levels is to illustrate their central characteristics, and to allow readily that they shade imperceptibly one into another, eluding all efforts at exact delimitation. In a general way informal standard English may be defined as the aggregate of grammatical forms, syntactical constructions, and idioms which pass current among the more discriminating users of English for all common and everyday purposes of communication. It avoids equally the laxness of the homely level and the stiffness of the formal standard level, yet in any extended conversation conducted in the informal standard level some characteristics of the homely level and the formal standard level will be observed. Nevertheless, and despite these occasional intrusions, informal standard English is a clearly recognizable form of speech. Much of the quibbling over the minutiae of "correct English" among people of some education and culture has its basis in the failure to recognize and allow differences which exist between the informal standard and the formal standard levels. Worse yet, much of the time spent in English classrooms on "diction" and "correct usage" is employed in the ignorant zeal to replace usages of informal standard English, which are in perfectly good standing, with formal or literary usages, which are indubitably "correct" but frequently out of tune with the spirit of the communication into which they are forcibly injected.

The examples of informal standard English are naturally legion, since this level is the core of the spoken and written English of to-day. For that reason the examples listed below have been chosen to illustrate the usages which are generally accepted in informal communication, but which are excluded from formal standard English.

Examples

He *blamed* the accident *on* me.
The picnic was a failure, *due* to a heavy shower.
No one knows what *transpires* in Washington.
Does any one know *if* he *was* there?
I have never seen any one act *like* he does.
His remarks *aggravated* me.
Where do you get *those kind* of gloves?
We had just two dollars *between* the four of us.
I *can't help but* go to the store.
Who did you send for?
John is the *quickest* of the two.
They were *very pleased* with the new house.
It was *good and cold* (*nice and warm*) in the room.
I *will try and do* it.
They invited John and *myself*.
When did you *get through with* your work?
As long as you have come, we can start.
It was awfully nice of you to come.

4. The Formal Standard Level

Formal standard English differs from the informal level principally in a subtle change in the tone and effect of the communication as a whole. This change rests on a number of slight alterations and substitutions in vocabulary and syntax, which when taken by themselves would be scarcely noticeable, but in combination produce the formal level. In general the characteristics of the more formal style of communication are these:

1. More exactness and greater selection in vocabulary, with the definite avoidance of words, constructions, and idioms distinctly associated with informal speech
2. Greater precision in formal agreement of number, both in subject-verb and pronoun-antecedent relationships, and in case-agreement of pronouns
3. The avoidance of contractions in speech and writing, and of abbreviations in writing
4. More precise word order, particularly with respect to the position of modifying words, phrases, and clauses
5. More varied and complex sentence structure, tending toward periodicity

In this level of English speech will be found the public address and the formal writing of educated people.

Examples

I *shall* be glad to help you.
Neither of the men *was* injured.
Here are three *whom* we have omitted from the list.
I *had rather* stay at home.
I am rather absurd, *am I not?*
It *behooves* me to complete this work.

5. The Literary Level

The attempt to distinguish a literary level of English use as a form of language recognizably different from the formal standard level is an enterprise fraught with some danger. It requires beyond all doubt a more limited definition of literary English than that usually given in textbooks.... It is, therefore, assumed that what is commonly called *correct* English includes the usages of at least three levels: the informal standard, the formal standard, and the literary levels. Correctness within this area rests upon a sensitivity to the appropriateness of the usage, rather than upon an arbitrary right and wrong.

Literary English is taken to mean that form of speech or writing which in aim goes beyond mere utility to achieve beauty. It differs from formal standard English not so much in kind as in purpose and effect. In diction it seeks not only accuracy in meaning but also a subjective quality of suggestions aroused by the sound of the word or the associated ideas and feelings. In form it goes beyond mere orderliness to achieve rhythm, symmetry, and balance. In every respect it surpasses the ordinary prose of communication in the attainment of esthetic values transcending the needs of everyday expression.

6. The Technical Level

The technical level in English use is characterized principally by a vocabulary peculiar to the specific field of knowledge, activity, or sport in which it is used. It is not necessarily a characteristic of learning or advanced training. The baseball "fan" and the devotee of the prize-ring have each a technical vocabulary as puzzling to the uninitiated as the professional patter of the physicist or entomologist.

The technical level in modern English is best illustrated by excerpts from professional writings in specific fields. One selection is added below to show the technical level as it appears in the popular field of sport. Technical words, or common words used in a technical sense, are italicized.

After *carrying* the first and second *rounds*, Black experienced some difficulty in the third. Pirrone *rocked* him with a *right swing*. All the time, however, the *east sider* found some fine openings for his short blows, those with his *right* serving to *hang a mouse* over Pirrone's left eye.

Informal standard level aim of elementary school. The standard for good English, as far as elementary school is concerned, is the informal standard level. Many pupils do not use English of this level naturally, so the teaching job is really to help them acquire a new dialect. Their basic dialect has been acquired at an early age, practically entirely by ear. The job of real education, or changing of these basic patterns, must proceed slowly by opportunities to hear and use the higher level of speech. Unless the school program has been effective in altering the level of his real speech, no progress has been made. No matter how glibly he can repeat rules of usage, the only change which is significant is in his basic speech habits. Pooley makes these teaching suggestions: [13]

1. Gain the respect and confidence of the child.
2. Show him the need for new patterns of expression to meet the standards of the classroom.

[13] *Ibid.*, p. 297.

3. Repeat the patterns (e.g., I *saw,* I *did,* etc.) aloud, dealing with one at a time.

4. Conduct frequent conversations with the class, calling for the use of the forms being taught. Each child should practice the use of the new pattern, and should hear others use it.

5. Correct, patiently and without irritation, the lapses of the student.

6. Limit this procedure to but few forms at a time, to permit of concentrated effort.

7. Limit strictly the time allotted to these exercises, so that they may contribute to free speech and writing, but not usurp their place in the English classroom.

III. WHAT LANGUAGE EXPERIENCES ARE VITAL TO THE CHILD?

Thinking is the foundation of all the language arts. Word calling, unthinking repetition of stories read or heard, uncritical acceptance of others' statements are not real education. And this is very largely what is being taught in schools today. As long as the child can say the words correctly, it is thought that he can read. If he can "give back" the stories he hears or reads, parrot fashion, and find the answers to fact questions, it is thought that he understands and has learned. The child may of his own accord do some thinking about the story or the information. Unless he does it is of little value to him.

One teacher used the plan of never asking the child to retell what he had read or heard. Instead she asked his own *reactions* to it. If the youngster is not expecting this approach, he often hasn't much of an idea what to say. Her plan, then, started out by building up a readiness for the story or information, as is often done, but included in it a thought-provoking statement. She might say to a first grade, "I wonder what you will think of the way Tommy solved his problem," "I wonder if you can think of some other way he could have solved it." Then after the story is read either orally or silently, the children are all set with their ideas, and a lot of good thinking is going on. This can be adapted to any similar situation in any grade and changes the whole purpose and procedure of reading or listening. *It is probably the most significant procedure in developing the language arts.*

Hildreth says, "Reading is 'thinking,' so poor language comprehension is the cause of reading disability." [14] Kaplan says that oral language is most important, for we *think* as we can *say.*[15] The *Review of Educational Research,* which discusses the language arts, has a chapter entitled "Language and the Higher Mental Processes" [16] which deals with the development of thinking. It points out that the child needs things to think about,

[14] Gertrude Hildreth, "Interrelationships Among the Language Arts," *Elementary School Journal,* Vol. 48, June, 1948, pp. 538-549.

[15] Louis Kaplan, "Modern Trends in Teaching Language," *Elementary School Journal,* Vol. 48, May, 1948, pp. 476-483.

[16] Vol. 13, April, 1913, pp. 88-114.

such as information and experiences, and things to think with, such as vocabulary and facility in expressing ideas and concepts.

In emphasizing the fact that ability in the language arts is more than being able to recognize and say words or sentences or stories, one author locates "New Horizons." [17] He points out that the child must learn how to distinguish between word and fact, between the symbol and the reality. He must recognize the language that describes feelings, opinions, judgment, and that which describes fact. The first grade is none too early to make a beginning in this direction, and increasingly through the grades children should be led to differentiate and evaluate. They should use the context, previous experience, and present intention of the person speaking or the author to determine significance. They should learn to guard against unwarranted generalities and to keep their judgments tentative.

Everywhere writers point out the advantage of rich, full, and varied experience for thinking in all phases of the language arts. Over and over studies have shown that the activity program not only develops mastery of the fundamental knowledges and skills fully as well as any traditional program, but that it is "more effective in developing children's attitudes, interests, social behavior, ability to think and ability to work on their own initiative." [18] These are the fundamental things needed in any good educational program and certainly as a basis for meaningful communication.

An experiment was tried in developing thinking in the third grade [19] in which great gains were made in only four months. The teacher guided the pupils in solving the problems of the classroom. The children helped to plan the activities according to their own thought-out and established purposes. They were free to discuss all problems. They grew in self-direction, self-discipline, good habits and attitudes. No one can be forced to think; but these children, through their planning, developed a feeling of responsibility which led to *real thinking,* rich and varied experience, as well as information and functional skills. The teacher who next took the class felt that in addition to all this, the group excelled all others she had had in enthusiasm, inquisitiveness, and creativeness.

Glaser set up a group of questions by which to check evidences of growth in critical thinking in his experiment:

1. Does the child show increasing sensitivity to vague or ambiguous words or phrases and ask what they mean (awful, swell, radical, democratic, etc.)?
2. Does he tend to question the authority for a statement?

[17] John J. DeBoer, "New Horizons for the Language Arts," *Elementary English Review,* Vol. 23, March, 1946, pp. 108-114.

[18] J. Wayne Wrightstone, "Evaluation of the Experiment With the Activity Program in the New York City Elementary Schools," *Journal of Educational Research,* Vol. 38, December, 1944, pp. 252-257.

[19] Norma Grener and Louis E. Raths, "Thinking in Grade III," *Educational Research Bulletin,* Vol. 24, February, 1945, pp. 38-42.

3. Does he require evidence in support of any conclusion he is asked to accept?
4. Does he distinguish facts from interpretation of facts or false inferences? (For example, "According to the report of the National Resources Planning Board, 87 per cent of the families in the United States had an income of less than $2,500 during the years 1935-36. *This proves that most people are too lazy or too stupid to earn more.*")
5. Does he see relationships between related facts and draw warranted generalizations?
6. Does he collect and organize facts into a coherent unit and show how his conclusion follows logically from those facts?
7. Does he consider negative as well as positive evidence on the question he is discussing?
8. Is he tolerant of new ideas and open to the consideration of new evidence? [20]

The child's progress in meeting these criteria will be slow. The teacher, however, needs to be aware of these goals all through a child's education.

Language experiences. Language experience must be carefully planned. In too many cases the stress on incidental teaching has led to the neglect of opportunities to develop language abilities. The teacher must be conscious of the various types of language experiences and the situations in which they can be developed. The chapter on Teacher's Methods in Language Instruction in the Yearbook on Language [21] has many illustrative procedures which are suggestive. The situations occur both within and without the unit. Situations that have stimulated children to speak spontaneously and write purposefully have been listed: [22]

Oral Communication

Conversation and discussion
Messages, announcements, and reports
Plans and evaluations
Dramatic activities
Performance of social amenities
Choral speech
Informal telling of jokes and riddles
Assembly talks
Club meetings
Listening to radio broadcasts

Written Communication

Letters and notes
Diaries, reports, and records
Experience stories
Imaginative writing

[20] National Society for the Study of Education, *Teaching Language in the Elementary School, Forty-Third Yearbook,* Part II (Chicago, University of Chicago Press, 1944), p. 65.

[21] Angela M. Broening, "Teacher's Methods in Language Instruction," *Forty-Third Yearbook* of N.S.S.E., Part II (Chicago, Ill., Department of Education, Chicago University, 1944), Chapter VII.

[22] San Diego County Schools, *op. cit.,* pp. 36-45.

Reviews and summaries
Bibliographies
Rules
Charts and posters
Notes, memoranda, and outlines
Labels, titles, and signs
Announcements, notices, and advertisements
Directions and explanations
Filling in forms

Radio programs. It has only been quite recently and in relatively few schools that children have produced radio programs. Much listening has been done. Clever teachers have had children construct toy microphones and "pretend" broadcast programs to their class or school. However, more and more are children producing programs and presenting them over their local stations. Such work is described particularly well by Callahan, Levenson, Novokovsky, Tolleris, and Woelfel (see bibliography). The motivation involved in "going on the air" is tremendous. The learning which comes from planning, writing, and rehearsing such a real life experience is inestimable. Thinking, expression both oral and written, speech and voice development, all gain greatly in such purposeful activity. Be certain, however, to have *all* children appear on such a program. If numbers prevent all appearing at the same time, then divide the class into groups for successive appearances. It is too often the tendency when presenting any kind of program for the public to use only the most talented. *This can not be defended on any grounds.* The child who needs experience is denied it. The child who does not need it is chosen again and again until he begins to feel quite superior. In fact he thinks he is discriminated against if he is, on some occasion, not included!

Language opportunities in units. Many opportunities arise in connection with the regular units of work to develop these various phases of language ability. Language experiences are best developed in situations where children have something to say and some reason for saying it. One of the most interesting studies of opportunities to develop language abilities in connection with the social-studies and science units was done by the teachers of Burbank, California. The teachers from kindergarten to grade six listed the related reading and language activities. The complete compilations from certain grades are reproduced to show the variety and types of language opportunities which are available to the alert teacher.

READING AND LANGUAGE ACTIVITIES UTILIZED IN UNITS OF WORK AS LISTED BY CLASSROOM TEACHERS [23]

Reading Activities—Grade I
Stories and poems read by the teacher
Labeling of pictures and objects in room

[23] Extracts from a bulletin compiled by elementary teachers under the direction of Lillian Lamoreaux, "Learning Activities Found in the Elementary Schools of the Burbank City School System" (Burbank, Calif., 1935).

Looking at books, relating to the unit, on the library table
Relating individual experiences
Making coöperative charts
Making dictionary charts
Making individual charts relating to the unit
Reading individual books made from charts
Reading and making stories for moving pictures
Reading bulletins from board
Reading pre-primers relating to the unit
Making chart stories about things brought to school
Dramatizations
Learning the names of some things relating to the unit
Doing seat work related to the unit
Reading of daily news
Reading simple books from public library
Reading of "Pre-Primer Weekly"
Simple silent reading to answer questions
Reading aloud parts of stories, playing the part of some character
Book reports
Keeping library chart record
Playing class games using words relating to the unit
Gathering and labeling exhibits

Language Activities—Grade V

Group discussions on unit
Room discussion and contributions on unit
Dramatization of unit material
Reading of original composition of poetry
Telling of stories based on units
Oral contrasts of races, occupations, and homes
Organizing and carrying on a class club
Plays given with audience situation
Giving of poems related to unit
Stories of imaginary travel
Oral discussion on the rights of the constitution
Oral comparisons made of living conditions in sections of U. S. A.
Oral discussion of care of exhibited material brought from home, etc.
Bringing in of related questions, discussing and classifying them
Developing poise in talking before groups with and without notes
Trip to Exposition Park
Giving plays for class
Giving plays for P.T.A.
An excursion to Pony Express Museum
Field trip to city parks to study trees
Compositions related to units (individual)
Booklets compiled of unit material
Spelling words listed to use in written work of unit
Written work of reports of group activity
Written material taken from research
Reproduction of stories
Written drill to eliminate overuse of *and, well, so, but*
Written words to enlarge vocabularies
Written plays to give to group or other audiences

Written spelling
Written material to emphasize capital letters
Written outlines
Written questions for class or group check-ups
Writing of poems (original)
Writing of stories
Writing of letters (business and social)
Writing of itineraries
Production of written travelogues
Writing of one-paragraph reports
Writing of coöperative outlines with one sub-topic
Writing of bibliographies
Making of spelling lists to be used in spelling bees
Writing of one-paragraph reports about inventors and inventions of the nineteenth century

Continuity of development must consider maturation. Maturation is a concept as important in language arts as it is in the other areas. The development of the child in the ability to deal with language is gradual. The teacher needs to be familiar with this development in order to guide him intelligently. The idea that certain skills had to be mastered in a given grade by all children has disappeared. Continuity of experience is necessary if the child is to deal with situations on an increasingly complex level. In too many programs the experiences offered do not provide for continuity of development.

Teachers should recognize where each child is in each phase of his language arts development. She should then provide experiences and expect growth from that stage. Expecting progress from any other point is worse than useless. In an activity program it is easier to provide experiences on the desired level. However, this does not happen in this type of program much more than any other unless experiences are specifically planned.

IV. TYPES OF PROGRAMS IN LANGUAGE ARTS

Contrast in practice. No longer are the courses of study written by listing the pages and topics in the text which are to be completed each month. Some courses still list reading separately with the language arts, including oral and written expression, grammar and dictionary use, spelling, handwriting, and library services.[24] And another includes oral and written expression, usage, punctuation and capitalization, grammar, use of the voice, and correction work in speech.[25]

Practically all the courses of study which have been written recently have included oral communication, talking and listening and written communication, reading, and writing. These may be given in different order with differing amounts of emphasis. Some include speech, spelling,

[24] State of Wyoming, Department of Education, *A Guide for the Program of Instruction in the Language Arts,* Bulletin No. 18, Series C.S., 1945.

[25] Youngstown Public Schools, *A Tentative Course of Study in English.*

and handwriting as separate topics, and some include them as phases of the main topics.

Greater and greater emphasis is being placed on the importance of oral language. One school has built a whole course of study for oral language.[26] It does not set grade standards but rather is written in three sections for primary, middle, and upper grades. The topics included are:

Conversation and discussion
Making announcements, explanations, and giving directions
Dramatic play and dramatization
Telephoning
Choral speaking
Telling stories and experiences
Common courtesies
Listening
Good usage
Conducting meetings
Oral reading
Making talks, oral reports, speeches, and debates

Many courses list suggested units with the opportunities to utilize language in each unit under such headings as group discussion, reading, interviewing or listening, writing letters, language expression, language interpretation, and dramatic interpretation. They realize that all work will not grow out of the unit, so their sections on experiences, in addition to those of the unit, include suggestions for experiences in reading, with many suggested readings, oral expression, written expression, language interpretation, spelling, and handwriting.

A gradual development with selected suggestions. The Texas course in language arts in the elementary school consists of charts for the development of reading abilities throughout the grades, a chart for remedial reading procedures, sample units in grades one and six, lists of stories classified according to themes for the primary level and the intermediate level, a list of situations in which people express themselves, a section on the effective expression of thought, a developmental chart for expressing ideas in good form on the two levels, and sections on spelling and handwriting.

Such a course furnishes a point of view and material that can be utilized by the teacher. It is a guide for the teacher—for the teacher could not follow it directly. It assumes that language will be developed in relation to all situations in which language is used in the school. This course, for which J. Paul Leonard was language consultant, was part of a program of curriculum development of Texas, for which Fred C. Ayer was general consultant. The Texas course is an illustration of the type that provides many valuable suggestions for the teacher, at the same time making it

[26] *Course of Study for Oral Language in the Alhambra City Schools* (Alhambra, California, Alhambra City School District, 1913), 104 pp.

impossible for her to follow the course in one-two-three order. In many cases such courses represent a compilation of the available material in the field. In the best courses, such as Texas, the material is selected with one point of view; in other cases it is a sadly conflicting conglomeration of material.

V. BASIC GUIDING PRINCIPLES

The statements in this section are valuable guides to the work of the teacher or the thinking of a committee which is developing a course of study. Some of the statements are based on research; others are from competent workers in this area; all are consistent with the point of view developed in this chapter.

1. Language is that mode of social behavior whose primary function is communication.
2. No worthwhile language experience takes place without thought.
3. Giving the child rich and varied experience is of first importance. When first hand experience is impossible, vicarious experience should be provided.
4. Expect child to use his experiences as a basis for thinking, saying, and writing.
5. Expression is a reflection of the general personality pattern.
6. The program of language should center upon content rather than form.
7. Excessive and premature emphasis on formal correctness may prove to be an actual deterrent.
8. Language is learned like any other mode of social behavior.
9. Language must be considered a part of every school activity and not limited to artificial situations during language period.
10. Language development is best accomplished through a purely functional approach in which expression follows experience in purposeful activity.
11. Artificial stimulation of basic language structure is almost fruitless, for structure appears to be the outgrowth or expression of experience.
12. Language should be carried out in a free and informal atmosphere.
13. Departure from the literary standard does not necessarily lead to the corruption of the language.
14. Corrective language work is an individual matter.
15. Drill work should be in terms and as a result of a real need which is realized by the children as well as the teacher.
16. Good emotional health is fundamental to good speech development.
17. The speech level of the child is most effectively altered by training of the ear.
18. The speech of the child under natural situations is the measure of his speaking level.
19. Oral language activities have a much more important part than has usually been accorded them.

VI. DEVELOPING BETTER ORAL COMMUNICATION: TALKING AND LISTENING

Communication is two-way. We must continually think of this process of communication as a two-way proposition. There is no use of either the child's or the teacher's saying anything unless someone is reacting to

it. Hence, what is said needs more careful thought. Also it becomes of paramount importance to see that there is a reaction, to consider what that reaction is, and to do all we can to make that reaction as educative as possible. Under this procedure, listening becomes a very active and a very important part in quite a different sense than that in which teachers used to think of it. In the traditional school the child was to sit with hands and feet and body still, eyes on the teacher, and listen "quietly and courteously" to the pearls of wisdom which fell from her lips. Then, since she had spoken the ideas or information, it was assumed that the children should know it. Why is it that children are always told to listen *courteously* and never *thoughtfully*?

Passive listening develops lack of attention and lack of interest in other people which is detrimental to friendship and understanding. Schools could well spend some time thinking through and then doing something about the question, "What is a good listener?"

The classroom situation helps or hinders. We now realize that those traditional schools did more to hinder development in language ability than they did to further it. The quiet school-room where one could "hear a pin drop," except for the teacher's voice and the occasional answer to a question given by a child, was the greatest handicap that could be imposed on language development.

Modern education recognized the tremendous importance of developing this art of communication. No longer is it demanded that children be quiet, except for certain times when all are actively listening together for the purpose of reacting to what is being said. Instead one group will be working on a project in a corner of the room, discussing ways and means, and planning together. There is the give and take of ideas, acceptance or rejection of criticism, and new plans built from old, or carried to a completion which satisfies the purposes of the children. Learning to disagree graciously with one's fellows and to accept such disagreement is something to be learned early in life. Many adults find it difficult to disagree with another's opinions in an affable, pleasant manner. The free-discussion group is a good training ground for courteous disagreement.

In another group children are working on their own projects with only an occasional word to a neighbor, a request, a word of approval or appreciation. A third group is working with the teacher. But it is the children who are doing most of the talking, with the teacher throwing in a guiding question now and then. (You see, she already knows how to express her ideas and doesn't need the practice!) In spite of all this "confusion," as the traditional teacher would have labeled it, no one is being disturbed. The children, through their own experience and the guidance of the teacher, have set up their own standards. If every one talks quietly, and within each group every one listens thoughtfully to what the speaker is saying, it doesn't disturb anyone. Every one is intent on his own project and is accustomed to the reasonable amount of noise about him.

The social amenities. It is particularly important that children have the opportunity to learn the social amenities in the school situation. This is the situation where they have most of their supervised group experience and hence provides the most effective opportunities. However, too often these opportunities are missed.

"In some schools there is a dearth of instruction in the pleasantries and social amenities which are fundamental in courteous speaking and writing. Indeed, one can find in schools situations which eliminate even an opportunity to practice certain amenities. For example, the custom of raising hands in conversations or discussions does not permit the pupil to learn such an amenity as proceeding courteously when he and another person begin to talk at the same time. Yet, it seems reasonable to say that the school's program in oral and written expression should provide instruction which seeks to help the pupil to become a pleasant and courteous speaker and writer. After all, the child's pleasantness and courtesy in speaking and writing have a great deal to do with making others willing and eager to communicate with him." [27]

Problem solving helps. The system of teaching through the solution of problems has helped to develop the art of communication. Here the children all have a real purpose. Everything that is contributed needs to be evaluated in terms of its value in the solution of that problem. It provides opportunity to develop critical thinking as nothing else can do. Then when the child has a clear and vital thought, he wants to express it clearly. It is only as the school provides opportunity for children to express their ideas, listen thoughtfully, think critically, and react to what they hear that we can expect to develop this tremendously important ability of two-way oral communication.

Definite teaching is essential. Too often the teacher thinks she has fulfilled her responsibility when she has provided stimulation and opportunity. This is not enough. Children are told to carry on a conversation without ever knowing any of the essentials of a good conversation. They are asked to make reports without being taught any of the essentials which go to make up a good report. And further, they are not given the opportunity for evaluation so that they may know what is desirable and what would be better done differently. As McKee says, "It is no wonder, under such circumstances, that pupils in a given class speak and write with little or no more effectiveness in June than they did in September." [28]

McKee also lists ten important activities to be taught:

"An examination of the speaking and writing situations with which he is confronted shows that, in order to carry out his worthy purposes and enterprises, the child must engage in certain speaking and writing activities. Consequently, the program of instruction in oral and written expression should teach the pupil

[27] Paul McKee, "An Adequate Program in the Language Arts," *Teaching Language in the Elementary School, Forty-Third Yearbook* of N.S.S.E., Part II, Chapter II (Chicago, Department of Education, University of Chicago, 1944), p. 30.

[28] *Ibid.*, p. 30.

to engage successfully in those important activities whenever and wherever they arise, in and out of school. With this purpose in mind it is suggested that the school provide definite instruction and practice in each of the ten important speaking and writing activities listed below. It is assumed that the teaching to be done will help the pupil to develop a feeling of responsibility for taking part in a given activity as well as to acquire the ability to take part in that activity.

1. *Taking part in conversation and discussion,* including (a) informal conversation in which there is no problem to be solved or decision to be reached, (b) discussion of a definite topic or question in which a problem is to be solved or a decision to be reached, (c) interviews, (d) the making of introductions.
2. *Using the telephone,* including (a) answering various types of calls, (b) making various types of calls, (c) talking and listening on the telephone.
3. *Taking part in meetings,* including (a) acting as chairman, taking part as a member of the group in a meeting of a club, class, or other organization, and writing the minutes of a meeting, (b) acting as a chairman, a performer, or a member of the audience in a school assembly.
4. *Giving reports,* oral and written, including (a) the report of a personal experience or an experience of another person, (b) the so-called special topic report, (c) the different types of talks and speeches.
5. *Telling and writing stories,* including (a) the joke or anecdote, (b) the story previously heard or read, (c) the story made of a personal experience or an experience of another person, (d) the imaginary story.
6. *Giving reviews,* oral and written, including reviews of books read, radio programs heard, and movies seen.
7. *Giving directions and explanations,* oral and written, including particularly (a) directions for getting to a certain place or for making something, (b) explanations of how something was done or made.
8. *Making announcements and notices,* oral and written, including (a) the oral announcement of a meeting to be held, or a party, exhibit, or program to be given, (b) written notices covering the same types of events.
9. *Giving descriptions,* oral and written, including particularly the description of an object or a person to be identified by others.
10. *Writing letters,* including (a) friendly letters such as the informal note, the news letter, the letter of sympathy, the thank-you letter, the congratulatory letter, invitations, and replies, (b) business letters such as orders, requests for information or sample goods, applications." [29]

The items which need to be taught are then grouped under four headings. From thirteen to twenty-five are listed under each.

Group 1. *Those items essential to deciding what to say or write—to selecting ideas to be expressed*

Group 2. *Those items essential to speaking and writing simply, clearly, and exactly enough so that others can understand what is meant*

Group 3. *Those items essential to speaking and writing pleasantly and within the limits of the social amenities that should accompany communication with others*

Group 4. *Those items essential to speaking and writing correctly as judged by the standards of good usage developed by the practices of cultured persons* [30]

Practically all courses of study now include sections on oral language and conversation. Many of them offer little that is of specific help. An

[29] *Ibid.,* pp. 12-13.
[30] *Ibid.,* p. 13.

example of a very helpful course of study is the one from Tulsa.[31] It outlines a unit on conversation which includes how to take part in conversations, the importance of having interesting things to tell and ask (with consideration of appropriate topics and standards in terms of the group to which they are talking), speaking clearly and correctly in a pleasant voice, introductions (the how and why), with a good section on pupils' evaluation of their conversations.

Alhambra has gone farther in that they have a whole course of study for oral language. They list the outcomes which they hope to achieve from the program:

Outcomes of Oral Language

The modern school with its many opportunities for rich and varied language experiences should work toward the following outcomes:

The ability and desire:

1. To achieve clear and effective expression through a pleasing voice quality, distinct enunciation, and correct pronunciation.
2. To possess poise, confidence and self-assurance in all social situations.
3. To demonstrate in all language situations tolerance for the viewpoints of others.
4. To arrive at decisions through full, orderly, democratic discussion.
5. To use the English language with increasing skill to express both beauty and thought.
6. To converse graciously with others, to agree and disagree courteously, and to have due regard for social amenities in all one's relationships with others.
7. To develop ideas and to express them fully in clear, correct, and concise language.
8. To reproduce through adequate habits of listening what has been heard and to react critically to it.
9. To develop habits of correct speech.[32]

Where to begin. As the little child enters the kindergarten, many restraints are placed on him that he has never experienced before. He has talked to himself, or to imaginary people in his little world at home; very often he has needed no listener to satisfy his early conversational attempts. He has lived in his own house, little compared with the large school building, with one or two people interested in all he does or says. Suddenly he is thrown into a huge building with many people moving here and there, few of whom are at all interested in him or his activities. He must not talk all the time; he must not talk too loudly. He must consider many people instead of one or two. This is a tremendous change for a little child, and this change to a new kind of life must be bridged gradually.

Allowing children to talk about their daily activities, their building, their drawing, their games, their stories, their songs, their play, will give them an opportunity to learn to talk in turn and to express themselves

[31] *Suggestions to Teachers for Guiding the Experiences of Children in Reading, Language, and Social Studies* (Tulsa, Oklahoma, Tulsa Public Schools, September, 1941), For grade Four, pp. 341-349.

[32] *Course of Study for Oral Language* (Alhambra, California, Alhambra City and High School Districts, September, 1943), p. 6.

about what they do. A coöperative activity is a great stimulant to free conversation; constructing an airport with blocks, making a zoo, building a train, a store, or a post-office are ideal projects for mutual interests and conversational material.

Something to talk about. The school must assume the responsibility of providing enriched surroundings and inciting stimuli for both reading and discussion. Going on trips to see first-hand the way one's community functions offers rich returns in knowledge and interest. Most elementary-school children have for some time been given the benefits of excursions. Teachers have capitalized on the excursions as an excellent opportunity for speech development. There are many occasions for the use of natural and spontaneous conversation on trips of this kind, asking questions courteously, making suitable remarks about things, thanking guides or helpers for assistance on tours.

In construction work or discussion groups after one of these trips, conversation is always free and natural. Every child has something to talk about. Every other child is interested in what is being said. There is a mutual ground of interest and a keen desire on the part of all to discuss what has been heard. This is a perfect setting for interesting and stimulating conversation.

A stimulating room. Since we know the things that appeal to children, that most easily stimulate concepts and ideas, we should surround their lives with materials and books that will work toward this end. It is not difficult to have in the school-room temporary collections of different kinds of pets, experiments, minerals, toys, pictures, books, clippings, flowers, things from far and near. There will be no lack of ideas for expression in rooms that are filled with things to look at and talk about. None of us would be so inspired to talk interestingly in an empty room as we would be in an unusual home library, a museum, at a contest, or at an exhibit. An interesting corner in a room where children can always find new clippings, pictures, flowers, books, or other idea-building material is a stimulus for conversation and an opportunity for education which a teacher should not miss.

Audio-visual aids. Pictures, both stills and motion pictures, provide stimulating experience which can be the basis of much good discussion. This can also lead to learning better observation. As differences of opinions arise after the children have seen the picture, a chance to see it again sharpens their attention and they "see" more.

Radio broadcasts are a gold mine for the teacher with imagination. There are several books and pamphlets which give suggestions for the use of radio in the elementary school.[33] These should be helpful, for most

[33] Harrison B. Summer, *Tomorrow's Radio Programs,* The Federal Radio Education Committee, U. S. Office of Education, Federal Security Agency (Washington, D. C., Government Printing Office, 1944), 15 pp.

Roy DeVerl Willey and Helen Ann Young, *Radio in Elementary Education* (Boston, D. C. Heath & Company, 1948), 450 pp.

teachers are still missing many opportunities. One study [34] used the reports of twenty teachers who had been selected as skilled and interested in radio. These teachers sent in 205 reports and listed activities preparatory to, during, and following-up the broadcast and conditions while listening. One of the greatest values they found was that the teacher and children were listening and learning together, which helped teacher-pupil relationships. The most disconcerting thing that was found was the narrow range of activities which were stimulated by it. The teachers' greatest concern was having the pupils remember the contents of the broadcast and give details. In no classes, or at best in only a very few, did the children evaluate the program, use the program as motivation to write a similar script, give a make-believe broadcast, name committees to take action on matters suggested by the broadcast, carry on experiments to settle a question raised, report or demonstrate to another class the knowledge gained. Instead of making the most of a new and vivid method of presentation, a purposeful listening situation, teachers tried to make it contribute only in the same way their text or perhaps a reference book would, by fitting it as closely as possible to what they were already teaching, and missing almost entirely the value as a new and worthwhile experience in itself.

Verse speaking choirs can do much to help develop speaking habits for some children. They help the child who speaks too loudly, too softly, too hoarsely or too shrilly. It helps the child speak more distinctly, promotes tonal variety, and accustoms the timid child to hearing his own voice. As the teacher is working with a group, it takes the pressure or criticisms from any one child. Many times a child can do things with a group that he could not possibly do by himself.

Puppetry serves to a certain extent the same purpose. Hand puppets are particularly useful here, for any child can manipulate them. When the youngster becomes involved in the problems of the puppet he forgets himself. As the puppet, he talks more freely both in what he says and how he says it than if he were speaking for himself. That, too, is an advantage of a make-believe microphone. Children can talk into it much more freely than they can stand before their group and talk. The most timid might use the microphone out of sight around the corner, pretending they were broadcasting from the station and the children were listening over the radio. This would be a real reason for speaking more loudly and clearly. But remember that too low speech is basically one of emotional adjustment and must be treated as such.

Planning. Making plans to go on a trip, telephoning someone for permission to go and see his place of business, arranging for a party, building a club program are all things older children can do to give them speech experiences that will prove socially valuable. To rehearse these will give

[34] Norman Woelfel and Kimball Wiles, "How Teachers Use School Broadcasts," *Educational Research Bulletin*, Vol. 23, December, 13, 1944, pp. 227-232.

children a confidence in the task they are to perform, and this confidence will help them talk well when they actually need to do so. In this way, the teacher can give helpful suggestions as to suitability of language, having definite plans, being courteous, having tact, and being pleasant at all times. The feeling that one has something to say, and that he knows how to say it, will enable him to say it well.

Clear thinking essential to clear expression. One can not express an idea clearly unless the idea itself is clear. Helping children to clarify their thinking is an essential step. Learning to think in sentences is needed by many primary children. The development of a "sentence sense" may continue into adult life. Limiting the sentence to a single thought and showing the proper relationships between parts of a sentence needs directed practice all through school. For instance, Smith gives a pertinent example:

"Immature writers and thinkers connect by *and* ideas which are not equal, or which do not bear the relationship to one another of merely continuing the thought in the same direction. For example, a weak sixth-grade pupil wrote in a unit on industries near his school, "We went to the plant *and* we met a kind gentleman *and* he told us all about the products used there." The concise thinker would express the same experience by saying, "When we went to the plant, we met a kind gentleman who told us all about the products used there." His virtue lies not in the fact that he has eliminated *and,* but in his having seen the relationship among the ideas. One has been subordinated to *tell time* and the other, to *describe gentleman.*

Children should learn, therefore, as they grapple with the expression of ideas, that certain words show relationships between the different ideas to be expressed. They serve as sign-posts to the direction of the thought. For example, children often tease their mothers to let them go to a movie. What happens if she adds to her consent one of the following expressions?

Yes, you may go to the movie
(1) *and* you may have some ice cream afterward.
(2) *if* you earn the money.
(3) *after* you have done the dishes.
(4) *although* you don't deserve to because you haven't raked the lawn.
(5) *but* we can't buy a popgun if we spend the money that way.

And adds a new joy to the occasion; *but* puts an obstacle in the way. *If, after,* and *although* "modify" the mother's consent in such a way as to "modify" or restrict the child's pleasure. Appreciation of these relationships in *thought* is much more important than ability to define grammatical constructions and has notably greater influence upon the development of correctness and exactness in expression." [35]

Constructive help. If teachers would give students constructive help in what they are to do, instead of emphasizing what they are not to do, students would develop more confidence and speak more easily. If a child is to be a club president, we can show him how he is to conduct a meeting.

[35] Dora V. Smith, "Growth in Language Power As Related to Child Development," *Forty-Third Yearbook, op. cit.,* pp. 69-70.

If he is to announce a program, we can assist him in making out his program and make helpful suggestions as to how he is to make his announcements. If he is to be the leader of the flag salute for the entire school, we should allow him to practise often before appearing, so he can perform his task without fear of failure. If he is to read or talk before the school or before a parent group, we must let him rehearse his reading or talk often enough to be sure of himself. If constructive help is given in situations of this kind before the time of appearance in front of the group, little difficulty will be experienced. The more times a child can perform a function with success, the more confidence he will have in similar future situations. Gradually he will be master of himself and his responsibilities.

The ability to express one's self adequately is dependent upon several things: having something to say, then analyzing carefully how it is to be said, being able to sense listeners' reactions, and finally a general building up of confidence in one's self. The school is the place to learn these things. There should be material and books from which to get ideas; there should be teachers to give helpful suggestions; there should be occasions and opportunities for all kinds of experience in doing and saying. It is the responsibility of the school to provide these.

Guiding principles. Some guiding principles in the development of oral communication have been developed by Caswell [36] and are useful in planning a program.

I. *Principle of social significance*
   1. Speech activities contribute in essential ways to the great majority of social processes.
   2. Oral expression provides an important avenue of cultural interpretation and clarification.
   3. Speech activities in school programs are too often mechanistic and limited in scope, lacking the setting of broad social significance and meaning afforded in normal life situations.

II. *Principle of growth*
   1. Experiences involving language should be organized with direct reference to the developmental nature of children rather than the logical arrangement of language.
   2. Performance should be in terms of the sequence of child development rather than adult standards (very little done in readiness or development).

III. *Individual differences*
   1. All children should have guidance in developing optimum command of speech processes, not just a few who either have major handicaps or unusual talent.
   2. Any plan of curriculum organization should accord individual teachers large freedom in selecting experiences for given children.
   3. Achievement expectations should never be stated in group terms but in terms of given children.

[36] Hollis L. Caswell, "Guiding Principles in Curriculum Development at the Elementary Level," *Quarterly Journal of Speech*, Vol. 29, February, 1943, pp. 81-87.

IV. *Integration*

1. Seek the development of speech abilities in the elementary school in large, meaningful situations of use, along with other language abilities.
2. Aid the regular classroom teacher to see the importance of speech and to teach it in relation to all activities in which speech is a functional element.
3. Always provide special services and instruction relating to speech in the larger setting of the program of a given classroom, never as an isolated program.
4. Always consider the effect of a proposed speech activity on the total development of a child.

VII. DEVELOPING BETTER ORAL COMMUNICATION: THE PROBLEMS OF VOICE AND SPEECH

The voice. The *way* in which one expresses his ideas is also important —that is, the beauty and power of the voice. Since the quality of tone is dependent upon mental and emotional attitudes as well as physical conditions, it must also be contingent upon the rhythmical coördination of the entire neuro-muscular organism. It goes without saying, therefore, that having a good voice depends upon a healthy mental and physical state.

One study [37] showed that the various vocal attributes bore considerable relationship to social adjustment as measured by a standardized personality inventory. Voice quality appeared to be the factor most closely related. It was recommended that a program for the development of social adjustment be used in connection with voice training. As has been said in Chapter 3, the earlier the problems of adjustment are attacked, the more chance there is of solution. Also, voice patterns become habits which are increasingly hard to break. Recognizing these two factors and the importance of a pleasing voice in all life situations, it then becomes one of the necessary jobs of the elementary school to do whatever possible to improve voice quality and speech through whatever means are effective.

We must remember that we cannot say that the pronunciation or inflection of a certain locality is not correct. There are three large areas in the United States, South, East, Midwest, which have pronunciations, local tone-colors, and modulations correct to each area; and it is not possible for one section to say that another is wrong. Therefore, it is best to take as our criteria of good speech the *best speech* of the cultured people of our locality.

Teacher's voice. The teacher's voice, diction, and means of expression are tremendously important. In the first place, children tend to imitate those whom they admire. This is more obvious when the teacher has some

[37] Melba Hurd Duncan, "An Experimental Study of Some Relationships Between Voice and Personality Among Students of Speech," *Speech Monographs,* Vol. 12, 1945, pp. 47-60.

undesirable habit, for others are more apt to notice when children imitate that.

It has been said that good teaching and good speech go together. Good speech does not insure good teaching, but it is difficult to be a good teacher with poor speech habits.[38] Others have questioned the "halo" effect of either good teaching or good speech on the other in the ratings of observers. If this is true, perhaps the children feel the same effect.

The important thing is for each teacher to be conscious of any voice problems she may have and do something constructive about them. Schwamm[39] offers suggestions for recognizing and improving speech problems. He says that a teacher can easily make himself a despot, a friend, or a completely indifferent individual through vocal usage. Each rôle he may acquire merely from habit. Teachers should recognize the need for voice appraisal, undertake the necessary training, and then check to see that they do not go back to their old habits.

Speech problems to look for. The White House Conference report indicated that about 7 per cent of the children in school had speech defects of some form or other. The elementary teacher must have some means of understanding the possible seriousness of difficulties in her room.

Speech defects were classified as follows:[40]

1. *Articulatory defects,* speech indistinct or confusing (includes lisping, lalling, cluttering and nasal speech).
   a. "Structural," where due to malformation of speech apparatus (8.6%).
   b. "Paralytic," where due to sluggishness of muscle response due to difficulty of the nerve center (5%).
   c. "Functional"—"oral inactivity" or speech clumsiness (11.5%); "sound substitution" or substitution of one sound for another (46.2%). It seems difficult to distinguish between the two types, but they make up about 58% of the difficulties.
   d. "Dialectal"—imitation of provincial or foreign language models (5.8%).
2. *Stuttering* (sometimes called stammering), a disturbance in the rhythm of speech, an intermittent blocking, may be muscular or a mere hesitation (22.1%).
3. *Disorders of voice,* indicated by huskiness, shrillness, strider, weakness, and so forth.
   a. "Functional," those without apparent organic or physiological cause (2.3%).
   b. "Structural," due to malformation of the throat and larynx (1.8%).
   c. "Paralytic" disease, such as injury to nerve or nerve-supplying muscles used in phonation (0.01%).
4. *Aphasias,* failure to make association with hearing and meaning, with graphic symbol of the sound, with articulation of the sound, or the writing of the sound (.003%).
5. *Speech of hard of hearing,* evidenced in lack of inflection and control or inaccuracy of constant sounds (0.8%).

[38] William B. McCoard, "Speech Factors as Related to Teaching Efficiency," *Speech Monographs,* Vol. 11, 1944, pp. 53-64.

[39] Gustave Schwamm, "The Teacher's Voice: Show Window of Personality," *Quarterly Journal of Speech,* Vol. 31, December, 1945, pp. 488-489.

[40] Robert West and others, "The Defective in Speech," *Special Education, White House Conference, IIIF* (New York, Appleton-Century-Crofts, Inc., 1931), pp. 349-387.

The percentage after each type is one of the best approximations to the percentage the given type is of all the speech defects.

A study of this classification indicates that before treatment can be given, the proper diagnosis of the difficulty needs to be made. After such a diagnosis, the classroom teacher who has had some training can be of considerable help with many cases. Obviously a school system of any size should have a worker trained in speech correction. This worker's responsibility is three-fold: first, to recognize and diagnose speech problems; second, to work with the classroom teacher in helping her to help the child; and third, to work directly with those few children who need special treatment. In the diagnosis, children who need the care or treatment of a specialist should be recognized and needed help obtained for them if at all possible.

Speech work should be free from hurry and embarrassment. A calming situation is needed for most cases. Substitution is most prevalent in the primary grades, and much can be done to eliminate it. However, the teacher should be aware that there is the chance that for some children substitutions are a result of structural defects. The teacher can find more detailed help by consulting the references in the bibliography, especially Barnes, Barrows, Rasmussen, Raubicheck, and Robbins and Seymour.

Stuttering is perhaps the most disturbing of the speech difficulties and has had a great deal of work done on it. One study gave the Rorschach test to stuttering and non-stuttering children. Where inventories and questionnaires did not bring out a difference the Rorschach did. It showed for the stutterers, more fantasy and withdrawal, more irritability and manic trend, more factors that indicate insecurity and compulsive behavior to compensate for it.[41]

Another study used a test of motor control on fifty stuttering children. It was found that 20 per cent showed some motor deficiency, 26 per cent severe motor deficiency and that 40 per cent were classed as "motor idiots."[42] This leaves only 14 per cent which showed normal motor control. Obviously the lack of motor control of speech is not an isolated problem but a part of the larger problem of general motor control. The next question is, What is the relationship between this motor control and the emotional problems stated above? Certainly a first step in helping a stutterer would be to try to improve his emotional health.

If a child is timid and for that reason has a very *small voice,* he must be handled very carefully. Do not force him to talk loudly when he is afraid to do so; rather allow him to develop in every way. Gradually he will have enough confidence in himself to talk loudly enough to be heard.

[41] H. Meltzer, "Personality Differences Between Stuttering and Non-Stuttering Children Indicated by the Rorschach Test," *Journal of Psychology,* Vol. 17, January, 1944, pp. 35-59.

[42] Helene Kopp, "Oseretzhy Tests (Part II of a Round Table in Psychosomatic Study of Fifty Stuttering Children)," *American Journal of Orthopsychiatry,* Vol. 16, January, 1946, pp. 114-119.

Nervous children talk very fast or *clutter one word on top of the other.* This type of difficulty can probably be helped by calming the child as much as possible and urging him to talk slowly and act more slowly. Again basic emotional problems need help.

Both *nasality* and the *hoarse voice* are believed to be very largely functional and need developmental rather than surgical treatment.[43]

Another speech difficulty noticed in many schools, especially in the districts where parents are not careful about their speech, is *sloppy, guttural* speech. This is usually a result of carelessness, placing the voice too far back in the mouth, or imitating the speech of indifferent parents. If the teacher speaks in a carefully pitched voice, with clear enunciation, many children will eventually try to imitate her. Again, she must expose these children to good literature, read aloud to them, and allow the children to read aloud.

The *monotone* is another speech problem. Many things go into the changing of the monotonous voice. First, the child must have an auditory sense, so he can hear the difference in pitch in different voices and sounds, but accompanying a change of pitch must come a change of feeling and understanding of what one is trying to say, and how he is trying to say it. The "monotone" child, like the timid child, must be developed generally. He is usually a child who hasn't much vitality, who does not play vigorously, who has not had much emotional experience—that is, he has not been very glad or very mad about anything. He must be allowed to play, to sing, to jump, to draw, to see lovely things, to be stimulated; and when he begins to feel things differently, he will begin to speak differently.

Then, there are the lip-lazy children, those who will not use their lips when they talk. Perhaps their fathers talk that way, and they think that is the best way to talk. They must learn to use their lips. Give them exercises to use the lips, such as sentences containing *b, o, m, p.*

We have also the jaw-lazy people. It takes a little more effort to open the mouth and talk distinctly; so they do not do it. They make people understand them most of the time, so why change their speech? Give them exercises which will make them open their mouths. Have them say and make sentences containing *o, ah, aw, oi* sounds.

Poetry and jingles containing the sounds needed for speech improvement are fun to say together. Mother Goose rhymes, as well as the old ballads, are rich with these sounds.

[43] Arleigh Williamson, "Diagnosis and Treatment of Eighty-Four Cases of Nasality," *Quarterly Journal of Speech,* Vol. 30, December, 1944, pp. 471-479.

———, "Diagnosis and Treatment of Seventy-Two cases of Hoarse Voice," *Quarterly Journal of Speech,* Vol. 31, April, 1945, pp. 189-202.

VIII. UNDERSTANDING WRITTEN COMMUNICATION: RECENT DEVELOPMENTS IN READING

Reading has again become one of the central problems of the elementary school. The recent consciousness on the part of secondary-school people of the reading problems of their pupils has resulted in additional pressure in regard to the reading situation. It has also resulted in increased reading consciousness and instruction on the part of secondary-school teachers. But the responsibility of the elementary school is clear. It receives children with widely differing backgrounds of experiences and abilities; and over the period of years it should develop in each child the optimum reading performance of which that child is then capable.

Reading can do much in "promoting clear understanding, developing habits of good thinking, stimulating broad interests, cultivating appreciations, and establishing stable personalities." [44] The various phases through which the elementary reading textbooks have progressed [45] show that educators believed the influence of reading had great importance. The religious emphasis typified by the following passage from an early text is an example of their faith in the influence of reading: [46]

> Then shall I praiſe the Lord
> In a more cheerful strain
> That I was taught to read his word
> And have not learnt in vain

To-day we still feel that reading can be a most significant influence in the lives of growing boys and girls, but of a different sort and for other reasons.

Recent developments in the teaching of reading. A number of changes have been made in the teaching of reading. Some of the more significant of these trends appear to be as follows: [47]

1. *Reading has come to be more a functional skill rather than a formal school exercise.* Learning to read is no longer just for the sake of being able to read the school reader. Children now read with an ulterior purpose. They read to get information, to find answers to their questions, to enjoy a story. This is true all

[44] National Society for the Study of Education, *The Teaching of Reading: A Second Report, Thirty-Sixth Yearbook*, Part I (Bloomington, Ill., Public School Publishing Co., 1937), p. 5.

[45] For a complete treatment see Nila B. Smith, *American Reading Instruction* (New York, Silver Burdett Company, 1934).

[46] From *The New England Primer*, The twentieth-century reprint of Ginn and Company, Boston, Mass.

[47] The list includes, among others, many items from the *Thirty-Sixth and Forty-Eighth Yearbooks* of the National Society for the Study of Education, and from Gertrude Hildreth, *Learning The Three R's* (Minneapolis, Educational Publishers, 1936) Chapter IV, which seem to have most significance in determining the relation of reading to the total program of the modern school. The discussion of each item is an attempt to interpret the significance of that item in such a relationship and is not the discussion presented in the sources.

through the grades. No longer is the child's only purpose in oral reading to read to the teacher so that she can see how well he knows the words in that story. He reads aloud now so that other children's questions may be answered, so that other children may enjoy what he has enjoyed, so that he may pass on information he has found, so that he may prove his point in a discussion. Silently he reads to find solutions to problems he has helped set up, answers to questions he has helped ask, or just to enjoy the story or the material itself.

2. *Reading is now integrated with the whole school curriculum.* The teaching of reading is no longer confined to the reading period. Reading is taught wherever and whenever reading is done. When for any reason material is to be located, problems solved, information obtained, questions answered, or reading is used in any way for study activities, that in itself becomes a specific learning situation in reading as well as in the field in question.

3. *Reading is based on experience.* Reading now is tied in much more closely with the pupil's own experience. It begins with the development of experience charts in the first grade. It is continued in the reading in connection with experience units all through the grades. It is evident in the selection of books of wider range of interests so that a child may tie in his reading with his particular interest, which of course is based on experience. Meaning is developed much more readily when the material read has some connection with things the children have done and seen. In fact, nothing is meaningful to a child except in terms of his own experience, either real or vicarious. An excellent discussion of this is in the report of one of the Reading Conferences at Chicago,[48] where many implications of it are discussed.

4. *Reading and personality are interrelated factors.* More recognition is given to interpreting the child's reaction to reading in relation to his total personality. Reading has come to be recognized as only one phase of child life. As such it is affected by many other factors in the life of the individual. Studies have shown considerable interrelation between personality and reading adjustment. In some cases emotional difficulties are the cause of reading difficulties; in other cases reading deficiencies lead to personality maladjustments and emotional upsets.

5. *Reading readiness is developed before the actual teaching of reading begins.* Progress has been made in the recognition and development of "reading readiness." The tendency to locate those children who are not ready to read when they enter first grade is increasing. To force reading instruction on many children only results in retarding the child's development rather than accelerating it. The child learns little reading, is very apt to develop a dislike for it as well as an attitude of failure and a lessening of self-confidence. In many cases these handicaps persist throughout the remainder of school. In many places this realization has broken down the idea that the child must spend his time in first grade learning to read, and that no matter what the situation the teacher was to teach reading. There are many important things that can be introduced in the life of the child during his first year in school besides reading. At the same time, those children who are ready to learn to read should be given the opportunity.

Every primary teacher should be familiar with some of the suggestions for developing readiness.[49] Examples from current practice, such as having kinder-

[48] *Reading in Relation to Experience and Language*, Supplementary Educational Monographs, No. 58 (Chicago, Ill., University of Chicago, 1944), 226 pp.

[49] See such references in the bibliography as Betts, Gates, Lamoreaux and Lee, Witty, and the *Thirty-Sixth and Forty-Eighth Yearbooks* of the National Society for the Study of Education.

garten children laboriously fill pages of scratch paper by copying letters, or children in a slum district match pictures of white cherries with the words (especially when the cherries in the picture were bigger than pictures of lemons in the same room), are indicative that many teachers are a long way from an understanding of the principles underlying the development of readiness.

Readiness should no longer be considered as limited to the prereading period. Readiness for the particular reading to be done should be developed continuously all through the grades.

6. *Reading has a more casual and informal beginning.* Children are introduced to reading gradually. They tell stories of their experiences. Then the teacher writes them at their dictation, and they read them. Things about the room are labeled. Signs are understood. Daily bulletins are put on the board and read. Charts are made from children's own stories and without any abrupt beginning children are learning to read.

7. *There have been great improvements in the methods of teaching reading.* Reading is taught in thought units more and more instead of in the smaller word or syllable groupings. From the beginning, reading is a thought-getting process. An idea, a thought unit, is read rather than a word or a syllable or a sound. This may be a short sentence, a clause, or a phrase. By being read as a unit, the thought is preserved, and the group of words is seen in relation to the thought. This procedure follows out the findings in the studies of efficient learning.

8. *More varied and flexible techniques are used in the teaching of reading.* No one method of teaching reading will ever be successful for all of the children all of the time. Certain methods are more effective than others. The modern tendency is to watch each child carefully and when the method in use does not seem to be getting results, the teacher will change immediately to some other approach. She will continue trying a variety of methods until she finds one which is effective with that child.

9. *Phonics now is assuming its legitimate place as one technique of word analysis.* At one time all reading was based on phonics. The reaction set in, and many were afraid even to mention it. Now a sensible situation has developed in which phonics is used as a help in developing ability to read new words. It is used when necessary. Some children seem to need almost no help from this source, whereas others find it a great aid.

10. *There is a great increase in number, variety, and quality of books and other reading material.* The basic text has been replaced by a variety of books, and reading experience is not confined to books alone. Signs, labels, charts, magazines, newspapers are increasing the variety and adding new sources of information and experience. The program of the modern elementary school requires many more books than were formerly used. This has resulted in the development of room libraries of supplementary books. More provision must be made in the future for the purchase of such materials. This tendency should result in *forcing the issue of free books* upon those states and boards which at present time require purchase. No adequate program of elementary education can be provided by limiting the reading of children to only one text in each subject. The larger variety of books on various subjects is an interest factor as well as one that furnishes wider experience.

The great improvement in the variety and kind of books now available should be mentioned. Some of the best talent has turned to the writing and producing of books usable in the schools. More attention is being given to the vitalness and significance of the reading material. The selections used in readers during the religious-moralistic periods between 1607 and 1840 can be credited

with having been chosen to influence the behavior of the child. To-day, if reading is to serve its most important function in social life, it must help children deal with real problems. This need is best expressed by Gray: [50]

> They must promote clear understanding and discriminating insight in each of the broader phases of contemporary life; familiarize young people with persistent social issues and current problems; introduce themes and issues at appropriate levels of school progress; develop habits of accurate precise comprehension and interpretation, including critical evaluation; promote greater power in applying the content of what is read, thus contribute to intelligent self-direction and social reconstruction; stimulate interests that will contribute both to the wholesome use of leisure time and to the solution of personal and social problems; and provide a broad common culture to insure an appreciation of the finer elements in contemporary life.

11. *Reading is more flexibly adjusted to the whole daily schedule.* The various activities of the reading period have been notably increased. With the planning of activities around a central unit of experience, reading is done when needed in relation to the whole program. It is no longer necessary to always "read by the clock."

12. *Reading is more individualized.* Each child is given as nearly as possible the type of material he needs at that particular time. Methods and materials are adjusted to his abilities and his interests when possible.

13. *More sensible goals and standards are set up in terms of individual capacities and aptitudes.* Each child's reading is evaluated in terms of his stage of development and ability. It is not expected that all children will learn at the same rate. Children are not "forced" to reach certain standards at certain times, but rather allowed and encouraged to proceed each at his optimum rate for really effective learning.

14. *Diagnosis is made more readily, surely, and frequently.* Distinctive progress has been made in the development of diagnostic and corrective or remedial procedures for identifying and eliminating reading deficiencies. This has included improved tests and remedial material prepared for the child and an increased number of suggestions available to the teacher in this area. The teacher no longer waits until the end of the term for a general diagnosis. Rather, she is constantly using informal devices for locating difficulties. Thus, the difficulties are corrected before much harm is done or much time lost. The point of view is changing away from remedial reading toward developmental reading. When each child is continually given the type of material and the help needed there will be very little need for remedial work.

15. *There is a greater stimulation of reading interests.* The school has recognized its responsibility in developing interest in reading and reading interests. This is partially done by the newer methods of teaching, and, the greater supply and variety of books and materials. But teacher interest in books, her knowledge of juvenile reading and interests, and her ability to make this interest contagious are also important factors.

16. *The need of better library facilities is recognized.* Modern education requires a much larger supply of books than traditional teaching. The wide variety of topics which are the subject of study, the habit of consulting various books on the same subject to get points of view and a more complete understanding, require good library facilities.

17. *Reading should not be limited to the reading of words.* The thinking along this line has been gathering strength and is typified by the discussion at

[50] *Thirty-Sixth Yearbook* of the National Society for the Study of Education, p. 13. Quoted by permission of the Society.

the Claremont College Reading Conferences.[51] Pictures have been used for reading for some time. With the increase in use of visual aids, it is increasingly important that children learn to read them with facility and understanding. Map, chart, and graph reading are other items that must be read. If reading means to see with understanding, then there can be legitimately included here another whole area. Social situations must be read, other people with whom one must work or play and deal, in some way, must be read with understanding if one is to be socially adequate. These readings can be as important as any if not more so.

Further problems in the teaching of reading. Many factors in the teaching of reading have improved in recent years. There are also some which need further thought and a better point of view.

Oral reading. There has been a tendency for oral reading to be almost entirely dropped after the third grade, especially for those who have achieved average or better proficiency. Without doubt, the amount of oral reading should decrease through the grades, but there should always be some opportunity for it for each child. Such opportunities should not be "oral reading periods," but should develop from some natural audience situation.

Non-oral reading. Another point of view on oral reading is that it should not be used until the child can read well silently. The theory is that the meaning should be associated directly with seeing the words and not from saying them. Buswell reports from a study of its use in the Chicago schools that the experimental group was, in every item measured, as good as, and in some aspects superior to, the group which had had the usual training. He concludes that the teaching of oral reading should be delayed until the basic habits of silent reading are established. Gray, however, disagrees with the conclusion and believes a combination is best.[52]

A balanced reading situation. Since teachers have been aware that there are various types of reading and reading for various purposes, there has been a tendency to overemphasize one type to the detriment of the others. Many teachers give opportunity for little besides work-type reading, and that in a limited variety of situations. The whole reading program should be outlined and adequate experience given in every phase so that every child has a balanced reading program.

Planned experiences in reading. The value of carefully planned procedures in attaining progress in specific types of reading is recognized. One fallacy in the practices of many "activity teachers" has been the substitution of haphazard and fortuitous contacts for a planned sequence

[51] Yearbooks (Claremont, California, Claremont Curriculum Laboratory), particularly Yearbooks XI, XII, and XIII in the years 1946, 1947, and 1948.

[52] Guy T. Buswell, *Non-Oral Reading: A Study of Its Use in the Chicago Public Schools,* Supplementary Educational Monographs, No. 60 (Chicago, University of Chicago Press, 1945), 56 pp.

William S. Gray, "Summary of Reading Investigations," *Journal of Educational Research,* Vol. 39, February, 1946, pp. 401-433.

of development. This tendency is only too evident to the critical student who studies the classroom procedures of a large number of teachers.

Utilizing the experiences of children in the first grade as a basis for reading is extremely valuable. It gives point and purpose and understanding to reading. It does not mean the discarding of a systematic attack on reading. The minimizing of formalized, unrelated drill does not indicate substitution of chaos. The utilization of the opportunities for reading in the various units does not mean that a diagnostic program should be eliminated. Progressivism is the using, not the discarding, of all we know about the development of boys and girls. Some schools are trying to "plug the dyke" by an intensive drill program in the sixth grade. Obviously such a procedure is a poor substitute for a continuous program of remediation.[53]

IX. UNDERSTANDING WRITTEN COMMUNICATION: FUNDAMENTAL READING CONCEPTS

What are the characteristics of a good reading program? Whipple has summarized many of the recent publications in this area and has listed eight criteria which seem very useful in evaluating a program.[54] She has elaborated each of these criteria and has followed them with descriptions of adequate programs as she found them in a one-room rural school, in a one-teacher-per-class urban school, and in a departmentalized school.

1. Is consciously directed toward specific, valid ends which have been agreed upon by the entire school staff. Widely accepted ends are rich and varied experiences through reading, broadening interests and improved tastes in reading, enjoyment through reading, increased personal and social adjustment, curiosity concerning the ideas given in the reading material, resourcefulness in using reading to satisfy one's purposes; and growth in the fundamental reading abilities, such as ability to recognize the words, to understand the meanings of words, to comprehend and interpret what is read, to locate references bearing on a problem, and to organize ideas gathered from different sources.
2. Coördinates reading activities with other aids to child development.
3. Recognizes that the child's development in reading is closely associated with his development in other language arts.
4. At any given level, is part of a well-worked-out larger reading program extending through all the elementary- and secondary-school grades.
5. Provides varied instruction and flexible requirements as a means of making adequate adjustments to the widely different reading needs of the pupils.
6. Affords, at each level of advancement, adequate guidance of reading in all the various aspects of a broad program of instruction: basic instruction in reading, reading in the content fields, literature, and recreational or free reading.

[53] Clearly supporting this point of view are the implications of the study of Dorris May Lee, *The Importance of Reading for Achieving in Grades Four, Five, and Six*, Contributions to Education, No. 556 (New York, Teachers College, Columbia University, 1933).

[54] Gertrude Whipple, "Characteristics of a Sound Reading Program," in *Forty-Eighth Yearbook*, Part II, National Society for the Study of Education (Chicago, University of Chicago Press, 1949), Chapter III.

7. Makes special provisions for supplying the reading needs of cases of extreme reading disability, in other words, the small proportion of pupils whose needs cannot be satisfied through a strong developmental program.
8. Provides for frequent evaluation of the outcomes of the program and for such revisions as will strengthen the weaknesses discovered.

Fundamental attitudes, habits, and skills. Reading is a skill, a technique, a tool to be used in a variety of ways and for numerous purposes. It is of utmost importance that every individual in a democracy have this skill developed to a very usable level. It is of equal importance to any one who expects to become an educated person and to every one who has leisure time. Also, many if not most of the jobs by which people earn their livelihood depend upon the ability to read. It is the responsibility of the elementary school to develop these fundamental attitudes, habits, and skills to the point where they function automatically and adequately in all these situations.

What attitudes, habits, and skills are necessary and worthy of development? In general, and applicable to all reading are:

1. A fundamental liking for and interest in books and other reading materials
2. A realization that reading is the quickest, easiest, and best means of widening background of knowledges and appreciations through vicarious experience
3. Habits of thoughtful reading, understanding what is read, interpreting it, and reacting to it in the light of their own experience so that it in turn becomes a part of their experience
4. Habits of rapid, accurate reading, correctly interpreting words, punctuation, paragraphing, and such devices as headings, italics, and references to footnotes
5. Good physical habits, such as good sitting or standing posture, holding the book in a good position, and having a good light source

Oral reading requires a very different situation from silent reading and also several special skills.

1. The habit of watching for or recognizing stories or poems or selections that others might be interested in hearing
2. The habit of being certain of meanings and technically accurate in the reading of material before reading it aloud to others. (This should be varied occasionally by the child's reading new material aloud which is well within the ability of the child and of already determined worth, such as reading a section of a story which is being read to the class.)
3. The ability to modulate voice and expression to suit the material and meaning
4. Habits of good posture and breathing; self-confidence, which gives freedom from tension and nervousness

Reading for appreciation will constitute a large part of the average person's reading and can be made much more meaningful if certain habits and attitudes are developed.

1. The habit of sensing the author's mood, point of view, and settings for his situations

2. The ability to lose oneself in reading by sympathetic identification
3. The ability to evaluate critically the worth of a book and the probable worth of another book by the same author or of the same type
4. Habits of reading widely in many kinds of books

Study or work-type reading constitutes most of the reading done in school in connection with jobs, and even some leisure-time reading. This is much more varied reading that entails a much wider range of specific skills than any other type and probably needs most help in developing. Some of the more important are listed here.

1. The habit of always reading with a definite and specific purpose in mind
2. The habit of suiting the style and speed of reading to the type of material and the established purposes in reading it
3. The recognition of various types of reading-study techniques such as finding the main thought of a paragraph, organizing ideas, summarizing, analyzing statements, selecting desired information, critical evaluation of material, and synthesizing ideas and information into previous backgrounds
4. A knowledge of various study techniques such as scanning to locate information, outlining, use of table of contents, index, and appendix

Certain library techniques should be known by the child if he is to be able to use and handle books.

1. The habit of using the library for both recreation and information
2. The habit of consulting various sources on a problem
3. The knowledge of how to locate material in the library
4. The knowledge of how to locate desired material in a given book, use of table of contents, index, scanning
5. The knowledge of the use of reference books, such as the dictionary, encyclopedia, and others
6. The habit of careful and adequate handling of books, such as properly opening new books, marking places, and keeping books clean and unmussed

Growth in reading can be characterized by certain stages of development. Learning to read and reading to learn must of a necessity overlap. They are in a large part coexistent. *As soon as the child starts to read, he does it to find out something.* That is reading to learn. At the other extreme a person should always be improving his efficiency in these techniques, his appreciations, and his interests. That is really learning to read.

Schools in the past were accustomed to assign certain skills to be developed in certain grades. Courses of study specified definite achievements for each grade. Test results have shown the wide range of actual achievement on each level and a great difference in rate of development for individuals. Also, research has shown that most abilities, attitudes, and understandings are developed over a long period of time. As a result more modern courses are attempting to characterize the total developmental pattern as a guide to teachers.

Stages of reading Gray [55] characterizes as:

1. Reading Readiness
2. Initial Guidance in Learning to Read
3. Rapid Progress in Fundamental Reading Attitudes and Habits
4. The Extension of Experience and the Increase in Reading Efficiency (grades four to six)
5. The Refinement of Reading Attitudes, Habits, and Tastes (secondary school and college)

Stage One: Reading Readiness. Reading readiness depends on many factors. The language development and facility of the child are one large factor. A child with a small and imperfect speaking vocabulary can hardly be expected to do much reading. His oral language facility must be developed at least to the point where he speaks on a level equal to or greater than the level at which he is reading. A wide background of common experience is a big asset. The child must have experienced the situations about which he reads if they are to have any meaning or significance for him. His interpretation of vicarious experience must be based on his own experiences. An adequate mental maturity is almost a necessity. For this there is little to do but wait, as it is a factor of time and the child's own natural rate of development. The time, however, can be spent to good advantage. Perhaps as important as any aspect (and one that is usually neglected) is the child's adjustment to his surroundings. He meets many new situations when entering school, situations entirely apart from his reading experiences. If he does not make a satisfactory adjustment to these, he can hardly be expected to make much progress in reading.

In addition, the child must be in good general health with normal speech organs, normal two-eyed visual acuity, and normal hearing acuity. If there is any doubt about the normality of any of these, tests should be made and any defects remedied as well and as quickly as possible. In some cases it is a matter of waiting for maturation, in others of providing the right type of experiences. The purposes of teaching during this stage of development then are: [56]

Developing Personal Readiness

1. A child needs security
2. A child needs independence
3. A child needs social development

Developing Experience Readiness

1. Planned trips and excursions
2. Group activities
3. Discussions
4. Story telling
5. Dramatization

[55] William S. Gray, "The Nature and Organization of Basic Instruction in Reading," *Thirty-Sixth Yearbook, op. cit.*, Chap. IV, pp. 76-77.

[56] See Lillian A. Lamoreaux and Dorris May Lee, *Learning to Read Through Experience* (New York, Appleton-Century-Crofts, Inc., 1943), 204 pp.

6. Music
7. Visual materials

Developing Readiness of Related Abilities

1. A child needs to develop language ability
2. A child needs good articulation
3. A child needs to increase his visual abilities
4. A child needs to improve his auditory abilities
5. A child needs to increase motor development
6. A child needs to develop number concepts
7. A child needs an interest in learning to read
8. A child needs to develop specific habits and abilities
   a. Increasing attention span
   b. Developing ability to do rational thinking
   c. Developing ability to follow directions
   d. Distinguishing similarities and differences
   e. Developing the left-to-right eye sweep habit

It is essential that the experiences given during this reading readiness period be valuable from the standpoint of the broad and balanced development of the whole child.[57] They must not be merely drill on skills which the teacher feels are necessary to fit them into a narrow traditional reading program. Attention should be given to all phases of development. Too often one phase is emphasized, to the detriment of the others. Certain of the reading-readiness tests have used form discrimination of letters as a measuring device to determine reading readiness. Too many kindergarten teachers make up similar exercises for their children and feel that they are providing a wonderful program of reading readiness. After seeing numerous little tots being subjected to these exercises, at least one author of a reading-readiness test wishes he had used some other measurement technique.

Many school systems are putting out bulletins of a more or less adequate nature to help their teachers with their reading-readiness program. One of the best has been put out by Tacoma, which goes into a good discussion of the purposes and needs for such a program and then gives a wealth of specific suggestions for developing it.[58]

Stage Two: Initial Guidance in Learning to Read. Hildreth[59] has developed some principles of beginning reading instruction which are especially helpful:

1. An attractive environment is arranged that arouses interest in reading, provides occasion for reading, and enables children to be comfortable while they are working with books and other reading materials.

[57] The following, listed in the bibliography, outline desirable reading readiness programs: Betts, Parts Three and Four; Bond and Bond, Part II; Lamoreaux and Lee; Witty, Chapter III; *Forty-Eighth Yearbook,* Chap. 4.

[58] Getting Ready to Read From Books, A Reading Readiness Bulletin (Tacoma, Washington, Tacoma Public Schools, 1947), 13 pp.

[59] *Reading in the Elementary School,* Forty-Eighth Yearbook, Part II of National Society for Study of Education (Chicago, University of Chicago Press, 1949), pp. 71-72.

2. The children are grouped for instruction according to the most reliable evidence of their learning aptitudes and readiness.

3. Teaching beginning reading employs natural, meaningful ways of learning that are consonant with the normal interests and activities of young children, that capitalize the relations among print, language, and experience, and that stimulate incidental learning.

4. Beginning to read develops gradually from the types of readiness experiences described above.

5. In beginning reading the child's attention is centered on the meaning of the print and the purposes it serves rather than on the process of reading itself.

6. The context of beginning reading lessons is closely related to the children's ideas expressed in their conversation. The beginning lessons familiarize pupils with the printed words common to the beginner's oral vocabulary. New words are not introduced in reading text until the children have had experiences that give meaning to these words.

7. The use of script text * has proved its value as an introduction to reading, a link between reading and current experiences, and a tool for direct practice in reading skills.

8. There is a place in the program for both indirect, incidental, vicarious learnings, and also for direct teaching of reading techniques in well-planned lessons. The amount of time spent on reading will depend upon the nature of the activities under way and the entire program of school life for beginners.

9. Some time every day should be spent by each group in activities through which the pupils have direct practice in reading techniques in accordance with their needs.

10. From the first lessons, time in the daily schedule is generously allotted to wide-range experiences that aid learning to read indirectly. Teachers do not "give up everything for reading" but see the advantage to reading of balancing the program with other sorts of learning activities.

The following characteristics distinguish the pupil who has passed through this stage of development. He: [60]

1. Becomes absorbed in the content of interesting selections and books when reading independently

2. Reads silently with few or no lip movements

3. Asks questions about and discusses intelligently the content of what is read

4. Reads increasingly longer units for pleasure or in response to a specific purpose

5. Reads aloud clearly, and in thought units, rather than by individual words

6. Uses various aids independently in recognizing unknown words

7. Recognizes and interprets the significance of certain typographical devices, such as the period, question mark, and quotation mark

8. Handles books with care, opens and turns pages properly, knows the order of paging, and is able to find readily what he is looking for

* The term "script text," as used in these two chapters, refers to any reading material prepared in manuscript writing or on the typewriter by the teacher or pupils before or during reading lessons to give pupils practice in reading, as distinct from commercially printed text. Script text is used in preparation of sentences, questions, paragraphs, letters, messages, notices, schedules, and the like. These materials are commonly referred to as "teacher-made," "class-constructed," or "experience" material.

[60] *Thirty-Sixth Yearbook* of the National Society for the Study of Education, pp. 97-98. Quoted by permission of the Society. See also *Forty-Eighth Yearbook*, p. 20.

Stage Three: Rapid Progress in Fundamental Reading Attitudes and Habits. The third stage can be characterized generally by an independence in reading. During this period the child is perfecting his means of identifying new words so that there are few he cannot read. He is establishing the habit of using the dictionary and consults it rather than the teacher. He is perfecting his eye movements; establishing even, smooth movements, stopping four or five times to a line when no new words are encountered, making no regressions and a rapid, accurate sweep back to the beginning of the next line. He is dealing with a wider variety of material including content material of many fields. He is reading for many different purposes. He is establishing techniques for efficient reading to satisfy his various purposes. The volume and variety of his reading is increasing enormously, and he is developing added facility in the use of the library.

The following characteristics indicate pupils who have completed the third level: [61]

1. They have established the habit of reading independently.
2. They interpret accurately the materials related to other curricular fields.
3. They seek reading materials that relate to activities in which they are interested.
4. They read more rapidly silently than orally.
5. They are able to read at sight materials suited to their stage of development.
6. They show increasing skill in combining contextual clues with visual and auditory elements in recognizing unfamiliar words.
7. They show increased ability to make the adjustments required when reading for different purposes.
8. They exhibit rapid progress in acquiring wholesome and diversified reading interests.

Stage Four: The Extension of Experience and the Increase in Reading Efficiency. This period constitutes a refinement and perfection of the previous stage. There is increased efficiency, greater facility and enjoyment of reading, greater familiarity with a larger variety of purposes in reading, and perfection of the techniques. The volume of reading and use of the library again increase. Interests are broadening and developing. The fourth stage is characterized by pupils when: [62]

1. They are familiar through reading with numerous aspects of human activity.
2. They have acquired strong motives for and keen interest in reading for information and pleasure, and devote time regularly to recreational reading.
3. They are able to recognize and pronounce new words independently or to find them quickly in the dictionary.

[61] *Ibid., Thirty-Sixth Yearbook,* p. 107. Quoted by permission of the Society. *Forty-Eighth Yearbook,* p. 21.

[62] *Ibid., Thirty-Sixth Yearbook,* pp. 119-120. Quoted by permission of the Society. *Forty-Eighth Yearbook,* pp. 21-22.

4. They have reached approximate maturity in rate and span of recognition, in rhythmical progress of perceptions along the lines, in eye-voice span in oral reading, and in speed of silent reading for recreational purposes.

5. They have greatly expanded their meaning vocabularies and have mastered various aids in deriving the meanings of words, including the intelligent use of the dictionary.

6. They have increased their power of comprehension and interpretation to the point where they are able to make a grade score of 7.0 in silent reading.

7. They have made rapid progress in acquiring independence and efficiency in a wide range of study situations that involve reading.

8. They are able to use economically and skilfully books, dictionaries, encyclopedias, and other sources of information that are needed in their reading and study activities.

Stage Five: The Refinement of Reading Attitudes, Habits, and Tastes. This stage usually takes place in high school and college and needs stimulation and encouragement rather than teaching. It is presented here to complete the picture and indicate the next steps for the advanced child. The aims for this period of development are: [63]

1. To extend further the experiences of pupils through reading and to increase greatly their intellectual apprehension. To these ends each subject of the curriculum should provide stimulus and opportunity for wide reading of books, selections, newspapers, and periodicals that broaden the pupil's vision and increase his understanding of the problems studied.

2. To extend and refine reading interests and tastes that will direct and inspire the present and future life of the reader, and provide for the wholesome use of leisure time. Special attention should now be given to the development of permanent interest in current events and of the habit of reading periodicals and books with reasonable speed and good judgment.

3. To promote vigorously the further development of the habits involved in gaining an intelligent grasp of the authors meaning, in reading for different purposes, and in making keen critical interpretations of what is read. Reading at this level is largely a reflective and interpretative process, and every effort should be made to stimulate and develop appropriate habits.

4. To develop a high degree of skill and efficiency in study activities, including the use of books, libraries, and other sources of information, and to extend and refine habits involved in locating, collecting, and summarizing printed materials.

5. To improve and refine habits involved in good oral interpretation, particularly of informational, literary, and dramatic selections, and in connection with public and class activities that require reading to others.

6. To provide corrective and remedial instruction in the fundamental habits involved in oral and silent reading whenever the need for it exists.

X. UNDERSTANDING WRITTEN COMMUNICATION: SPECIAL PROBLEMS

Vocabulary development. This is an integral part of the process of learning to read. It is a means to an end, never an end in itself. It may

[63] *Ibid., Thirty-Sixth Yearbook,* pp. 122-123. Quoted by permission of the Society. *Forty-Eighth Yearbook,* p. 23.

result from incidental or from direct teaching, and the combination of these two methods is better than either one alone.

Incidental learning of vocabulary takes place largely in two ways. Mainly it occurs as the child is reading to himself. The material should contain few words which he does not know, and the concepts must all be within his understanding. The child gets meaning from the unfamiliar words by context clues, from the meaning of the material itself.

The second way incidental learning takes place is incidental only to the child but planned for by the teacher. She may wish to introduce certain words. She will use them in such a way that the child understands them from context. If we stop to analyze it, this is the method used by little children almost entirely in developing their vocabulary. It is used to considerable extent all through life.

Direct teaching may take many forms. Old-fashioned word drill is definitely passé. It has a value comparable to the "spelling bee." Instead the children should develop an interest in increasing their own vocabularies. They should develop the "dictionary habit" beginning in a small way in the first or second grade. By fourth or fifth grade each child should have a copy of a dictionary intelligible to children in his desk and use it frequently. Children should feel that they never know all there is to know about a word. Concepts develop gradually, and the concepts involved in most words are still not complete in adulthood. There should be a definite coördination of reading, speaking, and writing vocabularies.

The most vital and useful situation for direct teaching of vocabulary is in connection with the planning of a unit or the introduction of a piece of work. As the children are becoming orientated to a new topic by discussion and reading, new terms and words are bound to appear. Here they are in context, in a meaningful situation, and the pupil sees the value in knowing them. The situation is ideal for learning. If a story or poem is to be read, words that will be needed should be brought in incidentally during the introduction and preparation. This should not be an isolated drill on the words. Rather the words must be seen to be vital to the fulfilment of a purpose already accepted.

Vocabulary development is or should be continuous throughout life from the first time the baby gets meaning from a spoken word. During the primary grades there is probably more emphasis on the direct teaching and in the upper grades more on the incidental learning, but both should be important factors all through school.

Reading standards. Reading progress has been described in stages rather than by grades for a definite purpose. For many years advancement was described by grades, and this was held up as a standard. In most cases no child could pass to the next grade until those standards had been met. No allowances for individual differences in rates of progress were made. To-day, children, unless they are too far from the group, are allowed to progress at their own rate, and suitable material and

assistance are given them. Many times several of these stages will be represented within one grade group.

Tentative standards are sometimes set up in terms of books read. In other cases they are in terms of informal tests or scores on standardized tests. If the standardized tests are suitable to the material the child has been reading, they probably furnish the best single estimate of his skill achievement. They must, however, be supplemented with other factors. Russel[64] presents an evaluation of pupil growth in and through reading from many different standpoints, emphasizing its interrelatedness with all phases of child development. He gives a selected list of nine criteria, to which we have added number ten as an indispensable one.

1. Is the child developing the ability to read various types of materials in readers and in the content fields?
2. Is the child learning to read in different ways for a half dozen or so different purposes, such as understanding the main idea, noting specific details, and following a sequence of events?
3. Is the pupil developing the ability to adapt his rate of reading to the nature of the material and his purpose in reading it?
4. Is the child increasing his independence in ability to recognize new words?
5. Is the pupil learning the proper care of books?
6. Are the individual children increasing their abilities to interest and hold an audience in oral reading?
7. Has the child developed the ability to use an index, a table of contents, and other parts of a book as needed?
8. Is the pupil improving in his use of the library for working purposes?
9. Can an upper-grade pupil organize an article into its main headings with a few sub-sections under each?
10. Is the child developing the habit of consistently reacting to all material read; with critical analysis, thoughtful evaluation, suspended judgment or pure enjoyment?

How much time should be devoted directly to reading? Several studies have found the number of minutes a week spent on reading by various schools in each grade. This is not very helpful. Particularly with the new and more informal methods, it would be almost impossible for a teacher to give such figures with any degree of accuracy. Reading is used as the need for it arises and in many and varied situations, largely planned for but often incidental and opportunistic. It is more helpful to lay down general principles than to state the number of minutes a day.

In the primary grades, reading should enter, directly or indirectly, into the majority of the activities and experiences. It must not, however, monopolize the time to the exclusion of the many other worth-while activities that should be encountered at this level. The amount of time devoted directly and specifically to reading should diminish through the grades. Meanwhile, of course, the incidental use of reading is increasing.

[64] *Reading in the Elementary School, Forty-Eighth Yearbook* of the National Society for the Study of Education, *op. cit.*, Part II, Chapter XIV, p. 294.

Those who need help in any phase of reading should form a group to which the teacher may give intensive and special training. All pupils should have some time in school in which they may read purely for enjoyment, read anything they wish. Direct and indirect suggestion by the teacher and the selection of books available should be relied upon to improve the type of reading. Children should be given an opportunity to share their enjoyment of this free reading with the group. This can be one of the greatest motivations for increased reading. Besides this, work-type reading should be a part of all other phases of the program where reading is used.

Reading as a planned functional program. In Newton, Massachusetts, the teachers held a workshop once a week with a specialist for a year. They studied the needs of their children and studied reading as a functional part of the whole school program. Their reading program was planned to stimulate interest and make children's reading activities purposeful through emotionally satisfying experiences; to take care of individual differences in achievement through the discriminating use of specifically needed drills; and to carefully select materials appropriate to the level of the children. The resulting reading progress was highly satisfying to the teachers, and the pupils were much happier.[65]

The Sloan experiment reported the integration of the reading program in the total pattern of education of the "community school." Particularly significant in this report was the description of the specific needs and interests of the children.[66]

Another system in grades IV-VI changed from an unplanned program, with extensive use of oral reading and reliance on individual reading, to a planned program of developmental training in reading, with large emphasis on work-study type reading. The results gave convincing evidence of the value of a broad well-planned program.[67]

Children in an activity school were compared with children in a traditional type program, and they showed a definite superiority in the amount and range of reading and in the quality of the recreational reading done.[68]

Dade County organized to prevent and reduce reading retardation. In nine weeks most of the 428 children improved from three to seven months. Among their changes were more attention to development of experiential backgrounds, greater emphasis on the individualization of instruction,

[65] Mary Alice Mitchell, "Reading and the Elementary Program," *Journal of Educational Research*, Vol. 41, March, 1948, pp. 532-540.

[66] M. F. Seay and Leonard Meece, *The Sloan Experiment in Kentucky*, Bulletin of the Bureau of School Service, College of Education, Vol. 16, No. 1 (Lexington, Kentucky, University of Kentucky, June, 1944).

[67] John McWilliams, "Improving the Reading Situation," *Elementary School Journal*, Vol. 47, June, 1947, pp. 558-562.

[68] C. W. Hunnicut, "Reading of Children in Activity and Regular Schools in New York City," *Elementary School Journal*, Vol. 43, May, 1943, pp. 530-538.

more interesting materials, definite basic instruction, teachers more thoroughly educated in the teaching of reading, and better parent education on reading.[69]

Concerning a low vocabulary. One authority recommends a low vocabulary with wide sight reading in easy materials. She points out these advantages. Reading with understanding is possible from the beginning. Children quickly gain power in applying reading techniques to new material and rapidly become independent in reading skill. Individual children can and do read widely in "trade" story books. The child has become accustomed to approaching unfamiliar words with various techniques. Thus he is able to assimilate an increasingly accelerated vocabulary. There is continued interest because reading is not too difficult for the child, for children show almost perfect mastery of what they have attempted to learn.[70]

Others feel that while the vocabulary must be controlled in primary reading, the speed with which reading vocabulary is introduced depends on the child. Some children can cope successfully with a much larger vocabulary than others. For the immature reader it certainly is essential to keep the reading vocabulary low; but as Stone says, it is not a cure-all.[71] Other principles of good planning and good teaching are necessary.

If one is attempting to provide a large amount of easy reading, one means is by using preprimers of several series. It is important to check the vocabulary, for in some series there is very little overlapping with other series.[72] However, a study of twenty preprimers of 1940 or later found a lower different-word count with a trend toward greater similarity among vocabularies.[73]

Kyte has compiled a list of 100 basic words from vocabulary studies, readers, children's oral and written work. They are of high functional value in conveying ideas and interpreting the thoughts of others. They form an excellent criterion against which a teacher may check the vocabulary which she is stressing in the language arts program. It also is a valuable source of words which may be suggested for expressing the children's ideas in building experience charts. They are given here, arranged in order of frequency of use in second grade children's themes:[74]

[69] Kathleen B. Hector, "Dade County Meets the Reading Problem," *Elementary School Journal,* Vol. 47, November, 1946, pp. 148-156. Other coöperative programs are discussed in *Forty-Eighth Yearbook, op. cit.,* Chap. 15.

[70] Gertrude Hildreth, "All in Favor of a Low Vocabulary," *Elementary School Journal,* Vol. 43, April, 1943, pp. 462-470.

[71] Clarence R. Stone, A Reply to "All in Favor of a Low Vocabulary," *Elementary School Journal,* Vol. 44, September, 1943, pp. 41-44.

[72] Louise Geddings Carson, "The Use of Preprimers, A Teacher's Point of View," *Elementary School Journal,* Vol. 13, December, 1912, pp. 225-233.

[73] Sister M. O. P. Dorothy and Sister Rita O. P. Cecile, "A Vocabulary Analysis of Recently Published Preprimers," *Journal of Educational Research,* Vol. 40, October, 1946, pp. 116-125.

[74] George C. Kyte, "A Core Vocabulary for the Primary Grades," *Elementary School Journal,* Vol. 44, November, 1943, pp. 157-166.

I, a, the, and, my, to, is, we, in, like, it, he, have, on, was, me, play, with, dog, she, of, too, Christmas, doll, one, go, went, her, when, for, you, has, very, little, they, good, had, snow, at, some, can, day, got, baby, him, do, house, there, his, likes, all, name, school, are, Santa Claus, said, then, father, time, snowman, new, toys, so, will, every, saw, big, home, our, boy, nice, up, fun, train, balloon, that, girl, out, much, party, am, going, sister, man, get, were, make, birthday, but, pet, see, boys, not, brother, cat, them, ball, Saturday, put, children.

What about mechanical methods for increasing speed of reading? There has been developed an instrument called the tachistoscope, which has had some use in increasing the child's speed of reading. It exposes anything from one figure up to a phrase of about five words at one time. The exposure can be adjusted from one tenth of a second to one hundredth. It might be likened to mechanically controlled flash cards. It can be used by an individual or by a small group. Its emphasis is on word-calling rather than understanding. Renshaw,[75] who introduced its use in reading in the schools, summarizes forty-two studies and concludes that the tachistoscope method improves visual proficiency in seeing. It seems that this may or may not have a relation to reading ability. Another summary of opinion and research concerning this instrument was done by Traxler.[76] Many studies show improvement through its use, but no greater in most cases than by use of any other special method which put emphasis on the teaching of reading and intrigued the interest of the children. There is lack of evidence as to the permanence of gains or of adequate control of experimental factors. The summary concludes that the studies "do not provide clear-cut evidence, either favorable or unfavorable, to controlled reading," and that "it appears that the findings are somewhat more favorable to the value of controlled reading techniques than is the sum total of the opinions of experts in the field of reading."

The Metron-O-Scope has been used as a teaching device but has no place there, as it is purely a research instrument for measuring eye-movements.

Are there sex differences in reading ability? It seems definite that on the whole girls learn to read more readily and more successfully than do boys. This may be due to the difference in physiological development discussed in Chapter 2. There it was shown that by the time she is seven the average girl is a year nearer maturity than is the average boy of the same age. It may be that it is due to the greater linguistic ability of the girls. It may be that the reading material is more interesting to girls than to boys. Or it may be due to the greater docility of the girls in following out the teacher's suggestions. Whatever the cause or the combination of causes, teachers should be aware of the possibility and plan

[75] Samuel Renshaw, "The Visual Perception and Reproduction of Forms by Tachistoscope Methods," *Journal of Psychology*, Vol. 20, October, 1945, pp. 217-232.

[76] Arthur E. Traxler, "Value of Controlled Reading: Summary of Opinion and Research," *Journal of Experimental Education*, Vol. 11, June, 1943, pp. 280-292.

the work to take advantage of the boys' interests and abilities as far as possible.

Are pictures valuable? Pictures are valuable in a number of ways. A story with pictures gives more relevant ideas than either alone. For a variety of ideas a picture alone is best, but most of these may be irrelevant to those intended. However, to stimulate discussion or writing they are most useful. Children remember ideas better when there are pictures.[77]

With these facts in mind, a series of educational comics or Picture Stories was put out,[78] on the basis that the picture-verbal make-up was the secret of the popularity of the comics. Hundreds of questionnaires to teachers using them brought all favorable responses. They felt that there was greater learning and enthusiasm from all ability groups and that the rapport between teachers and children was increased. They reach the heart of the problem of reading comprehension and interest, for, as Alice said, "What use is a book without pictures and conversation in it?" [79] It also fits in with Tyler's point that, to increase the educability of the various social groups, less of our materials should be verbal and more should emphasize other means.

Along this line teachers reported using newspapers in the classroom. They can be used in every grade in some fashion. They found twenty-one uses for pictures in the papers; twenty-two uses for comics, cartoons, and caricatures; eight purposes for reading and some twenty-three other uses.[80]

XI. UNDERSTANDING WRITTEN COMMUNICATION: DIAGNOSIS AND REMEDIAL WORK IN READING

Diagnosis and remedial instruction are not a comprehensive, thorough job, performed once a quarter or a semester or a year; they are continuous. The teacher's attitude must be diagnostic. When a child doesn't seem to understand the day's work, the teacher asks herself why. What factor is causing the trouble? She works with the child, diagnostically, until she discovers the difficulty and proceeds to take the necessary steps to correct it.

Teachers have complained that they don't have time for diagnosis and remedial teaching, that they are too busy teaching. Their point of view is wrong (or their methods of teaching). If a teacher is familiar with ways of diagnosis, if she thoroughly understands the learning process involved in learning to read, her instruction will be based on the

[77] Marie Goodwin Halbert, "The Teaching Value of Illustrated Books," *American School Board Journal*, Vol. 108, May, 1944, pp. 43-44.

[78] By M. C. Gaines of Educational Comics, New York.

[79] W. W. D. Sones, "Comic Books Are Going to School," *Progressive Education*, Vol. 24, April, 1947, pp. 208-209+.

[80] Lester R. Wheeler and Viola D. Wheeler, "Newspapers in the Classroom," *Elementary English Review*, Vol. 22, December, 1945, pp. 324-329.

individual and immediate needs of the child. This type of teaching is so much more effective than the determined plodding according to a preconceived plan that she will find she has more instead of less time.

In first grade this diagnosis should be done every few days. As the child progresses, the period can be extended. By the time the fourth grade is reached, an informal diagnosis should be made on the average of about once a month as the opportunity offers and standardized tests given twice a year. It is particularly important that a careful check be made until the child reaches a general facility equivalent to a grade placement of about 4.0. It seems to be true that this is a minimum for meaningful reading of a wide range of material with uncontrolled difficulty.[81] This may be true because it is at this level that a child has largely developed an ability for independent reading, and from there on it tends to be more a case of increased speed and efficiency and differentiation for various purposes.

Causes of reading difficulty. One of the favorite investigations is into the cause of reading failures, and no one has found a definite answer. This is probably because there is no single cause in any case, but rather a constellation of causes with each child having a somewhat different combination. Robinson summarizes findings and analyzes causes as follows: Maladjusted homes or unsatisfactory inter-family relationship, as identified by the social worker, was a contributing cause in more than one-half of the cases studied. Emotional maladjustments recognized as severe by the psychiatrist were causal in one-third of the cases. Visual cases were identified by ophthalmologists in one half the cases. Inappropriate adaptation of method was listed in one fourth of the cases, although it may be more important. Other causes of less frequency were a functional or structural deficiency in the brain, as identified by a neurologist; speech and functional auditory difficulties, as determined by a speech specialist; hypothyroidism, hearing loss, general physical disability or malnutrition or other difficulties causing irregular attendance. In the cases in this study all had adequate mental and verbal abilities.[82]

There are several points of interest in relation to this study. As was stated, the inadequate teaching methods were thought to be more important than this analysis showed. This might well be true, for it is frequently found that some cases with similar emotional, visual, auditory or other difficulties succeed where others fail. The teaching situation may make the difference, for good teaching can overcome many difficulties which poor teaching can not.

Another point is the listing of functional difficulties as functional deficiencies of the brain and functional auditory difficulties. Since the

[81] Dorris May Lee, *op. cit.*

[82] Helen M. Robinson, "Why Pupils Fail in Reading" (Chicago, University of Chicago Press, 1946, 258 pp. See also ———, "Causes of Reading Failure," *Education,* Vol. 67, March, 1947, pp. 422-426.

causes of these are not analysed, one can only guess; but often emotional difficulties are the cause of functional deficiencies.

The relationship of intelligence to reading difficulties is uncertain and quite definitely not as great as once thought. This may be illustrated by a study of 417 children, 86 to 191 months chronologically and 84 to 203 months mentally. It was concluded when a verbal intelligence test was used that "language mental age is markedly related to certain comprehensive reading test score, but much less closely related to tests of application of reading as measured by the Gann test." The scatter of the reading scores on a single ten month mental age interval, within a given chronological age included sometimes almost the whole range of reading scores. The non-language mental ages showed even less relationship than did those based on language test items.[83]

Visual difficulties are important, but not as important as at one time thought. However, a routine examination by many optometrists will not locate the cause of visual reading difficulties. The examination is made for the purpose of determining whether or not the child needs glasses, and usually he does not. It is merely a case of visual mechanisms not yet being mature. When this purpose of examinations is stressed, it is usually possible to get a test which adequately analyzes such difficulties.[84]

Emotional adjustment. The cause of reading problems which has recently been widely discussed is emotional adjustment. Severe emotional problems were given as causal in one third of the cases and may well have been factors in other functional disabilities. Then there is no record of the extent to which lesser emotional disturbances may have been the "last straw" in other combinations of possible causes.

Comparing 34 retarded readers, 34 average readers, and 34 good readers, equated in terms of age, IQ, mental age, school experience, and sex, Gann found that retarded readers show more markedly evidences of emotional disturbance. Retarded readers, she implied, should be considered personality problems as well as learning problems, and reading-development work should involve emotional therapeutics as well as direct-reading instruction. Studies of the retarded reader "cannot be made apart from his personality and his attitudes toward the reading experience. Helping to build emotional security may be essential in stimulating greater participation and better achievement." [85]

Another study emphasizes the fact that the causes of reading ability or disability are many and intertwined rather than individual and isolated. Studying the pupils in the upper and lower quartiles of reading ability in grades II-VI, it was found that fears, worries, failures, introversion, and

[83] Ruth Strang, "Variability in Reading Scores on a Given Level of Intelligence Test Scores," *Journal of Educational Research*, Vol. 38, February, 1945, pp. 440-446.

[84] See Emmett A. Betts, *Foundations of Reading Instruction* (New York, American Book Company, 1946), Chapter XI, Visual Readiness for Reading.

[85] Edith Gann, *Reading Difficulty and Personality Organization* (New York, Kings Crown Press, 1945).

the like exist to a degree which merits attention in connection with reading difficulties. It is especially important for the teacher to consider fears and worries arising from educational situations such as failures, aversions, and mispronunciations.[86]

A Rorschach test given to pupils who were in a correction program for reading difficulties gave indication that 67% of them were severely maladjusted.[87]

In the case of orphanage boys, emotional maladjustment accompanied non-reading in 85% of the cases.[88] Intelligence was not a factor here.

Even reversal tendencies may have an emotional basis. Children with all degrees of intelligence may be subject to reversal tendencies. While left-handedness, eye difficulties, mixed dominances, asthma, and similar difficulties may be related to the tendency, no one factor seems to be responsible. The authors conclude that because "children may appear normal at times and at other times show an extreme tendency to reverse, it seems reasonable to suspect that emotional imbalance is one of the principle causes of the reversal tendency." At least these children should be studied for evidence of emotional instability, and vigorous efforts should be made "to create a feeling of security at home and at school."[89]

One study goes so far as to say on the basis of case study analysis, "We have attempted to show the genesis of the reading defect as a single aspect of more comprehensive disturbance in the evolution of psychobiological functions." They held that whenever tutoring succeeds, it does so because the tutor has fulfilled some of the fundamental emotional needs presented by the individual child.[90]

Whether emotional maladjustment causes reading disability or vice versa is an unsettled question. Gates says this about it:

> ...."personality maladjustment is frequently found to coexist with reading disability. The more serious the reading retardation, the greater is the probability that maladjustment also exists. My estimate is that among cases of very marked specific reading disability, about 75% will show personality maladjustment. Of these the personality maladjustment is the cause of the reading defect in a quarter of the cases and an accompaniment or result in three-quarters."[91]

[86] Joseph Jackson, "A Survey of Psychological, Social, and Environmental Differences Between Advanced and Retarded Readers," *Journal of Genetic Psychology*, Vol. 65, September, 1944, pp. 113-131.

[87] Robert S. Redmount, "Description and Evaluation of a Corrective Program for Reading Disability," *Journal of Educational Psychology*, Vol. 39, October, 1948, pp. 347-358.

[88] Beatrice Lantz and Genevieve Leebes, "A Follow-up Study of Non-Readers," *Journal of Educational Research*, Vol. 36, April, 1943, pp. 604-626.

[89] Beulah G. Gilkey and Frank W. Parr, "An Analysis of the Reversal Tendency of Fifty Selected Elementary School Pupils," *Journal of Educational Psychology*, Vol. 35, May, 1944, pp. 284-292.

[90] Emmy Sylvester and Mary Kunst, "Psychodynamic Aspects of the Reading Problem," *American Journal of Orthopsychiatry*, Vol. 13, January, 1943, pp. 69-76.

[91] Arthur I. Gates, "The Rôle of Personality Maladjustment in Reading Disability,

At least this is clear; these two very serious problems are interrelated and, to a certain extent at least, mutually caused. It is the school's responsibility to do whatever is possible: first, in aiding the child's emotional development from the time he enters school and by doing what is necessary to solve emotional problems already present. Second, it is the school's responsibility to do everything possible to prevent reading failure, not only for its own sake but because of the serious concomitants. Emotional maladjustment, brought about by an inadequate reading program may have far reaching consequences.

Developmental vs. remedial programs. Perhaps the greatest change in emphasis over the last several years is that from remedial reading to developmental. It comes when the reading program no longer demands a standard of so much accomplished by each child by the end of the first grade, if he is not to be considered a failure. When teachers and children are released from this arbitrary, fixed, and quite unrealistic goal, developmental reading can better take place. Here each child proceeds as he is ready. He can work pretty much at his own pace, making real and solid progress as he goes and continually succeeding as he goes. There is no opportunity for "failure" and "remedial" instruction, for he is never allowed to become educationally "ill." Continual evaluation and diagnosis of a very informal nature spots difficulties as they arise and overcomes them before they become problems.[92]

A most helpful pamphlet[93] has been produced which gives teachers definite and specific help in developing such a program. It discusses determining the achievement level of the child, adjustment of materials to rates of learning, the difficulty of the book available, and how to determine the sequential order of books as far as difficulty is concerned.

Remedial instruction not only presupposes failure but announces that failure to the world. This in and of itself causes enough emotional difficulty to be a stumbling block which has been put there entirely by the philosophy behind the school program.

There are cases in which a special help program is needed and justified. When, in spite of the best efforts of the teacher, little or no progress is being made, something more needs to be done. This is best done in the regular classroom with the help of a reading specialist. The specialist

---

Pedagogical Seminar and *Journal of Genetic Psychology*, Vol. 59, September, 1941, pp. 77-83.

92 References that are particularly helpful here are (See bibliography) Emmett A. Betts, *Foundations of Reading Instruction with Emphasis on Differentiated Guidance*, sections from the whole book, but particularly Chapters XXI and XXV.

Paul Witty, *Reading in Modern Education*, especially Chapters VI, VIII, and IX.

Arthur I. Gates, *The Improvement of Reading: A Program of Diagnostic and Remedial Methods.*

93 Harriett Carmody, *The Adjustment of Reading Materials to Individual Achievement Levels and Learning Rates* (Pullman, Washington, School of Education, State College of Washington, 1947), 33 pp.

has the time, training, materials, and facilities to do much more thorough diagnosis and planning for the needs of the particular child. She can furnish suggestions and materials to the classroom teacher, who can work best with the child because she knows him best. The child is not marked a failure.

Where the problem is so severe that still no progress is made, whatever provision seems to offer a possibility of success should be made. These pupils may have some severe physical defect which needs correction but may take considerable time. Or they may be severely disturbed emotionally, which will need the care of a specialist and will also take considerable time before much progress is made.

Where the developmental philosophy has not been put into effect, probably special classes are desirable. As Strang points out, where the classes are too large, the materials too little and of too narrow a range, and the teacher too poorly trained, special classes are desirable for severely retarded readers, non-readers, and those who are emotionally disturbed, for whom "regular" texts and reference books are too difficult and who need experiences of success which they do not get in the regular class. The special classes are not needed when classes are small, when the pupils have a wide range of materials, and when all teachers are trained in a method of reading diagnosis and instructions. She also believes that every school should have a director of reading who will coördinate the reading instruction, help teachers grow in service, and work as necessary with individual pupils and parents.[94]

Special Materials. There are several lists[95] of books particularly suitable to backward readers where the interest level is higher than the level of reading difficulty. These are of great assistance in developing a liking for reading in the poor reader and consequently improving his ability.

There is also a subject index[96] to books for primary grades which is useful as it is organized by topics. A teacher can find topics of interest to slow readers in these easy reading books.

[94] Ruth Strang, "Why Special Classes for Severely Retarded Readers," *Education,* Vol. 68, June, 1948, pp. 604-609.

[95] Anna Allmon, "Animal Stories for the Over-age Pupil," *Elementary English Review,* Vol. 12, October, 1935, pp. 194-198.

American Library Association, *The Right Book For the Right Child* (New York, The John Day Company, Inc., 1933).

Gates, *Improvement of Reading, op. cit.,* Appendix 3.

J. A. Hockett, "Reading Interests of 7-section Pupils," *Elementary School Journal,* Vol. 36, September, 1935, pp. 26-34.

"Library Books Liked by Retarded Children," from *School Library News* (Newark, N. J., Board of Education Library, 1937).

Minneapolis Public Library, Children's Department, *Books in Which Children Have Manifested Spontaneous Interest* (1937).

Winnetka Primary Teachers and Research Department, *Books for Children,* Grades 1, 2, and 3.

[96] Eloise Rue, compiler, *Subject Index to Books for Primary Grades* (Chicago, American Library Association, 1943), 236 pp.

XII. UNDERSTANDING WRITTEN COMMUNICATION: READING FOR VARIED PURPOSES

By the time the average child enters fourth grade he will have a basic mastery of reading technique and a definite independence in his reading of material suited to his level. From this point on he will continue to learn how to vary his techniques with the material and the purposes for which he is reading. He will refine and progressively automatize his reading habits. He will learn new vocabularies and new purposes in reading. Aside from his reading for enjoyment, the bulk of his reading will be in the content fields. This wide reading is a means of many new and varied approaches to the materials and concepts of those fields and helps insure learning. If the child is in a modern school, this reading will be almost entirely for the main purpose of solving a problem which he has helped to propound and has accepted as his own.

To solve that problem he must first locate material, select and evaluate it, and organize it so that he may present it to the group. Various situations call for greater or lesser emphasis on these different phases, but they are all present to some degree. These techniques must be systematically developed. These are best developed in the situation and among the materials with which they are to be used. Many companies are now publishing what they usually call curriculum or unit-activity readers. These have content material written within the ability and interests of children. Many have work-type reading exercises. These may be helpful but should not take the place of the larger unit problems.

Reading for critical thinking. Critical thinking should be a part of all reading at every level. It becomes particularly important and a proportionately greater part of reading in the non-fiction or content areas. The ability to recognize and solve personal and group problems is basic. Russel[97] points up the fact that reading activities are particularly valuable for stimulating critical thinking. As he says, "Mere literacy will not save a democracy." He gives the following conditions for critical thinking:

1. Knowledge of the field or fields in which the thinking is being done.
2. General attitude of questioning and suspended judgment, a habit of examining before accepting.
3. Some application of the method of logical analysis or scientific inquiry.
4. Taking action in light of this analysis or reasoning. This is the only way in which a child will learn to check on and take responsibility for his own thinking.

Reading for understanding. This, of course, is taken for granted as an essential purpose of all reading. The important point is that there is no single ability of comprehension. Comprehension may be broken down

[97] David Russel, "Reading for Critical Thinking," *California Journal of Elementary Education,* Vol. 14, November, 1945, pp. 79-86.

into various components and is different for different purposes and with different material. Davis lists nine components of comprehension:

1. Word knowledge
2. Measure of reasoning in reading
3. Focusing of attention on writer's specific statements almost to the exclusion of their implication
4. Ability to identify a writer's intent, purpose, or point of view
5. Ability to figure out from the context the meaning of an unfamiliar word or to determine which one of several known meanings of a word is most appropriate in its particular contextual setting
6. Ability to grasp the detailed statements in a passage
7. Ability to follow the organization of a passage and to identify antecedents and references in it.
8. Specific knowledge of literary devices
9. Ability to select the main thought of a passage [98]

In fact, when the reading consisted of five different types of paragraphs which involved critical evaluation, the intercorrelations ranged from —.04 to .77, with many of them under .60.[99]

Rate vs. comprehension. Incidentally, the rate and effectiveness of comprehension have been considered to go together. The faster a child read, the better he understood what he was reading. Now it is found that many factors are involved. The purpose, type, and difficulty of material are all involved. A study found that when the purpose is controlled and the rate score limited to the time spent in comprehending at a certain level the correlation was .30. Good comprehenders adjust their rate of reading by slowing down as the material increases in difficulty, whereas poor comprehenders apparently read easy and difficult material at much the same rate.[100]

Reading in the various content areas also needs special consideration. Needed skills and techniques which are appropriate to the type and purpose of the material should be continually kept in mind and taught when necessary. Each area has a specialized vocabulary which needs direct teaching. The more one knows about a topic, the more one gets from reading about it; and of course, the more one reads, the more one knows. But it is most helpful to develop a background of understanding, a readiness, before reading is done on a topic. It is also essential that the books in the content areas suit the reading abilities of the children who are to read them as well as other reading materials do. Many social studies, arithmetic, and health texts are written at a level which makes them too difficult for effective reading. This discourages children with reading and

[98] Frederick B. Davis, "Fundamental Factors of Comprehension in Reading," *Psychometrika,* Vol. 9, September, 1944, pp. 185-197.

[99] Roma Gans, *A Study of Critical Reading Comprehension* (New York, Bureau of Publications, Teachers College, Columbia University, 1940).

[100] Paul Blommers and E. F. Linguist, "Rate of Comprehension of Reading: Its Measurement and Its Relation to Comprehension," *Journal of Educational Psychology,* Vol. 35, November, 1944, pp. 449-473.

certainly contributes to a child's dislike of the content area. An excellent discussion of developing reading in the content fields with many specific suggestions given is in the report of one of the reading conferences at Chicago.[101]

Reading to locate material. As the child progresses, his reading to locate material will develop from finding a certain topic in the book the teacher suggests, to finding other references to the same topic in other books in the room, to finding pertinent books in the library, and finally to using the complete resources of the library for his research.

His special techniques should be developed to include these.[102]

1. Skimming to locate material
2. Use of the table of contents
3. Use of table of maps or illustrations
4. Use of index
5. Use of library
   - Ability to use card file
   - Ability to find books independently
6. Knowledge and use of special books
   - Dictionary
   - Encyclopedia
   - Atlas
   - *Reader's Guide*
   - Yearbooks, including *World Almanac*
   - Bound periodicals
   - Telephone directory
   - Railroad guide and time-table
   - Newspaper files

Problems in the various content fields should be so planned as to give all children experience and a certain facility with all these abilities. Many of them are basic habits in all study, and all are important for children to know.

Among the less obvious problems in acquiring these abilities the following need attention:

1. Ability to quickly locate a certain word in an alphabetical list, as in the index, card index, or a reference book
2. Ability to locate a topic in an index when it appears as a subtopic
3. Ability to suggest keywords, other possible topics, and sub-topics to find desired information through the index or a reference book
4. Use of cross-references such as "See" or "See also" in the index or library card index, or reference book; or tracing down meanings in a dictionary
5. Understanding certain mechanical features, such as the numbering of maps, figures, or illustrations when not by pages, main headings, and sub-headings

101 William S. Gray, compiler and editor, *Improving Reading in the Content Fields*, Supplementary Educational Monographs, No. 62 (Chicago, University of Chicago Press, 1947), 240 pp.

102 Much of the material in the remainder of this section has been adapted from Paul McKee, *Reading and Literature in the Elementary School* (Boston, Houghton Mifflin Company, 1934), Chs. IX, X, XI, XIII.

Reading to select and evaluate material. When the child has found the place in the book dealing with the topic in which he is interested, he is ready for the next step. He must be able to recognize what is pertinent and what is not. He must not miss any important data, and he must determine if the information is valuable for the solution of his particular problem. He must select what is pertinent and evaluate its present worth to him. To do this the following abilities are necessary:

1. Ability to carry the problem in mind while reading
2. Ability to find sub-problems to the main problem
3. Ability to select facts which relate to the problem
4. Ability to recognize likenesses and differences between the problem and material located
5. A knowledge of synonyms of words or phrases involved in the problem
6. Ability to obtain information from maps, charts, graphs, illustrations
7. Ability and habit of validating information by one or more of the following methods:
   - *a.* Check on recency of material
   - *b.* Check on authority for material as standard reference, newspaper material, writing of one or more authors
   - *c.* Check on probable validity of a certain author's writing
   - *d.* Determine whether statement is opinion or well-founded fact
   - *e.* Cross-check information from one source with comparable information from another

Reading to organize material. When material has been located, selected, and validated, it must then be organized in terms of the problem to be solved. This entails further specific as well as general reading abilities.

1. Ability to determine the key sentence or central thought of a paragraph or section or make sectional headings
2. Ability to locate supporting ideas and discard irrelevant ones
3. Ability to take notes well on important information and interpret the source accurately
4. Ability to arrange ideas in proper order
5. Ability to outline, putting in main headings and sub-headings giving important information
6. Ability to make a summary, in a paragraph or so, of material used

Reading to remember. If a child has worked through his problem using several of the techniques listed in the previous sections, he is pretty certain to have made the material his own. There are times when the main point in reading is to reread for retention a certain section of material which has been located and decided pertinent. Then the following techniques are of particular help:

1. Thorough understanding of the material
2. Thoughtful attitude while reading, constantly relating it to the main purpose
3. Rereading the material at spaced intervals
4. Recognizing main points of importance and relating details to these

5. Outlining
6. Summarizing
7. Knowledge of efficient methods in memorizing as by the "whole" method

Various other purposes in reading to study. The four preceding sections cover the main abilities, knowledges, and habits specifically suited to reading to learn. There are a few other abilities which are important enough to be considered here:

1. Reading to follow precise directions
2. Reading to answer specific questions
3. Reading to locate and state the problem
4. Reading to determine the essential conditions of a problem

XIII. UNDERSTANDING WRITTEN COMMUNICATION: READING INTERESTS

Interests can be developed. The reading interests of children have been the subject of numerous investigations. Many of these investigations show that the amount of free reading is pitifully meager for the average child. What he does read is, in most cases, not what his adult advisers would wish. Usually he decidedly prefers prose to poetry. This is not a desirable situation, but the important key to it has been left out. Children, *under the proper conditions and adequate stimulation,* learn to do much reading of the type adults suggest, and like poetry as well as prose.

A child's reading volume and interest seem to be largely determined by his literary environment, his reading ability, his mental and emotional development, and his own experiential background. There is evidence that children read what is available. It is thus a prime responsibility of the school to furnish a large supply of "desirable books." [103] This supply should include a wide variety of types, the child "classics" and the modern fiction and non-fiction, a wide range of subject-matter, and varying degrees of difficulty in each type.

An experiment in promoting interest in reading was carried on in the fourth and fifth grades. Specific instruction was checked against incidental training, and the former was found to give much better results. The training program provided for individualized instruction, wide opportunity for free reading, and planned guidance. The conclusion was that "children, even retarded readers, can be led to develop an interest in free reading, to establish the habit of voluntarily reading books, and to acquire the habit of reading regularly for pleasure." [104]

Since reading ability is a factor in free reading, it is an added reason why teachers should see that each child is provided with books which

[103] See pages 415-417.

[104] Maude Greene Fox, "An Experiment in Promoting Interest in Reading," *Elementary School Journal,* Vol. 47, April, 1947, p. 460.

he can read well enough and rapidly enough so that he can forget technique and lose himself in the story. It is also important that much successful experience be given with thought-provoking material if pupils are expected to enjoy factual reading as well as fiction.

Comic books have been a problem to many teachers. Most of the recent research shows that while they are not high-class literature there is little of anything harmful in most of them. They do furnish a wealth of easy reading, and they definitely are popular with practically all children. Forbidding children to read them is foolish and in most cases only makes them so much more desirable. They provide adventure and excitement, which children need. They make reading fun. They can and should be used constructively to develop interest in other reading, not by insisting on the child's reading of better-written but much less exciting books and saying, "Now see how much better it is to read books than comics." The child won't be convinced! Rather, better-written books with in general the same kinds of stories can really be appealing to a child. Classic comics, which put old classics into comic book form, have been bewailed by many. However, it does get children familiar with the stories of these books, gives them so much added general information, and lets them enter into conversations about books that would not otherwise be possible. And many times it has stimulated children to read the original. In one case, a boy said, "I never would have had the courage to wade through all that description and those dull spots if I hadn't known about the exciting parts ahead." Since comics are here and children are going to read them, they may as well be used as stepping stones to better reading. As Arbuthnot says, "there is probably little cause to worry about children and their comic strips as long as they are also enjoying good books." [105]

A Public Affairs pamphlet on *Comics, Radio, Movies—and Children* discusses the question from a very common-sense, realistic standpoint. They bewail the "emotional atmosphere" which surrounds the whole question, for this hinders rather than helps the solution of some of the very real problems involved. "Many of the recent attacks on the comics have made parents anxious as a result of the scare headlines. This is unfortunate, because anxious parents may do more damage to their children than comics reading! The critics are apt to point to the "horrible example," without reassuring parents that "comics are not all like this and children not all like this." [106] Whether comics contribute to juvenile crime is dubious. Even when the two go together there is no assurance that the comics caused the criminal tendencies any more than the child's criminal tendencies caused his selection of that type of comics. "We shall

[105] May Hill Arbuthnot, "Children and the Comics," *Elementary English*, Vol. 24, March, 1947, pp. 191-193.

[106] Josette Frank, *Comics, Radio, Movies—and Children*, Public Affairs Pamphlet, No. 148 (New York, Public Affairs Committee, Inc., 1949), p. 6.

not cure the causes of this juvenile behavior by blaming it on their reading or on the radio or the movies. It lies much deeper, in our society's failure to meet the basic needs of these children." [107]

Other means. As for the child's emotional development and experiential background, they are as much dependent upon the reading done as they are a factor in its selection. A child must be taken from where he is, and his tastes must be gradually developed.

The important thing is to see that *a child's reading tastes develop as he develops.* He should gradually be led to read on ever increasing levels, but always within his ability to understand. This guiding can be done in various ways. The first is by surrounding the child with the desirable type of books. Pupils like books which their favorite teachers like and those they read under pleasant, agreeable conditions. They also like to read things liked by popular classmates.

Children have learned to like poetry through the teacher's own enjoyment of it with the group. The selection of the poetry is important, for poems selected by specialists may or may not appeal to children. Fifty poems, chosen for their literary merit and probable appeal to children were evaluated by 726 pupils from grades three to eight. Those they liked most were narratives which included "humor," "dramatic action," "pleasant experiences," "dealt with subjects agreeably familiar," and written in "simple style." The ones they did not like were "not understood," "distasteful or disturbing subjects," "troublesome style," or "figurative language." [108]

One of the more recent means of stimulating reading is through the use of phonograph records. MacBean lists 154 double faced records for grades one to eight which tell enough of certain stories to interest children in reading them. These particular records were selected on the following basis: the voice of the narrator was pleasant, his diction good; continuity was clear, variation sufficient; the stories were discussed or dramatized at a pace the child could comprehend, the backgrounds accurate; and they gave pleasure. The grades for which each is appropriate are given. These records fulfill several purposes. They lead the child to a book, build up and enrich his background, and add the auditory image medium to help make good literature a part of every child's background and to help the child interpret the story.[109]

Reading clubs may be formed by small groups in the room which are interested in a certain type of story. One group may be interested in stories of adventure in foreign lands, another in animal stories, another perhaps in the lives of famous people. Here, then, is opportunity for mutual stimulation and critical evaluation.

[107] *Ibid.*, p. 7.

[108] George C. Kyte, "Children's Reactions to Fifty Selected Poems," *Elementary School Journal*, Vol. 47, February, 1947, pp. 331-339.

[109] Dilla W. MacBean, "Phonograph Records to Stimulate Reading," *Educational Screen*, Vol. 27, May, 1948, pp. 224-226.

Other means that have been used successfully to stimulate interest are: [110]

Children supplied with lists of books carefully selected for their interest to children.
Teacher or librarian reads interesting passages or chapters in books or gives summaries of books.
Discussion of titles and authors.
Discussion of some known author's other writings and reading book reviews of these publications.
Children give a short review of books they have read, or read excerpts from them.
Interest and competition in keeping personal reading lists.
Displays of books, particularly including books new to the library and those especially suitable for certain seasons or occasions.

There are several excellent discussions of the teaching of literature and good reading available.[111] Good results come only from careful planning by the teacher and indirect, if not direct, teaching. This type of instruction takes more care and effort but it is of ultimately greater value.

Certain factors of children's interests are helpful in guiding children's reading.

1. Material must be suitable to their level of understanding. This means of course that the material must be well within their reading ability. Besides this, it must be within their understanding mentally. One reason for children's change of taste as they grow older is that with added maturity they can understand and appreciate many more things. Children develop emotionally as well as in other ways, or at least they should. This development is much less regular than most other phases. A child does not usually like to read materials that are so far from his own experience that they have little meaning. There must be enough common experience to enable him to vicariously live the other situation.

2. Stories must be fast moving and graphic. Children want active not passive situations. They want action, something doing all the time to hold a developing interest and make more fascinating a new technique. They prefer direct to indirect conversation, a minimum of pure description and many pictures. Preaching or moralizing stories are often definitely disliked.

3. They enjoy records of human experience which are partially familiar to them. This fits in with the experiential background discussed above. Since in such stories they are apt to identify themselves with the hero or heroine, the type of person portrayed is important. The first interests in this kind of story will probably be among the serial stories,

[110] Adapted from May Lazar, *Reading Interests, Activities, and Opportunities of Bright, Average, and Dull Children,* Contributions to Education, No. 707 (New York, Teachers College, Columbia University, 1937), p. 24.

[111] McKee, *op. cit.,* Ch. XIV. Jean Betzner and R. L. Lyman, *Thirty-Sixth Yearbook* of the National Society for the Study of Education, Ch. VI, and also the *Forty-Eighth Yearbook,* Chap. X.

but they can be directed toward interest in biography. Particularly is this true at the time reality is especially important to the child, for all these characters can be shown to be real people.

4. The tastes of bright children differ somewhat from those of average children, and these from the interests of the dull. One investigation of this is by Lazar,[112] who studied the preferences of boys and girls at various intelligence levels in both periodicals and books. Table VIII gives some idea of the variations in interests as well as types of interests in both boys and girls.

TABLE VIII

KIND OF BOOKS LIKED BEST ACCORDING TO MEDIAN IQ OF PUPILS *

Kind	*Boys*		*Girls*	
	Number	Median IQ	Number	Median IQ
Mystery	250	96	269	99
Adventure	227	110	138	107
Detective	206	93	53	90
History	99	97	55	98
Invention	69	102		
Science	66	112	12	100
Nature	48	90	36	98
Fairy Tales	24	89	239	91
Biography	16	103	25	95
Novels	13	123	47	122
Home and School			74	101

* Adapted from Lazar, *op. cit.*, Table XVI.

The pupils in the study were taken very largely from grades four through six and were ten, eleven, and twelve years old. The table shows the relative number of boys and girls of these ages who enjoy various kinds of books. It also shows the proportion in which various types are popular, and especially the fact that the outstanding favorites are mystery, adventure, and detective stories for the boys, and the same for the girls except for the very decided substitution of fairy tales for detective stories.

The median IQs given are interesting when considered in relation to the types of books at this age level. However, it must be pointed out that practically all books are read over all intelligence levels, but the predominance of choice is more extensively at one level than another. Adventure stories provide a good example. These are liked by 33 per cent of the bright boys, 22 per cent of the average boys, and 10 per cent of the dull boys; by 21 per cent of the bright girls, 14 per cent of the average girls, and 8 per cent of the dull girls.

5. Tastes were affected largely by socio-economic status and amount and kind of reading material in the home, entirely apart from the intel-

[112] Lazar, *op. cit.*, Chs. V and VI.

ligence of the child. Lazar [113] found that "an analysis of the responses of bright pupils rating lowest in socio-economic status showed that these pupils were interested in reading but that the quality of the material was inferior." Various other analyses show considerable relationship. The average and bright children show more ability to take advantage of school facilities than do the dull. It should be the especial responsibility of the school to develop the tastes and interests of the children from poor homes. The dull need the most help.

6. There are marked sex differences in the type of books read by boys and girls. Whether this is due to suggestions of books to read or to the differences in the activities of boys and girls in their present environment cannot be said. According to a study by Mead [114] of the primitive tribes in New Guinea, the sex differences in temperament and behavior are largely dependent upon different social attitudes in different societies rather than inherent tendencies. In the light of this and the increasing similarity of position of men and women in our present society, it seems that this dissimilarity of interests should be discouraged rather than encouraged. There should probably be no separate list of books for boys and girls.

7. Children's interests vary with age. One of the most comprehensive studies in this respect is by Terman and Lima.[115] The findings concerning interests at various ages show that children around five enjoy jingles, nursery rhymes, simple fairy tales and animal stories. Children of six or seven are primarily interested in nature stories, myths, and legends. The eight-year-old likes fairy tales and stories of real life. By nine the shift is toward the factual material. At ten the desire for facts as well as imagination finds outlet in books of travel, stories of other lands, mechanics, and biography. At eleven, books of adventure, science, home life, and nature stories are popular. At twelve there is particular interest in biography, hero stories, science, adventure, home-life, and nature stories.

Another comprehensive study by Uhl [116] shows certain characteristics which are particularly important at various ages. *Dramatic action, humor* and *interesting problems* or *character study* increased in importance with age. *Fairy stories* and those of the *supernatural* were most important in grades two through five. *Kindness* and *faithfulness* were significant in grades three through five. Older children from grade six on liked interesting characters. *Animalness* and *personification,* and *interesting repetition* were of little importance above grade three.

[113] Lazar, *op. cit.,* p. 101.

[114] Margaret Mead, *Sex and Temperament* (New York, William Morrow & Company, 1935).

[115] L. M. Terman and Margaret Lima, *Children's Reading* (New York, Appleton-Century-Crofts, Inc., 1931).

[116] W. L. Uhl, *Scientific Determination of the Content of the Elementary School Course in Reading,* University of Wisconsin Studies, No. IV (Madison, University of Wisconsin, 1921).

8. Most important of all: children's interests can be developed. Several studies have shown that interest in poems can be created. One instance reported by Lazar [117] will show what can be done and should be a stimulation to all teachers. Miss Lazar supervised a project with forty very poor readers in a probationary school for the "placement of truants":

> Most of these boys were of low mentality, had failed in school repeatedly, and came from environments similar to those described (foreign homes, lowest occupational ratings, largest percentage of unemployed, fewest books and magazines). By intensive guidance these boys were trained to like reading to such an extent that they wanted more time than was given. Their attitudes, in fact one might even say their personalities, were considerably changed as a result of this special guidance. They were surrounded by specially selected books and other materials which they did not have at home; they obtained library cards and made good use of them. Their library readings were checked in order to determine whether or not they had actually read the books. Eighteen of the boys who had never before voluntarily read any book reported from 10 to 46 library books read during a period of eight months. Others reported from 2 to 8 books. Investigation by the teacher showed that the books had actually been read and the contents had been satisfactorily comprehended. Better social adjustment was also reported as a result of this special guidance.

If these results can be obtained with this type of child, the opportunities are enormous and usually untouched with the average child. It is astounding what concentrated effort and good teaching can do.

What should the child read? There are many well-selected and graded book lists. These usually include books which are both recommended by experts and also have high interest value.

One of the best is *Treasure for the Taking,*[118] which lists books by age groups and gives considerable other information to help in selection for a particular child or a particular group. Another excellent one is *Children and Books.*[119] This has much excellent material for the teacher as well as suggesting and discussing books of all types for children. Adult as well as children's references for each chapter lead one to many other sources.

Reading in Modern Education [120] gives various types of lists, the books most popular in libraries, books reported by children as being best liked, and a list of books chosen by children and also found in bibliographies prepared by adults. Another list is of special interest, for it includes magazines for children of various ages and other current news material which might be of interest to boys and girls.

The *Forty-Eighth Yearbook* [121] gives a number of lists against which to check library resources, including material on magazines for school libraries.

[117] Lazar, *op. cit.*, pp. 105-106.
[118] A. T. Eaton (New York, Viking Press, Inc., 1945), 248 pp.
[119] May Hill Arbuthnot (Chicago, Scott Foresman and Company, 1947), 626 pp.
[120] Paul Witty, *op. cit.*, pp. 115, 118-121 and 273-301.
[121] *Reading in the Elementary School, op. cit.*, p. 211.

The *Forty-Second Yearbook* [122] deals with the whole problem of the library and its use.

There are many other lists of books which may be located through various sources.[123] In many cases it is the teacher herself who will have to decide on the books.

What is "good" literature for children? The standards for children's reading have long been what adults considered best for them. It is obvious that those standards have changed from the times when only the Bible and the classics were considered "fit" reading. To-day there is a whole field of child literature, some "approved" and some not. Some modern books for adults have also been "accepted." Many question the right and the ability of adults to select what children "should" read. If the leadership and advice of a mature and educated person mean anything, if we have a right to direct any child learning, then certainly we have a right to direct his reading. That direction should never be prohibitory, as they say: "stolen fruit is best; bread eaten in secret is sweetest." Rather it should be a concerted effort to get the child to select the more desirable books.

The real problem is, What should be the basis for that selection? The first criterion must be that the book shall be interesting to the child and that he will enjoy it enough to continue reading it with eagerness and pleasure. Too many of the libraries have been built up of books selected only on adult opinion.

A second criterion is that the books cover a wide range of types and interests. Thus every child will be able to find something he is interested in reading about. It also provides for broadening interests of all the children.

Another criterion should be the quality of the writing itself. Poor grammar and sentence structure should be avoided. Many of the series books are the worst offenders, considering their large number and popularity. Usually, however, these have high standards of ideals, and where this is true they may partly counteract other weaknesses at this age of idealism in children. Simple, direct expression will be both more interesting and more desirable than complicated and involved writing. Aside from these two points, the most important question as to the writing is, Does the book come within the reading ability and the understanding of the individual?

The next criterion involves the subject-matter or material in the book. If an important phase of reading is the reader's vicarious experiencing of the situations read, then *the total effect on the child* of these experi-

[122] National Society for the Study of Education, *The Library in General Education, Forty-Second Yearbook,* Part II (Bloomington, Illinois, the Society, 1943).

[123] Lazar, *op. cit.,* p. 126. Lists based on interests alone are given on pp. 55-79; McKee, *op. cit.,* pp. 510-514 and 551-559.

ences must be good. Undesirable experiences in themselves may be beneficial if the total effect is morally good. But then the book must be so written that the child, himself, reacts to the situation as undesirable. Here is the question of whether fairy stories and other books that are far from the realities of life are harmful to children. Some children like to read them, some do not. Rather than assuming that this type of story leads to avoidance of reality, it is quite likely that the children who do not want to face reality choose to read this sort of story. It is doubtful whether a certain amount of reading of this type is harmful, *if it is balanced with a variety of other types.*

Many adults criticize books as being too exciting. This depends entirely upon the reaction the book has on the particular child. When, as one little girl said, she "dreamed of lions and tigers all night" after reading Tarzan, she should probably not read more of that type. Here, as with almost everything, is the problem of individual differences.

Children develop mentally, emotionally, and in their interests. At various stages various types appeal and because an adult "does not like" a book is no reason that a child should not read it, if he wants to. If a child reads widely from many different types, there is little danger that any one book will do him much harm.

XIV. DEVELOPING BETTER WRITTEN COMMUNICATION: WRITTEN EXPRESSION

Most of the things which have been said about oral communication may also be said about written expression. There are several points which need stressing.

The child should write to satisfy his own purpose. An assigned theme or composition on a stated topic or on a choice from a list of topics probably will have more undesirable than desirable results. Attitudes toward writing are developed which do more to hinder further free expression than the experience could possibly do to help. Have the writing something that the child feels needs to be done, not just something to please the teacher. Writing a letter for something he wants, writing out a report he is going to make to the group or to another class, summarizing the work of a committee so that it can be read to the group or put in with the rest of the larger study, re-writing material in simple language for a lower grade to read are a few of the real purposes which may be met. A little writing done with real purpose accomplishes more than much writing done as a task. Boys tend to write less than girls. Don't expect as much of them.

Written expression should be judged on content before form. If the child can have worth-while ideas and thoughts, that is most important. Next comes the ability to express them accurately and clearly enough for

someone else to understand. And third, the form of expression should be reasonably correct. This is the order in which children should work. A worthless or poorly expressed idea gains nothing by being grammatically correct. A child is better off spending his time in stimulating experiences and discussion, clarifying his thoughts and ideas, than in working over poor ones.

What about grammar? The tendency for a number of years has been more and more to move up in the grades the teaching of formal grammar. Most schools now do not teach it till seventh grade, although there are still some who teach parts of speech and sentence structure before that. One school of thought has continued to reiterate the lack of value of grammar for improving either oral or written expression. In a recent experiment one group was taught formal grammar and another only incidental instruction in use of commas, periods, and the like in reading and writing. The second group showed superior results in the use of grammar and punctuation in their writing. The "grammar group" passed higher on grammar tests (!), but the knowledge did not transfer to the writing of compositions.[124]

Kaulfers sums up the situation: [125]

> Whatever the value of formal grammar may be to adult specialists... the fact remains that no scientific study of the many available in English and the foreign languages has shown that sentence analysis, diagramming, parsing or nomenclature-drill is of the slightest benefit in improving a person's own personal use of language. Instead the chief result of such methods has often been a strong dislike of language work, antisocial self-consciousness in oral and written expression, or complete frustration.
>
> Departures from accepted usage are symptoms of a very limited and underprivileged language environment outside the school. Wherefore no program of instruction is likely to prove highly successful in improving the pupil's own personal use language, unless it first of all makes provision for a fundamental enrichment of language experience, with opportunities to hear good English, and for audience situations that will serve as incentives to learn to speak and write effectively.

Errors considered in perspective of "level" and "personality" concepts. This concept of language levels, when associated with the concepts of problems of pupils outlined in section one, furnishes the basis for a significant approach in improving usage. With that understanding of the child, with the situations in which language is used and the possible abilities and appreciations all taken as a background, the discussion of error studies can be presented in proper perspective. Obviously, it is not expected that the errors listed will be the subject of much detailed drill. The purpose, rather, is to give some idea of the probable frequency of

[124] Harry A. Greene, "Direct versus Formal Methods in Elementary English," *Elementary English*, Vol. 24, May, 1947, pp. 273-285.

[125] Walter V. Kaulfers, "Common-Sense in the Teaching of Grammar," *Elementary English Review*, Vol. 21, May, 1944, pp. 168-174.

the errors and the kinds with which the elementary teacher will be most concerned.

Many studies of pupils' usage and errors have been made.[126] These discussed here are used for illustrative purposes. The point of view on the teaching of usage is represented by a statement by LaBrant which was made after much careful research in the language of children: [127]

> The use of language requires a tremendous force and develops remarkable skills quite irrespective of schoolroom teaching. So great does this informal learning become that the teacher of language may well question his need or effectiveness. It is imperative to study how a child talks, and to know what he can do without our teaching. Nothing could be more wasteful than to spend two years teaching a language form which will develop without teaching.

Sentence structure indicative of experience. Substantiative evidence for LaBrant's statement is found in researches which show that sentence structure is an indication of the completeness of an experience and the stage of development, rather than poor form. Where children have had the opportunity to write of experiences that are complete to them, errors in sentence structure do not appear.[128] Where children are assigned topics on which to write, structural errors should be assumed to be the result of incomplete experience or incomplete or inaccurate thinking. If this point of view is accepted, then time will not be wasted upon attempting to bolster structure through drill. Rather, children will be given opportunities to write about their experiences. Expression should follow experience and be judged according to the child's stage of development.

Types of errors. Some idea of the types of errors which pupils make can be obtained from a tabulation of errors made by fifth-graders. Clearly punctuation is the most frequent source of error as indicated in Table IX which lists the types of errors. These findings are typical of error studies.

Another study analyzed language errors in 2200 life letters recorded under 100 headings. About 50% were caused by ten simple types, and the authors suggest these ten as the basis for planned incidental teaching in the elementary school:

1. A sentence should begin with a capital, express a complete thought and end with a period or question mark.
2. Introductory words, as yes, no, well, etc. should be set off with a comma.
3. Proper names begin with a capital.
4. An apostrophe is used in contractions.

[126] Some of the studies and summaries of the studies are to be found in the following references listed at the end of the chapter. McKee (Language), Smith, Fitzgerald, National Conference on Research in Elementary School English, and Pooley.

[127] Lou L. LaBrant, "The Changing Sentence Structure of Children," *Elementary English Review*, Vol. 11, March, 1934, p. 60.

[128] *Ibid.*, pp. 59-65.

William C. Hoppes, "Some Aspects of Growth in Written Expression," *Elementary English Review*, Vol. 10, March, 1933, pp. 67-70. Copyright, 1933, by C. C. Certain.

5. An apostrophe is used in possessives.
6. Abbreviations are seldom desirable in letters.
7. Simple homonyms should be mastered and used.
8. Study meanings of words.
9. Slang and vulgarisms should be avoided.
10. Master the simple paragraph.[129]

TABLE IX

TYPES OF COMPOSITION ERRORS IN 718 LETTERS WRITTEN BY FIFTH-GRADE CHILDREN IN LIFE OUTSIDE OF SCHOOL *

Type of Error	*Average Number of Errors per Letter*	*Per Cent of Total Errors*
Punctuation	5.3	40.1
Miscellaneous (Number not written out, homonym, word incorrectly used, unnecessary abbreviation, omission of words, etc.)	2.9	21.6
Sentence structure	1.5	11.2
Capitals	1.4	10.7
Paragraphing	1.0	7.6
Adjectives, adverbs	.5	4.0
Verbs	.4	3.3
Conjunctions and prepositions	.1	0.9
Pronouns	.07	0.5
Nouns	.02	0.1
TOTAL	13.2	100.0

* Adapted from Patricia S. Geoghegan and James A Fitzgerald "Composition Errors in Letters Written By Children Outside the School," *Elementary School Journal*, Vol. 35, June, 1935, pp. 768-775.

The use of language texts. A number of teachers have been finding a different way to use language texts effectively. They long ago gave up the page by page assignment and study. Now the children keep their texts as reference books. Most new texts have come out in manual form so that children can easily find the answers to their questions. They can find models of various types of letters and notes, and a great deal more information which children can easily learn to use as they need it.

XV. DEVELOPING BETTER WRITTEN COMMUNICATION: SPELLING

Spelling work in the elementary school has become an integral part of written expression of pupils. There should be two important outcomes as the result of teaching in this field. Each pupil should have mastered a minimum list of words. He should also have developed the ability and

[129] James A. Fitzgerald and Lawrence C. Knophle, "Critical Language Difficulties in Letter Writing in Elementary School Children," *Elementary English Review*, Vol. 21, January, 1944, pp. 14-17.

desire to learn to spell the words used in his own individual writing. The child should early come to realize that the spelling lesson is not an end in itself, rather that correctly written material is the end sought. Certainly much work in the use of the dictionary is necessary. All words in important written work in whatever field it is prepared should be correctly spelled. The child should be taught to check his final draft as carefully as an author does before he sends manuscript to the printer.

How many words? Shall a child master the spelling of all the words in the English language? Obviously the answer is no. The problem then becomes one of what words do we expect the child to learn how to spell. Much careful research has been done relative to the words used by children and adults in their writing. As a result, the words most frequently used in written material are known. Also, something is known of the relative frequency of use of any given word.

Authors of spelling textbooks are familiar with these researches, and practically all of the texts utilize the findings more or less extensively. There is apt to be considerable disagreement between the various texts on the number of words to be taught, the grade in which they will be taught, and exactly which of the less frequently used words they will include. It is the habit of most books to include between four and five thousand words for mastery by the time the pupil has completed the eighth grade. Yet there is distinct evidence favoring a much smaller list than is commonly used.

There are two known facts concerning the writing of adults. First the writing vocabularies of various adults differ widely. They differ not only for various occupational groups but for individuals within a given group. Second, it is known that if a child can spell the 2,800 words most commonly used by adults, he will have mastered about 97.2 per cent of the words (running words) he would need for doing all the various types of adult writing analyzed. If he learns the 4,000 most commonly used words, he will have increased his mastery of words used in written material only 1.1 per cent or to 98.3 per cent. The addition of 1,200 words with a return of only 1.1 per cent in mastery seems unjustifiable. Especially is this true since research has shown that written material of individuals varies so widely.[130]

How should words be selected? Many teachers attempt to teach spelling by selecting the words from the children's writing which are misspelled. Drill is then given on the words so selected. This procedure sounds exceedingly practical. The outstanding difficulty is that most teachers have no criteria for selecting the words to stress, they feel that all misspelled words should be studied. The result is that children are supposed to master many words which they may never use in writing again, at least are most unlikely to use outside of the school-room.

130 These data are based on material in Ernest Horn, *Basic Writing Vocabulary* (Iowa City, University of Iowa, 1926).

A typical example of poor choice of words by the teachers is the following taken from a 6A unit on "English People, Then and Now." Under the section of the unit dealing with written language this statement is given:

Emphasize the following vocabulary in reading, spelling, and language activities.

peer	jury	document	Wedgwood
witenagemot	objection	Magna Carta	Galahad
moot	sustained	dominions	conquest
Parliament	Thames	defendant	witan
pound (money)	vassal	plaintiff	language
Tudor	lords	Lancelot	acanthus leaves
Stuart	archbishop	Saxons	Chippendale
abdication	Britons	representative	Danes

When these words are checked against the available research there are only three which are of sufficient importance to be mastered by sixth-graders. These are *objection, representative* and *language.* By a very liberal interpretation two additional words, *jury* and *documents,* might be included. In this case one-eighth of the words taught would be considered to be spelling words, the others an unnecessary burden upon the children. This is not an unusual example; there is only too much comparable evidence upon the blackboards of the country where teachers select words for children to study from the unit.

The remedy is for the teacher to use some of the same sources which spelling authors use to check the validity of the word as a spelling word. One of the best volumes is *A Combined Word List.*[131] After each word, the placement of the word according to a number of studies is given. Another valuable source is Ernest Horn's *A Basic Writing Vocabulary.*[132] This volume includes the 10,000 most commonly used words in adult writing. Either of these sources will furnish the teacher with a much more reliable basis for judgment than her own guess. A third source is Arthur Gates' *A List of Spelling Difficulties in 3876 Words.*[133] He supplies the average grade placement of each word from twenty-five texts and the difficulty of the word on various grade levels. Perhaps the best reference of all is *A Basic Vocabulary of Elementary School Children.*[134] This gives the actual frequency with which each word listed occurs in each grade and the total frequency for all grades, and also the frequency group by the hundred, five hundred, and thousand into which the word falls (according to his study of children's writing).

A combination which seems to meet the advantages of both a well-

[131] B. R. Buckingham and E. W. Dolch, *A Combined Word List* (Boston, Ginn and Company, 1936).

[132] Horn, *op. cit.*

[133] Published by Bureau of Publications, Teachers College, Columbia University, 1937.

[134] Henry Rinsland (New York, The Macmillan Company, 1945), 636 pp.

selected text and children's immediate needs uses a small standard list plus the pupils' own misspelled words.[135] The required list should be short and contain only the words most commonly used by children of that grade level. Then each child should keep a notebook of his own into which he copies words which he has misspelled in written work and which, according to one of the lists mentioned, can be considered a spelling word. That is, it should be a word which it is quite likely the child will need to spell again fairly soon. This should include names and words of local or family concern which the child uses repeatedly. Each child should also learn to check his written work and locate all doubtful spellings. He should develop the habit of using word lists and the dictionary to get the correct spelling.

Other problems. Another problem which has come in for much recent consideration is the problem of generalization. Much of the research upon the problem has been done by Gates[136] and his students. The present status of the problem is well stated by Breed in his summary: "The more recent studies seem to indicate that rules will be effective if a limited number are selected with a view to range of applicability, freedom from exceptions, and difficulty in learning; if these rules are inductively developed; and if the children are properly guided in generalizing in new situations." The teacher or course-of-study committee at work on this problem should realize that there are many "if's" in Breed's statement. The number of careful studies in this field is ample to show how the "if's" can be handled. Each group will have to make a careful study and application of the findings and techniques to its own situation. In general, very little emphasis should be placed on teaching rules.

Considerable controversy has arisen as to whether a child should study the lesson and then be tested, or whether he should be tested and then study only those words he does not know. Evidence in general seems to favor the use of the study-test plan in the primary grades and the test-study plan in grade four and above. However, for the poorer spellers the study-test plan is still best.

Smaller number of words. That a large number of words taught each week does not promote spelling mastery is obvious from the results in our present classrooms. Whether incidental teaching in the average classroom can be improved sufficiently in technique and selection of words to be studied is a question which has not been investigated. There is need for careful experimentation in this area. One hypothesis which seems to have possibilities is that a much smaller list (twelve to fifteen

[135] Recommended by Gertrude Hildreth, "Word Frequency as a Factor in Learning to Read and Spell," *Journal of Educational Research,* Vol. 41, February, 1948, pp. 467-471.

[136] See especially Arthur I. Gates, *Generalization and Transfer in Spelling* (New York, Teachers College, Columbia University, 1935).

Frederick S. Breed, "Generalization in Spelling," *Elementary School Journal,* Vol. 37, June, 1937, pp. 733-741. Presents a very adequate summary of the available research.

words a week instead of twenty to twenty-five) which practically all pupils can master, will promote a desire to have all their written work correctly spelled.[137]

Teaching methods. Too often the spelling period consists of the direction, "Take out your spelling books and study your words." It is no wonder that results are no better than they are! Directed learning is as important in this area as in any other. Children need to learn a method for studying a word.[138] They need to consider each word in their lesson carefully. They should understand its meaning thoroughly; and if it has more than one meaning, all those concepts which are within the level of understanding of the children should be brought out. Significant features of the spelling of the word which will help the child should be pointed out. In the upper grades common derivatives of the word may be mentioned and their use discussed. This discussion of the words by the children, guided by the teacher, is all that is necessary for some of the children and is a good start for even the poorest speller.[139]

The corrected test. The traditional practice in a spelling test was to say, "Pencils down—pass in the papers," as soon as the last word was written. And further, any word which showed signs of having been changed after it was first written was marked wrong. The teacher then laboriously corrected all the papers, recorded all the grades and may or may not have passed back the papers. If she did, it was at least the next day, and maybe the day after that. Practically all of the value which might have been gained from the test was lost! The value of the test lies in the pupil's correcting his own test immediately after he has taken it. Where spelling is studied three days a week, the initial study can be done on Monday, a corrected test given on Wednesday, and the final test Friday. Research shows that "as measured by the final Friday test or by recall tests after an interval of seven days, the corrected test alone will contribute from 90% to 95% of the achievement resulting from the combined effect of the pronunciation exercise, corrected test, and study. The corrected test appears to be the most important single factor contributing to achievement in spelling. One can obtain mastery or near mastery for the best one third of the class by the corrected test alone."[140]

Possible outcomes. Growth in spelling ability is gradual. As an aid in understanding the growth that is possible from grade to grade, the following expected outcomes are listed. It should be recognized that these

[137] In an unpublished study by the authors made in several classes in grades V and VI, the outstanding result was a changed attitude of many of the poorer spellers. For the first time they felt that they could spell correctly.

[138] Louis Ada Wilson, "Children's Spelling Needs and Their Implication for Classroom Practice," *Elementary School Journal,* Vol. 47, October, 1946, pp. 98-102.

[139] Dorris May Lee and J. Murray Lee, "Spelling Needs a Teacher," *Elementary English Review,* Vol. 23, May, 1946, pp. 203-206.

[140] Thomas D. Horn, "The Effect of the Corrected Test on Learning to Spell," *Elementary School Journal,* Vol. 47, January, 1947, pp. 277-285.

statements are taken from a carefully constructed spelling series which contains exercises that facilitate the attainment of these objectives.[141]

Second Grade. In the second grade good teaching should:

1. Develop the desire to have all words used in written work spelled correctly
2. Present a group method of study which gradually results in the pupils becoming habituated in an individual method of mastering new words
3. Develop the ability to relate the sound of words to their spelling
4. Develop the ability to write all the letters (except *j*, *q*, and *z*)
5. Develop the habit of capitalizing words at the beginning and placing a period at the end of a sentence
6. Develop the meaning of all words in the basic list so pupils will use the words correctly in their written expression

Third Grade. In the third grade good teaching should:

1. Further develop the desire to have all words used in written work spelled correctly
2. Present a method of study which enables the pupils to become familiar with methods of learning to spell new words
3. Further develop the ability to relate the sounds of words to their spelling
4. Develop the beginnings of the ability to locate words in an alphabetical list
5. Develop the beginnings of the ability to correct their own words
6. Develop an understanding of plurals and the method of forming most plurals by adding *s* to the singular
7. Perfect the correct writing of a sentence, with a capital at the beginning and a period at the end
8. Develop the ability to write all the letters and to write words and sentences so that they can be easily read
9. Develop the desire of pupils to keep a list of their own hard words
10. Develop the meaning of all of the words in the basic list so that pupils will use the words correctly in their written work

Fourth Grade. In the fourth grade good teaching should:

1. Further develop the desire to have all words used in written work spelled correctly
2. Present a method of study which enables the pupils to become familiar with methods of learning to spell new words
3. Further develop the ability to relate the sounds of words to their spelling
4. Develop the ability to locate words in an alphabetical list (using the Little Dictionary)
5. Develop the ability in pupils to correct their own words
6. Make pupils able to recognize the diacritical markings of long and short vowels
7. Develop the ability to recognize and build compound words and to derive the meanings of such words from their component parts
8. Develop an understanding of the purpose of guide words in a dictionary
9. Develop the ability to alphabetize words to the second letter

[141] From material on which was based a spelling series, *Spelling Today*, by J. Murray Lee, Virgil Stinebaugh, and Dorris May Lee (Charles Scribner's Sons, New York, 1945, 1948).

10. Stress the meanings of synonyms and antonyms (using the terms *same* and *opposite*)
11. Fix the habit of capitalizing the names of places
12. Develop the ability to use and spell certain contractions, such as *I'll, I'm, it's, haven't, won't,* and *can't*
13. Develop the ability to spell correctly certain irregular plurals and certain words doubling the last consonant
14. Develop the ability to form derivatives of words ending in *e*
15. Further develop the ability to make use of syllables in spelling long words
16. Develop the ability to write certain base words from the derived form
17. Develop the habit in pupils of keeping a list of their own hard words
18. Develop the meaning of all of the words in the basic list so that pupils will use the words correctly in their written work

Fifth Grade. In the fifth grade good teaching should:

1. Further develop the desire to have all words used in written work spelled correctly
2. Have made automatic for all pupils a method of studying new words
3. Further develop the ability to relate the sounds of words to their spelling
4. Develop the ability to use a dictionary to find meaning, syllabication, and accent of words
5. Further develop the ability to locate words in a dictionary
6. Begin to develop the ability to use the key to diacritical marks
7. Further develop the ability to write the derived form from the base word and the base word from the derived form
8. Place an increasing amount of responsibility on pupils for correcting their own words
9. Further develop the ability to build compound words
10. Develop the concept of homonyms and introduce the use of the term
11. Develop the ability to use the apostrophe to show possession
12. Further develop the ability to use and form certain contractions
13. Further develop the ability to form derivatives of words ending in *e*
14. Further develop the ability to make use of syllables in spelling long words
15. Develop the beginnings of the ability to form derivatives of words ending in *y*
16. Further develop the habit in pupils of keeping a list of their own hard words
17. Develop the meaning and use of certain suffixes
18. Develop the meaning of all of the words in the basic list so that pupils will use the words correctly in their written work
19. Select all cases of serious spelling disability and provide them with special work

Sixth Grade. In the sixth grade good teaching should:

1. Further develop the desire to have all words used in written work spelled correctly
2. Provide remedial work for all pupils who have not developed an effective method of studying new words
3. Further develop the ability to relate the sounds of words to their spelling
4. Develop the ability to use the dictionary in all written work
5. Develop the ability to use the key to diacritical marks
6. Have pupils assume the responsibility for correcting their own words
7. Develop the ability to form derivatives of words ending in *y*
8. Develop the ability to alphabetize words to the third letter

9. Further develop the ability to spell derived forms from base forms
10. Further develop the correct use of homonyms
11. Further develop the ability to use possessives
12. Further develop the ability to use and form certain contractions
13. Make the child conscious that certain words may have two pronunciations. Develop the ability to recognize two pronunciations of the same word according to use:
    EXAMPLE: *conduct* meaning *behavior,* and *conduct* meaning *to lead*
14. Develop the meaning of all of the words in the basic list so that pupils will use the words correctly in their written work
15. Select all cases of serious spelling disability and provide them with special work

XVI. DEVELOPING BETTER WRITTEN COMMUNICATION: HANDWRITING

Handwriting a tool. The machine age has had a definite effect upon instruction in handwriting. The change has resulted in a disappearance of perfect copy. The present emphasis is on handwriting as a tool. It is only too obvious that an increasing percentage of material is produced on the typewriter.

Time spent in attaining perfection in handwriting can be much better spent on other things. Illegibility has been shown to increase from elementary to high school to adulthood. Legible handwriting is still a necessity, and it is the responsibility of the elementary school to develop it.

There are two recent challenges to the present teaching of cursive writing in the schools. One is the use of the typewriter. Wood and Freeman [142] in an extensive experiment showed that pupils who used the typewriter did better work and suffered no loss to their penmanship. This experiment led companies to adapt the typewriter to much younger children by use of various devices on the keys. Owing to cost and inertia it will probably be many years before typewriters become common in elementary schools, but they are being introduced in many places with considerable success.

Manuscript writing. The other influence is the introduction of manuscript writing in the primary grades. In some parts of the country this movement has spread rapidly. Usually it is used in the first two or three grades and the change to cursive made at the beginning of the third or fourth. The experimental evidence has been summarized by both Cutright and Freeman.[143] In general, it may be concluded that manuscript is valuable for the primary grades, and there is practically no detrimental effect when cursive writing is begun.

[142] Ben D. Wood and Frank N. Freeman, *An Experimental Study of the Educational Influences of the Typewriter in the Elementary School Classroom* (New York, The Macmillan Company, 1932).

[143] Prudence Cutright, "Script-Printing and Beginning Reading and Spelling," *Elementary English Review,* Vol. 13, April, 1936, pp. 139-141, 160.

Frank N. Freeman, "An Evaluation of Manuscript Writing," *Elementary School Journal,* Vol. 36, February, 1936, pp. 446-455.

The values accredited to manuscript writing are: [144]

1. It is easy for children to learn because of the simple strokes.
2. Children can obtain satisfactory results early without drill on movement of form.
3. The letter forms are so simple that each child can see his difficulty and correct it.
4. The child learns one alphabet for both reading and writing.
5. This type of writing satisfies the child's keen desire to write. (One big desire of a child on entering school is to learn to write.)
6. Unnecessary curves, loops, flourishes, and long joining strokes are omitted; therefore, the results are more legible than in cursive writing. This elimination of extra strokes also speeds up writing.
7. The pen may be lifted when going to the next stroke. This apparently lessens fatigue and strain on a child's immature muscles.
8. Even a child with poor muscular control can produce readable results.
9. The use of these simple letter forms lessens the tendency toward children's "eyestrain" in reading and in writing. There are fewer movements of the eyes required when reading manuscript writing. In fact, it is as easy to read as typewritten material.
10. Manuscript writing facilitates children's work in beginning reading.
11. Children who have written manuscript for a number of years can equal the speed of those using cursive writing and in most cases exceed it.

Beginning writing by any system should arise from the desire of a child to write. Drill is certainly not advisable at this step. Children should learn to write in a natural situation. The following list of activities creates some need for writing ability: [145]

Write:
- Individual names
- Letters to sick friends
- Letter to other classes, invitations
- Explanations of pictures, titles
- Birthday cards, Christmas greetings, valentines
- Signs, objects in room or museum, lost and found articles
- Labels, recipes
- Advertisements, directions, notices
- News sheets, weather reports
- Stories, poems, or a play
- Address books, account books
- Spelling lists
- Art posters
- Library titles, book reviews
- Museum records, yearbook
- Lunch orders, supply orders, business letters

Surveys show that nearly 90% of the schools use manuscript writing in the beginning at least and 7% use no kind of handwriting in the first grade. Thus it has become almost universal to start children on manu-

[144] Edith U. Conard, *Trends in Manuscript Writing* (New York, Teachers College, Columbia University, 1936), p. 3.
[145] *Ibid.*, p. 11.

script writing. Two-thirds of the schools shift to cursive in grade three or above, while 17.6% use it through all grades.[146]

There is a growing movement to keep manuscript and not to change to cursive. Tradition seems to be the main reason for changing. Manuscript writing with the same amount of practice is as fast or faster and more legible, and eliminates the necessity of learning two systems of writing. If it is to be continued, it should always be referred to as writing and its style may become more casual.[147]

Cursive script. If the change is to be made to cursive script it should be done probably some time in the third grade. The time should differ for different pupils, depending on their muscular control. No sharp change should be made, and at least through this grade the child should be permitted to use whichever he prefers for doing large amounts of writing. Practice periods can involve special situations in which there might be an incentive to use the script. Legibility is the only defensible demand (aside from neatness, of course). It has been found that letter formation is the most important factor in legibility. Spacing, slant, alignment, and weight of line are all interrelated, and changing one changes the other. None of these factors is important except as it contributes to letter formation. Close spacing is better than wide. Slant is quite important in letter formation, alignment less so, and weight of line has little or no effect.[148]

Other problems. A unified program furnishes many more opportunities for writing as well as reading. The conscious need for legible handwriting can be developed in relation to those purposeful situations much more effectively than in a formal drill period.

The problem of handedness is always a question in regard to writing. Should one change a left-handed writer to a right-handed writer? In general the conclusion from available research might indicate that if it can be done early enough and without any noticeable difficulty that it does no harm. Many children have their left-handedness somewhat fixed by the time they reach school, and considerable care should be used with that type of person. Certainly forcing a change by unpleasant methods is to be condemned and may well be one of the major reasons why difficulties sometimes result.[149]

[146] Ada R. Polkinghorne, "Current Practices in Teaching Handwriting," *Elementary School Journal,* Vol. 47, December, 1946, pp. 218-224.

[147] Gertrude Hildreth, "Should Manuscript Writing Be Continued in the Upper Grades?", *Elementary School Journal,* Vol. 45, October, 1944, pp. 85-93.

[148] Leslie Quant, "Factors Affecting the Legibility of Handwriting," *Journal of Experimental Education,* Vol. 14, June, 1946, pp. 297-316.

[149] An interesting table of conflicting opinions is given by Paul L. Boynton, *Psychology of Child Development* (Minneapolis, Educational Publishers, 1938), pp. 144-145.

XVII. DIAGNOSIS IN LANGUAGE ARTS

Language difficulties interrelated. In this diagnosis of difficulties in the language arts, all have been grouped together, for their causes are in many cases so interrelated that a consideration by subject is valueless. The approach must be through an analysis of the child's total difficulties rather than only his reading difficulties.

Let us look at the case of Mary, who is in the fifth grade and doing poorly in her reading. Her written language work does not compare favorably with that of the other children; and when she stands before the class to speak, she makes a miserable failure. May these difficulties all be due to the same cause? It certainly is justifiable to think that they might. Mary might have a very meager vocabulary, for which her limited home background is responsible. Another difficulty might be that Mary is of low intelligence and does not have the maturity to do work comparable with that of other children. She might be in poor health or have some physical difficulty, or the home might be upset with a resultant disturbance so great as to affect her work. Thus, any number of things might be causing Mary's various difficulties. On the other hand she might be having specific difficulties in each phase of the work which was primarily responsible. It is impossible to tell until there is a careful study of Mary and her difficulties.

Diagnosis is too often made on the "snap-shot" basis rather than in relation to the continuous development of the child. Perhaps Mary was not a real problem, for she might have been showing marked improvement in the past two years. It would be the same as comparing Mary's picture with other fifth-grade girls to tell whether or not she was growing. The only way to see development is to take a picture of Mary each year and compare them with the ones of previous years.

The interrelations. Diagnosis in the language arts is difficult. There are so many factors and so many specific situations to consider. (There is strong evidence to indicate that many of the techniques used in determining difficulties are themselves in error.) A general overview of the problem is helpful in understanding the complex relationships involved. There are four areas in which language arts operate: speaking, writing, reading, and listening. Within each of these areas difficulties may be due either to certain basic factors, to mechanics, or to certain powers of expression (see Table X). Each of the first three factors that are presented in Table X has been further analyzed in Table XI. This picture gives some idea of the complex nature of the forces involved in the language process, and a general overview of the diagnostic problem.

Each item listed in Table X constitutes a main heading, and under it should be listed the specific items that may be causing difficulty. This detailed analysis is presented in Table XI. It is obvious after a careful study of Table XI that tests are available for relatively few items. It is

TABLE X

AN OVERVIEW OF THE DIAGNOSTIC PROBLEM IN THE LANGUAGE ARTS

I. *Basic Factors*	II. *Mechanics*	III. *Powers of Expression*
A. Physical	A. *Writing*	A. Clear orderly thinking
B. Intellectual	1. usage	B. Organization of ideas
C. Emotional	2. sentence structure	C. Effective expression
D. Environmental	3. spelling	D. Creative expression
E. Pedagogical	4. handwriting	
	B. *Speaking*	
	1. speech and voice	
	2. bodily expression	
	3. usage	
	4. group participation	
	C. *Reading* (oral)	
	1. mechanics	
	2. pronunciation	
	3. voice control	
	4. rate	
	D. *Reading* (silent)	
	1. comprehension	
	2. recall and use	
	3. rate	
	4. mechanics	

also apparent that a complete study of any one child would require an enormous amount of time. It is not expected that a teacher will make a complete diagnosis, but unless she has some idea of all of the factors that may be operative it is only too easy to have a wrong concept of the difficulty. Tables X and XI are presented to give this overview as an orientation. They are not necessarily complete, but do give an idea of the interrelations involved.

TABLE XI

A DETAILED ANALYSIS OF BASIC FACTORS, MECHANICS, AND POWERS OF EXPRESSION AS THEY RELATE TO DIAGNOSIS IN LANGUAGE ARTS *

I. *Basic Factors*

A. *Physical Factors*

1. Visual perception; speed and accuracy of visual recognition and discrimination of various materials
2. Vision; tests of acuity, eye dominance, muscular coördination
3. Auditory acuity, discrimination and analysis

* This table is largely the compilation of Bernard A. Anderson who was responsible for the speech section and Frank Vuchetich who was largely responsible for assembling the remainder of the material. Many sources have been drawn on freely, especially Marion Monroe and Bertie Backus, *Remedial Reading* (Boston, Houghton Mifflin Company, 1937); Arthur I. Gates, *Improvement of Reading* (New York, The Macmillan Company, 1935); Luella Cole, *The Improvement of Reading* (New York, Rinehart and Company, Inc., 1938); *Educational Diagnosis, op. cit.; The Teaching of Reading: Second Report, op. cit.,* and the 1937 Course of Study in Speech of the State of Washington.

4. Muscular coördination, handedness, relation of dominant eye and dominant hand, etc.
5. Debilitating factors; malnutrition, adenoids, infection of tonsils, teeth, etc.
6. Poor physical habits, such as sleep, dietary regulations
7. Physical immaturity

B. *Intellectual Factors*
1. Mental immaturity (low mental age)
2. Poor memory span
3. Poor associative learning
4. Peculiarities in modes of thought

C. *Emotional Factors*
1. Primary responses:
   a. General emotional immaturity
   b. Excessive timidity
   c. Predilection against reading
   d. Predilection against all school activities including reading
2. Secondary responses:
   a. Aggressive opposition
   b. Withdrawal of attention, or truancy
   c. Compensatory mechanisms
   d. Defeatism
   e. Hypertension
3. Associated or "conditioned" responses:
   a. Reading associated with punishment
   b. Reading associated with fear
   c. Reading associated with negative reactions

D. *Environmental Factors*
1. Pupil's home conditions: language spoken, attitude of parents toward school, dominance of parents
2. Lack of coöperation between home and school
3. Emotional insecurity at home
4. Economic insecurity at home
5. Frequent moves from one neighborhood to another
6. Illiteracy in the home, no reading background
7. Religious prejudices
8. Personal relationships with brother and sister

E. *Pedagogical (educational) Factors*
1. School conditions; educational progress, methods of teaching
2. Parent-child, parent-teacher, child-teacher relationships
3. Child's attitude toward school and reading
4. Inadequate school materials
5. Deficiencies in reading readiness
6. Poor teaching techniques:
   a. Poorly grouped reading classes
   b. Insufficient variety of reading material
   c. Failure to analyze individual needs
   d. Overstress of some one reading skill to the neglect of others
   e. Overstress of some one method while neglecting others
   f. Poor seating arrangements
7. Poor motivation and interest-arousing techniques:
   a. Teacher's lack of interest and enthusiasm
   b. Failure to relate reading to child's experiences and interests

Absorption

New developments, new opportunities

Working with words

The reading group

c. Motivation by threats, punishment, or shaming the child
d. Poor selection of reading material

8. Administrative factors:
   a. Overcrowded classes where the individual is lost
   b. Insufficient provision for testing and diagnosing
   c. Insufficient provision for teacher training
   d. No time-allotment on schedule for remedial reading instruction
   e. Highly routinized and standardized procedure which discourages teacher flexibility and initiative

A. *Writing* II. *Mechanics*

1. Usage
2. Sentence structure
3. Spelling
   a. Most difficult letters are *a, e, i, u*
   b. A large percentage of errors are phonetic
   c. Omissions commonly include the second of a double letter, final letters, silent letters, key consonants, and central syllables.
   d. Substitutions of vowels in second syllables
   e. Poor handwriting
4. Handwriting difficulties in
   a. Slant
   b. Alignment
   c. Quality of line
   d. Letter formation
   e. Spacing

B. *Speaking*

1. Speech and voice	(Good)	(Poor)
a. Enunciation	Clear and distinct	Muffled and slovenly
b. Rhythm	Even and coördinated with thought	Uneven and uncoördinated
c. Volume	Adjusted to situation, size of room and audience	Too loud or too soft for the situation
d. Voice quality	Uses good resonance and pleasing tone quality as result of well-adjusted mental and emotional attitudes and coördinated activity of the vocal organs	Impaired resonance; harsh, breathy, nasal, muffled, throaty, unpleasant tone quality
e. Modulation and Inflection	Ability to detect pitch changes	Pitch deafness
	Free from nervous tensions that affect pitch, has good emotional control	Shows nervous tensions that affect pitch, lacks emotional control
	Inflections reveal attitudes of mind	Inflections unrelated to thought
	Inflections are normal and natural	Inflections are unnatural and affected
	Reveal adequate vocal range	Voice is monotonous and shows little range

B. *Speaking*—Continued	(Good)	(Poor)
f. Pronunciation	Clear, but unaffected, and conforming reasonably to accepted standards	Indistinct, uncertain, and is affected and nonconforming
g. Breathing and breath control	Demonstrates adequate breath and breath control to communicate his ideas and attitudes in an effective manner (1) rhythmical (2) controlled (3) sufficient (4) diaphragmatic	Jerky and unrhythmical, uncontrolled and insufficient for adequate communication of ideas and attitudes Breathes too much with the upper chest
h. Audience consideration	Realizes they must be made to understand by means of adequate volume, careful articulation, correct phrasing and emphasis	Inconsiderate of audience, looks out window, speaks too lowly, cannot convey meaning

2. Use of the body as a means of expression and communication

	(Good)	(Poor)
a. Posture	Erect, balanced, hands used as means of expression	Slouchy, overly conscious of hands, fidgets
b. Poise	At ease, reposed and balanced, free from self-consciousness	Self-conscious, ill at ease
c. Gesture	Grows out of interpretation	Superficial and affected
d. Attitude	Expressive and alert attitude as a result of neuromuscular coördination	Inexpressive and phlegmatic, shows lack of conviction

3. Usage

a. Vocabulary	Vocabulary sufficient to express ideas commensurate with mental and chronological ages	Vocabulary is inadequate for expression of ideas
b. Grammar	Uses correct grammar and idiom	Grammar poor, idiom provincial and unrefined
c. Oral style	Uses effective oral style Effective organization Conversational quality	Presentation ineffective, lacks organization, rambling, oratorical and affected
d. Organization	Demonstrates ability to find and select material on a given subject Can outline briefly and effectively	Does not know where to look for material, wastes time. Says, "I just couldn't find a thing about that subject"

B. *Speaking*—Continued	(Good)	(Poor)
4. Group participation		
a. Coöperation	Demonstrates ability and willingness to coöperate	Uncoöperative, misbehaves, discourteous, inattentive
	Courteous and attentive	
b. Group discussion	Knows when to contribute tactfully to the discussion	Speaks out of turn, has nothing to contribute or is too bashful
	(1) Speaks when he has a worthwhile contribution	
	(2) Speaks when asked a question	
	(3) Speaks when he has a report to make	
	(4) Speaks when he can clear up a point	
	(5) Speaks when he can correct an error	
	(6) Speaks when he can ask an intelligent question	
	Speaks briefly and to the point, does not monopolize the time, accepts criticism with dignity	Rambles, is indefinite in statement, cannot take criticism, takes more than his share of the time
	Addresses chair	
	Can lead the discussion	Speaks without permission
	(1) Can ask stimulating questions	
	(2) Can hold down monopolizing speakers	
	(3) Can soften combativeness	
	(4) Can keep discussion on the question	

C. *Reading (oral)*:

1. Mechanics
   - *a.* Vowel and consonant errors
   - *b.* Additions and omissions of sounds
   - *c.* Reversals
   - *d.* Repetitions
   - *e.* Substitutions
   - *f.* Additions and omissions of words
   - *g.* Evidences of strain, embarrassment, or insecurity

C. *Reading (oral)*:—Continued
   2. Pronunciation
      a. Habitual errors in pronunciation
      b. Habitual omission of words
      c. Volume too low
      d. Making up nonsense to keep going and avoid errors
      e. Reading word-for-word rather than by thought units
   3. Voice control
      a. Volume too high or too low
      b. Monotonous tone
      c. Slurred and otherwise faulty enunciation
      d. Strained high-pitched voice
   4. Rate
      a. Hurried strained reading
      b. Slow labored reading
      c. Ignoring of punctuation marks resulting in poor rate and loss of expression and thought

D. *Reading (silent)*:
   1. Comprehension
      a. Level of sentence-comprehension
      b. Level of paragraph-comprehension
      c. Appraisal of longer selections
      d. Comprehension of stated facts
      e. Comprehension of implied facts
      f. Comprehension of main thoughts
      g. Comprehension of word meaning
      h. Comprehension of directions
      i. Comprehension of skimming
      j. Finding arguments for or against a given conclusion
      k. Supplying titles
      l. Drawing inferences
      m. Finding the answer to a question or questions
      n. Outlining and summarizing
      o. Reading simple diagrams
   2. Recall and use
      a. General accuracy of recall of facts and the amount of recall
      b. Unaided recall full, medium, scanty
      c. Response well organized, or poorly organized
      d. Response free and full or labored and slow
      e. Response accurate or inaccurate
      f. Response liberal or imaginative
      g. Response contains few or many new words and expressions
      h. Responses to specific questions good, medium, or poor
      i. Recall after interval good or poor; literal or imaginative
      j. Shows great, medium, or little zest in reading or recall
      k. Ability to outline and summarize
      l. Ability to associate ideas with other information
      m. Ability to organize for special purposes
   3. Rate
      a. Tests of rate of reading with specified accuracy of comprehension composed of varied materials, or of each of several types of reading, such as reading for the main idea, to note significant details, to execute precise directions, etc.

4. Mechanics (some of these are applicable to oral reading as well)
   a. Type of head movements
   b. Posture
   c. Position of books, hands, head
   d. Use of finger or pointer
   e. Lip movements, inner speech
   f. Squinting, moving near or away from book, frowning, rubbing eyes
   g. Signs of tension, such as gritting teeth, wrinkling brows, clenching fists, squirming, jerking
   h. Signs of low interest, such as stopping, gazing about, fumbling with book
   i. Signs of zestful, eager interest
   j. Proper interpretation
   k. Proper phrasing
   l. Proper inflection

III. *Power of Expression*

A. *Clear, Orderly Thinking*
   1. Ability to sense chronological sequence of happenings.
   2. Ability to see the relationship of cause and effect in personal experience and in material read.
   3. Ability to arrive at trustworthy independent judgments on the basis of fact and experience.

B. *Organization of Ideas*
   1. To assist pupils to gather from experience and from reading, elements bearing upon their immediate purposes in speech or writing.
      a. Ability to stick to subject.
      b. Ability to select material of interest to reader or listener.
      c. Ability to discriminate between important and unimportant material for the purpose on hand.
   2. To help pupils to organize materials effectively for presentation to others:
      a. Ability to marshal evidences or facts concerning the problem under observation:
         1. From observation and experience
         2. From letters or interviews
         3. From books, pamphlets, and magazines
      b. Ability to sense relationships between ideas
      c. Ability to outline ideas in logical sequence, showing proper relationship of major and minor aspects through use of the recognized outline form.
      d. Ability to begin and end effectively.
      e. Ability to present a report of reading or experience keeping the foregoing principles in mind.
   3. To give pupils an increasingly adequate vocabulary:
      a. Ability to use effectively the general speaking and writing vocabulary of ordinary social and business communication.
      b. An interest in words and power of discrimination in the choice of words for specific purposes.
      c. The desire and power to add to this general vocabulary.
   4. To give pupils adequate mastery of the mechanics of written expression:
      a. An adequate sentence sense.
      b. Ability to write well-unified and coherent sentences.
      c. Adequate skill in the development of ideas in well-rounded paragraphs.
      d. Mastery of commonly accepted forms of correct grammatical usage.

e. Mastery of commonly accepted forms or requirements of punctuation, capitalization, and manuscript form.
f. Ability in, and a sense of responsibility for, legible handwriting.
g. Ability in, and a sense of responsibility for, good spelling

C. *Effective Expression*
1. Sense of purpose and plan in speaking
2. Effective presentation of ideas
3. Audience contact
4. Agreeable, effective use of the voice
5. Careful pronunciation, enunciation, and articulation

D. *Creative Expression*
1. To arouse pupils to a sense of the value of originality and creative expression in the everyday intercourse of the social and business world
2. To give pupils opportunity to try their powers in voluntary creative activities, such as story-telling, dramatization, informal prose, and the writing of verse

Techniques of diagnosis. Techniques which teachers can use in analysis are standardized tests, informal tests, observational methods, analysis of both written and oral errors, records of activities, ratings, commercial materials of various sorts, and questionnaires to pupils. Detailed discussions of these techniques are available in a sufficient number of sources [150] to make repetition unnecessary.

A technique which is not so commonly practised is the collection of a pupil's work over a period of time. Samples of writing, descriptions of activities, and other material which would be significant to show the development of the child could be placed in the child's folder.

Probable fallacies in diagnosis. There is strong evidence to indicate that many of the techniques used in determining difficulties are themselves in error. One of the commonest fallacies is the assumption that the test situation is comparable to the situation in real life. Numerous studies have shown that spelling errors made on spelling tests are not the same type made in written work, that errors made in language correction tests are not the same made in writing or speaking.[151]

A second fallacy is that one sample is representative of the ability sampled. Every teacher can reproduce from her own experience a case similar to Jimmy. He never could stand before the class and talk until one day they started to do something in which he was vitally interested. He had no difficulty expressing himself then. There is no substitute for real vital expressional situations to determine what a child's potentialities are.

[150] In the bibliography see the following references: *Educational Diagnosis, The Teaching of Reading: A Second Report,* Betts, Gates, and references at end of Chapter 15.

[151] For summaries of such data see: *Thirty-Fourth Yearbook* of the National Society for the Study of Education, Ch. XIII. Matthew H. Willing, *Valid Diagnosis in Written Composition,* Contributions to Education, No. 230 (New York, Teachers College, Columbia University, 1926).

Evidence on another phase of the same point is of the type revealed in data presented by Dora V. Smith. In a test to college freshmen, three examples of the possessive plural were included in a fifty-item test. Following are the sentences, percentage of correct responses and the rank in fifty items.[152]

Sentence	*Per Cent Correct*	*Rank in 50 Items*
I have always been interested in boys' clubs.	93	4th
Last year the Girls' Glee Club of Vassar College sang there.	77	25th
The boys' secretary at the Y. M. C. A was a famous college athlete.	57	47th

Had each item been used in a different test and only one such item included, one researcher would have concluded that possessive plurals are not a source of difficulty, one that they are a great source of difficulty, and one that they represent about average difficulty. The fact that various studies of pupils' errors yield different results may be attributed to this same difficulty.

A third fallacy is the interpretation of a symptom as a cause and the treating of the symptom. A common example is the remedial treatment given a pupil who shows poor mechanics of reading. More drill on mechanics may not improve his reading for he may have poor eyesight. In many reports of remedial work there are some pupils who show no gain. Certainly these cases should be investigated further.

Suggestions for remedial work. Some general principles for remedial work are as follows: [153]

1. Since sound plays so large a rôle in errors in usage, *oral* drill should constantly supplement the written exercise.
2. The more methods of attack the teacher can use, the better are the results.
3. The more initiative the pupils take in overcoming their own errors and in the planning of their own remedial programs, the quicker the elimination of the error.
4. Drill upon specific points of error is the greatest single factor in producing results.
5. Motivation of the problem through the charting of errors, urging improvement, and keeping progress scores may reduce the drill by one-half.
6. Mere repetition of the correct forms, unaccompanied by consciousness of the wrong form to be avoided, has proved ineffective when compared with methods placing right and wrong in juxtaposition.
7. Individualized drill on errors made is notably more effective than class drill.

[152] *Thirty-Fourth Yearbook* of the National Society for the Study of Education, p. 256.

[153] Adapted from a list by Dora V. Smith in the *Thirty-Fourth Yearbook* of the National Society for the Study of Education, p. 257. Quoted by permission of the Society.

Research and experience have yielded a number of suggestions for remedial work. Some of the best suggestions can be found in the references given at the end of the chapter, by Betts, Cole, Dolch, Gates, McCullough, Strang, and Traxler, Monroe, and the *Thirty-Fourth, Thirty-Sixth* and *Forty-Third Yearbooks* of the National Society for the Study of Education.

Suggested Learning Experiences

1. To be of value, the purposes of language experience must be translated into classroom experiences for each child. Each of the purposes (listed on page 352) may be used by a student or a committee to outline briefly one day's activities which are implications of that particular purpose. These should be reported to and synthesized by the whole class.

2. Make specific suggestions for overcoming each of the language difficulties listed on page 354. Be certain that the basic causes are taken into account. These could well be individual reports.

3. In light of Pooley's discussion, accumulate a list of expressions of standard informal speech which you hear in your class discussions, remembering that these are thoroughly accepted speech forms.

4. In observing a classroom of children, note instances where the teacher was developing good thinking on the part of the children. Also note instances where she missed opportunities for doing this. If it is not possible to observe a class of children for this purpose, use your own class.

5. Name one specific change in practice from the traditional formal program which would be made if each of the Basic Guiding Principles on page 368 were accepted.

6. Individual or group reports may be given on each of the recent developments in reading, giving particularly specific illustrations of implications for classroom practice.

7. Observe a reading class. Is the instruction basically developmental, is remedial instruction being depended on, or is the whole problem being ignored? List the developmental practices being followed out and those which you would suggest be used.

8. Compare two or more sets of readers, language texts, or spellers. What should you look for in making such a comparison?

9. Rework the language experiences of the unit of work which you previously prepared in light of what you have learned in this chapter.

10. If recent courses of study are available, they should be analyzed to determine the ways in which they reflect newer developments.

11. There should be a certain amount of familiarity with the professional books dealing with the various language arts. It is suggested that one meeting might be devoted to each person in the group reviewing a different volume. These reviews should point out the unique material contained in the book.

Selected References

A. *General References*

Language (Including Speech, Spelling, and Writing)

Backus, Ollie, *Speech in Education: A Guide for the Classroom Teacher* (New York, Longmans, Green & Company, 1943), 358 pp. Discusses what the teacher can do about speech rehabilitation, applying speech more effectively in various situations, and speech improvement.

Barnes, Walter, "Language as Social Behavior," *Educational Method,* Vol. 16, March, 1937, pp. 275-288. A detailed discussion of the concept of language as social behavior.

BETTS, Emmett A., and BETTS, Thelma M., *An Index to Professional Literature on Reading and Related Topics* (New York, American Book Company, 1945), 137 pp. References are listed alphabetically with classified topical index.

BOWDEN, Florence B., "Conversation and Discussion in the Elementary School," *Elementary English*, Vol. 14, May, 1947, pp. 293-302. Analyzes problems in conversation, planning and discussion within the setting of the elementary school. Presents standards set up by the children.

BRYNGELSON, Bryng, "The Function of the Specialist Teacher of Speech," *Elementary English Review*, Vol. 23, February, 1946, pp. 89-90. Makes a forceful plea for the appointment of speech specialists to educate teachers and to work with speech deviates.

CALLAHAN, Jennie Waugh, *Radio Workshop for Children* (New York, McGraw-Hill Book Company, 1948), 398 pp. "The first book in the field of radio broadcasting to set forth the step-by-step process of auditioning children for the school workshop, of planning and writing script on all school subjects, and of rehearsing and airing the programs."

CARMICHAEL, Leonard, ed., *Manual of Child Psychology* (New York, John Wiley & Sons, Inc., 1946), Chapter X. This chapter considers the Language Development in Children. A comprehensive treatment.

Child Development and the Curriculum, Thirty-Eighth Yearbook of the National Society for the Study of Education (Bloomington, Ill., Public School Publishing Co., 1939). Chapters IX to XIII deal with various phases of the language arts.

DAWSON, Mildred Agnes, *Language Teaching in Grades 1-2* (Yonkers, New York, World Book Company, 1949), 100 pp.

Department of Elementary School Principals, *Language Arts in the Elementary School, Twentieth Yearbook* (Washington, D. C., National Education Association, 1941). Covers oral and written language, reading, handwriting, spelling, and activities involving a variety of language arts.

———, *Radio and the Classroom* (Washington, D. C., National Education Association, 1940-1941), 97 pp. Contains a number of articles which deal with the development of communication by means of school use of radio.

———, *The Rôle of Speech in the Elementary School: Vitalizing the Elementary School Curriculum Through Speech* (Washington, D. C., National Education Association, 1946-1947), 112 pp. Considers both basic speech problems and activities which motivate better speech.

Department of Supervisors and Directors of Instruction, *The Development of a Modern Program in English, Ninth Yearbook* (Washington, D. C., National Education Association, 1936). Excellent for an overview of the field.

FALK, Ethel Mabie, "Adjustment through English Expression," *English Journal*, Vol. 26, May, 1937, pp. 381-388. Characterizes eight personality types having significance for language development.

GATES, Arthur I., and RUSSELL, David H., *Diagnostic and Remedial Spelling Manual—A Handbook for Teachers* (New York, Bureau of Publications, Teachers College, Columbia University, 1937). Helpful in determining kinds of spelling difficulties.

GRAY, William S., ed., *Reading in Relation to Experience and Language*, Proceedings of the Conference on Reading, Vol. 6, (Chicago, Illinois, University of Chicago Press, 1944), 226 pp. Chapters III, IV, and V deal especially with various phases of a language arts program and their relation to reading.

GRIFFITHS, Nellie L., *Manuscript Writing* (Chicago, Hall and McCreary Company, 1937). A manual for the primary grades.

GULLAN, Marjorie, and GURREY, Percival, *Poetry Speaking for Children* (Boston, Expression Company, 1932). Beginning with the earliest jingles, this book describes methods and devices to stimulate the love of poetry in children, and shows how speech can be improved at the same time. The spirit of the game pervades throughout to insure interest.

HUFFARD, Grace T., and CARLISLE, Laura Mae, *My Poetry Book* (Philadelphia, The John C. Winston Company, 1934). A book that offers to boys and girls rich fun in making friends with poetry when they are young. Through the poems in this book, speech can be improved and polished with enjoyment.

JENKINS, Frances, *Language Development in Elementary Grades* (New York, Thomas Nelson & Sons, 1936). A well-rounded treatment of the language problem, of special value to teachers.

JOHNSON, Wendell, and others, *Speech Handicapped School Children* (New York, Harper and Brothers, 1948), 464 pp. Discusses kinds of speech defects found among school children, what the teacher can do about them on her own or with the help of a speech correctionist, and what she should avoid doing to, for, or about such children.

KAULFERS, W., and ROBERTS, Holland D., *Cultural Basis for the Language Arts* (Palo Alto, Stanford University Press, 1937). Reprints of a number of excellent articles in the field of language arts.

KENYON, John S., and KNOTT, Thomas A., *A Pronouncing Dictionary of American English* (New York, G. and C. Merriam Company, 1944), 484 pp. A necessity for every student of articulation and phonetics.

KNOWER, Franklin H., "Communication, Listening, Radio, Speech, and Related Areas," *Review of Educational Research,* Vol. 16, April, 1946, pp. 116-132. Summarizes research and points out the new concern over listening in the communication process.

LANE, Robert Hill, *The Teacher in the Modern Elementary School* (Boston, Houghton Mifflin Company, 1941), Chapters VII and VIII. These chapters discuss the language arts as to form and substance, and reading and literature.

LEONARD, J. Paul, "Language in the Virginia Curriculum," *English Journal,* Vol. 26, October, 1937, pp. 618-625. A valuable presentation of the basis for selecting the language activities in the Virginia curriculum.

LEVENSON, William, *Teaching Through Radio* (New York, Rinehart & Company, Inc., 1945), 474 pp. Written to encourage more effective use of educational radio programs and to help in improving school broadcasting. Presents much information and many suggestions useful in planning and putting on radio programs for children.

MCKEE, Paul, *Language in the Elementary School,* 2nd ed. (Boston, Houghton Mifflin Company, 1939). Discusses the program in spelling, composition, and writing.

MULGRAVE, Dorothy I., *Speech for the Classroom Teacher,* rev. ed. (New York, Prentice-Hall, Inc., 1946), 423 pp. Useful to the teacher, both to help her to more effective speech as well as in helping her pupils. Radio in education, public speaking, and simplified phonetics included in this edition.

National Council of Teachers of English, *An Experience Curriculum in English* (New York, Appleton-Century-Crofts, Inc., 1935). Unusually valuable for language activities and objectives.

———, *A Correlated Curriculum* (New York, Appleton-Century-Crofts, Inc., 1936). Valuable descriptions of actual units correlating English with other fields.

National Society for the Study of Education, *Teaching Language in the Elementary School, Forty-Third Yearbook,* Part II (Chicago, Illinois, University of Chicago Press, 1944), 257 pp. Contains basic discussions in all fields of the language arts.

NOVOKOVSKY, Gertrude, "Radio and Language Arts," *Elementary English,* Vol. 25, February, 1948, pp. 103-108. Correlation of radio work and language arts in developing vocabulary, handwriting, creative language, correct usage, oral expression and voice.

POOLEY, Robert C., "The Levels of Language," *Educational Method,* Vol. 16, March, 1937, pp. 289-298. A detailed discussion of the "level" concept of language.

RAGLAND, Fannie J., ed., *Children Learn to Write,* Pamphlet Publication Number 7 (Chicago, Illinois, National Council of Teachers of English, 1944), 78 pp. Discusses the expression of ideas and the acquisition of the necessary tools.

RASMUSSEN, Carrie, "Practical Ways of Developing Better Speech in Elementary School," *Quarterly Journal of Speech,* Vol. 19, October, 1938, pp. 485-488. Excellent suggestions which teachers can use.

———, *Speech Methods in the Elementary School* (New York, The Ronald Press Company, 1949). Considers the broad problem of more pleasing and more effective speech for all through a wide variety of school experiences. Also a chapter on helping the child with a speech defect.

RAUBICHECK, L., *How to Teach Good Speech in the Elementary School* (New York, Noble & Noble, Inc., 1937). Suggestions and unit lessons are given grade by grade for the teaching of speech in the elementary school.

ROBBINS, Samuel D., and SEYMOUR, Rose, *Correction of Speech Defects of Early Childhood* (Boston, Expression Company, 1937). Here is an answer to the teacher who has sought in vain for an authoritative manual of speech correction instruction for little children. In clear concise statements the authors present the defects of speech and give excellent exercises and advice for their correction.

SIMON, Clarence T., "Speech Correction," *Elementary English Review*, Vol. 22, March, 1945, pp. 94-99. Outlined speech correction programs for public schools.

SMITH, Dora V., "Diagnosis of Difficulties in English," *Educational Diagnosis, Thirty-Fourth Yearbook* (Bloomington, Illinois, National Society for the Study of Education, 1935), pp. 229-267. One of the most adequate discussions of diagnosis.

———, "Language Processes of the Democratic Way of Life," *Minnesota Journal of Education*, Vol. 28, April, 1948, pp. 370-372. Urges the teaching of group planning and discussion, and other language processes important in a democracy.

STERNER, Alice, SAUNDERS, Katherine M., and KAPLAN, Milton A., *Skill in Listening*, Pamphlet on Communication, National Council of Teachers of English (Chicago, the Council, 1944), 48 pp. Analyzes problems and suggests needs for further study.

STINCHFIELD, Sara M., *Children with Delayed or Defective Speech* (Palo Alto, Calif., Stanford University Press, 1939). Presents possible causes for delayed speech with corrective methods.

THORPE, Louis P., *Child Psychology and Development* (New York, The Ronald Press Company, 1946), pp. 469-559. Discusses language, its origin and development, and how the child's understanding develops.

TOLLERIS, Beatrice K., *Radio: How, When, and Why to Use It* (130 East 22nd Street, New York, National Publishers Council, 1946), 47 pp. A good analysis of major types of programs. Special consideration of types of programs which can be well put on by non-professional groups.

VOORHIS, Thelma G., *The Relative Merits of Cursive and Manuscript Writing* (New York, Teachers College, Columbia University, 1931). Presents summary of research and opinion with by far the greater balance for manuscript writing.

WOELFEL, Norman and TYLER, I. Keith, *Radio and the School: A Guide Book for Teachers and Administrators* (New York, World Book Company, 1945), 358 pp. Helpful to schools which have the opportunity to put programs on over a radio station. Discusses various ways and means, analyzes strengths and weaknesses of various types of shows and the difficulties of each type. Deals with policies and principles of working with stations. Also evaluates network programs and recordings, and the use the schools are making of them.

Reading

ADAMS, Fay, *Educating America's Children* (New York, Ronald Press Company, 1946), Chapters IX and X. These discuss reading and thinking as enriching experience, and talking and writing as learning to communicate and coöperate.

———, GRAY, Lillian, and REESE, Dora, *Teaching Children To Read* (New York, Ronald Press Company, 1949), 525 pp. Discusses the many phases of reading for children from the beginning of school through high school.

ARBUTHNOT, May Hill, *Children and Books* (Chicago, Ill., Scott, Foresman and Company, 1947), 626 pp. A discussion of all types of books which children enjoy, with reviews and excerpts. Thoroughly enjoyable.

BAKER, Harry J., and LELAND, Bernice, *In Behalf of Non-Readers* (Bloomington, Ill., Public School Publishing Co., 1934). An analysis of educational disability in reading.

BETTS, Emmett Albert, *Foundations of Reading Instruction with Emphasis on Differentiated Guidance* (New York, American Book Company, 1946). A most comprehensive discussion of how to develop reading ability from a readiness and differentiated learning point of view.

———, *Prevention and Correction of Reading Difficulties* (Evanston, Ill., Row, Peterson Co., 1936). One of the best summaries of suggestions for diagnosis and remedial work in reading; special emphasis is placed on visual difficulties.

BETZNER, Jean, and MOORE, Annie E., *Everychild and Books* (New York, Bobbs-Merrill Company, 1940), 174 pp. Written to help teachers develop in childhood a genuine enjoyment of books and of a finer taste in their selection.

BOND, Guy L., and BOND, Eva, *Teaching the Child to Read* (New York, The Macmillan Company, 1943), 356 pp. Every important phase from informal preparatory or background activities to testing achievement and diagnosing unusual cases is included.

BREWTON, John E., and Sara W., compilers, *Index to Children's Poetry* (New York, H. W. Wilson Company, 1942), 966 pp. Analyzes 130 collections of children's poetry by subject, author, title, and first line, with valuable annotations and with a bibliography.

BROOM, M. E., and others, *Effective Reading Instruction in the Elementary School* (New York, McGraw-Hill Book Company, 1942), 482 pp. Discusses development of various types of reading and phases of the reading program from grades one through eight.

CARMODY, Harriett, *The Adjustment of Reading Materials to Individual Achievement Levels and Learning Rates* (Pullman, Washington, School of Education, State College of Washington, 1948), 33 pp. Very specific help for the classroom teacher.

Claremont College Reading Conference (Annual) (Claremont, California, Claremont College Curriculum Laboratory). The 1949 proceedings is the *Fourteenth Yearbook*. The yearbooks give very worthwhile reports on a wide variety of reading problems, some specific, many very broad.

COLE, Luella, *The Improvement of Reading—With Special Reference to Remedial Instruction* (New York, Rinehart & Company, Inc., 1938). A helpful book for teachers. The discussion of vocabulary is especially good.

Department of Elementary School Principals, *Language Arts in the Elementary School, Twentieth Yearbook* (Washington, D. C., National Education Association, 1941), Chapter IV. A series of articles on reading.

———, *Newer Practices in Reading in the Elementary School, Seventeenth Yearbook* (Washington, D. C., National Education Association, 1938). An unusually valuable treatment of various phases of the reading problem.

DOLCH, Edward William, *A Manual for Remedial Reading*, 2nd ed. (Champaign, Ill., The Garrard Press, 1945), 460 pp. Discusses diagnosis, and specific plans for remedial work for all levels and for all types of reading.

———, *Problems in Reading* (Champaign, Ill., The Garrard Press, 1948), 374 pp. Discusses a large number of important aspects of materials, methods, the program as a whole, and its relation to the total educational program.

———, *Teaching Primary Reading* (Champaign, Ill., The Garrard Press, 1941), 307 pp. Written to help children find success in reading from the very start and to help them continue that success.

DURRELL, Donald D., *Improvement of Basic Reading Abilities* (Yonkers-On-Hudson, New York, World Book Company, 1940), 407 pp. Soon to be revised, but still contains some helpful suggestions, especially on oral reading.

EATON, Anne T., *Reading with Children* (New York, Viking Press, Inc., 1940), 354 pp. "You'll find that reading's very nice," especially for children, after adventuring in this volume.

———, *Treasure for the Taking* (New York, Viking Press, Inc., 1945), 218 pp. A delightful review and discussion of books which children enjoy, recommended for various purposes and for various age levels.

FARGO, Lucile Foster, *Library in the School*, 4th ed. (Chicago, Ill., American Library Association, 1947), 405 pp. Basic help for school librarians.

FENNER, Phyllis R., *The Library in the Elementary School*, Prepared for the Service Center of the American Education Fellowship (New York, Hinds, Hayden & Eldredge, 1945), 34 pp. Describes the organization and functions of the library in the elementary school.

FERNALD, Grace M., *Remedial Techniques in Basic School Subjects* (New York, McGraw-Hill Book Company, Inc., 1943). Explains some successful methods of working with children needing remedial help.

GANS, Roma, *Guiding Children's Reading Through Experiences* (Practical suggestions for teaching, No. 3) (New York, Teachers College, Bureau of Publications, Columbia University, 1941), 86 pp. An excellent point of view and many specific suggestions and examples.

GATES, Arthur I., *The Improvement of Reading: A Program of Diagnostic and Remedial Methods, Third Edition* (New York, The Macmillan Company, 1947), 657 pp. A most complete and basic discussion of this area.

———, *Interest and Ability in Reading* (New York, The Macmillan Company, 1930). Presents the results of a number of experimental studies relating to interest and ability in reading.

———, *A Reading Vocabulary for the Primary Grades,* rev. ed. (New York, Bureau of Publications, Teachers College, Columbia University, 1935). A recognized vocabulary list for primary grades.

GRAY, William S., *On Their Own in Reading* (Chicago, Scott, Foresman and Company, 1948), 268 pp. The subtitle, "How to give children independence in attacking new words," gives the point of view. A very readable, clear, common sense discussion of all the useful ways of attacking new words. Rich in illustration and example with a multitude of practical suggestions.

———, ed., *Adjusting Reading Programs to Individuals,* Proceedings of the Conference on Reading, Vol. 3 (Chicago, Ill., University of Chicago, 1941), 344 pp. Defines conditions and issues faced in further efforts to improve reading programs and the efficiency of readers.

———, *The Appraisal of Current Practices in Reading,* Proceedings of the Annual Conference on Reading, Vol. 7 (Chicago, Ill., University of Chicago Press, 1945), 253 pp. An attempt to stimulate critical analysis of current trends, evaluate methods and results of recent experiments, and stimulate further study of reading problems at all levels.

———, *Basic Instruction in Reading in Elementary and High Schools,* Proceedings of the Annual Conference on Reading, Vol. 10 (Chicago, Ill., University of Chicago Press, 1948), 237 pp.

———, *Coöperative Effort in Schools to Improve Reading,* Proceedings of the Annual Conference on Reading, Vol. 4 (Chicago, Ill., University of Chicago, 1942), 338 pp. Reading is everybody's "job" in the school. Discussion of coöperative procedures which have worked.

———, *Improving Reading in Content Fields,* Proceedings of the Annual Conference on Reading, Vol. 8 (Chicago, Ill., University of Chicago Press, 1947), 240 pp. Contains articles on various factors involved in reading in content fields and suggestions for improvement.

———, *Promoting Personal and Social Development through Reading,* Proceedings of the Annual Conference on Reading, Vol. 9 (Chicago, Ill., University of Chicago Press, 1947), 236 pp.

———, *Reading in Relation to Experience and Language,* Proceedings of the Conference on Reading, Vol. 6 (Chicago, Ill., University of Chicago Press, 1944), 226 pp. Identifies aspects of experience that are useful in developing reading and other forms of communication.

HARRIS, A. J., *How to Increase Reading Ability: A guide to Individualized and Remedial Methods,* 2nd ed., revised (Longmans, Green and Company, 1947), 582 pp. Practical suggestions on diagnostic and remedial techniques.

HARRISON, M. Lucile, *Reading Readiness,* rev. ed. (Boston, Houghton Mifflin Company, 1939). A good general reference.

HILDRETH, Gertrude, *Learning the Three R's,* 2nd ed. (Minneapolis, Minn., Educational Publishers, Inc., 1947). Has several chapters in which important reading problems are discussed.

HUBER, Miriam Blanton, *Story and Verse for Children* (New York, The Macmillan Company, 1940), 857 pp. Especially valuable for teachers who want a background in children's literature, for it contains a great deal.

KIRK, Samuel A., *Teaching Reading to Slow-Learning Children* (Boston, Houghton Mifflin Company, 1940), 225 pp. Practical help and suggestions for working with slow-learning children in the primary grades.

LAMOREAUX, Lillian A., and LEE, Dorris May, *Learning to Read Through Experience* (New York, Appleton-Century-Crofts, Inc., 1943), 204 pp. A discussion of diagnosing reading readiness and the use of experience in developing it; the development and use of experience charts. A more comprehensive point of view of one of the authors on the beginning reading program.

Literature for Human Understanding (Washington, D. C., American Council on Education, 1948), 61 pp. How to use literature to bring insight to common problems of life. Accounts of classroom teaching procedures from first grade through twelfth.

McCULLOUGH, C. M., STRANG, Ruth, and TRAXLER, Arthur, *Problems in the Improvement of Reading* (McGraw-Hill Book Company, 1945), 406 pp. Practical approach to different kinds of reading problems and good organization make this useful to teachers.

McKEE, Paul G., *Teaching of Reading in the Elementary School* (Boston, Houghton Mifflin Company, 1948), 622 pp. Sees reading as identifying and recognizing printed words, arriving at an adequate understanding of the meaning intended by the writer, and making use of meanings gained through reading. Develops a comprehensive suggested program of instruction.

MONROE, Marion, *Children Who Cannot Read* (Chicago, University of Chicago Press, 1932). Contains many suggestions for diagnosis.

———, and BACKUS, Bertie, *Remedial Reading* (Boston, Houghton Mifflin Company, 1937). Discusses general principles underlying diagnosis of reading disabilities and remedial instruction.

National Society for the Study of Education, *Reading in the Elementary School, Forty-Eighth Yearbook,* Part II (Chicago, University of Chicago Press, 1949), 343 pp. A general overview with emphasis on practical principles and policies, a frank discussion of controversial issues and emphasis on developing an all-around picture of the function of reading in all areas of the curriculum and in out-of-school life.

———, *The Teaching of Reading—A Second Report, Thirty-Sixth Yearbook* (Bloomington, Ill., Public School Publishing Co., 1937). Outlines a comprehensive reading program extending from kindergarten to the university.

RAMSEY, Eloise, ed., *Reading for Fun for Boys and Girls in the Elementary Schools,* Prepared for the National Council of Teachers of English (Washington, D. C., 1937), 104 pp. Books are classified under many topics and briefly annotated. They are listed roughly in order of difficulty within each topic.

RUE, Eloise, compiler, *Subject Index to Books for Primary Grades,* 1943, 236 pp.

———, *Subject Index to Books for Intermediate Grades,* 1940, 495 pp.

———, *Subject Index to Books for Intermediate Grades;* first supplement, 1943, 197 pp. (Chicago, Ill., American Library Association). Useful for teachers as they are organized by topics.

RUSSELL, David H., *Children Learn to Read* (Boston, Ginn and Company, 1949). Emphasizes the developmental phases of the reading program and presents various important backgrounds for the whole reading program.

———, "Identification Through Literature," *Childhood Education,* vol. 25, May, 1949, pp. 397-401. Points up the possibilities and responsibilities of the school for using literature for the personal development of children.

SMITH, Nila Blanton, *American Reading Instruction* (New York, Silver Burdett Company, 1934). Reports the changes in the content and the methods of reading instruction in America.

WITTY, Paul A., *Reading in Modern Education* (Boston, D. C. Heath & Company, 1949). Recognizes basic needs and suggests means of fulfilling them. Studies children, identifies interests and uses them. Proposes a program of language development.

———, and KOPEL, David, *Reading and the Educative Process* (Boston, Ginn and Company, 1939). Discusses diagnostic techniques in reading and develops types of remedial programs.

B. *Selected Research Studies and Word Lists*

BUCKINGHAM, B. R., and DOLCH, E. W., *A Combined Word List* (Boston, Ginn and Company, 1936). Most useful for its compilation of the ratings from a number of word studies.

DAVIS, Edith A., *The Development of Linguistic Skill in Twins, Singletons, with Siblings, and Only Children from Age Five to Ten Years,* Institute of Child Welfare, Monograph Series No. XIV (Minneapolis, Minn., University of Minnesota Press, 1937). An investigation of the language development of over four hundred children from five to nine.

FITZGERALD, James A., *The Vocabulary, Spelling Errors, and Situations of Fourth, Fifth, and Sixth Grade Children's Letters Written in Life Outside the School,* Unpublished doctor's dissertation, College of Iowa, University of Iowa, Iowa City, 1931. A most comprehensive investigation. Much of the data has been published in a series of articles which can be located under the author's name in the Education Index since 1931.

GATES, Arthur I., *A List of Spelling Difficulties in 3,876 Words* (New York, Bureau of Publications, Teachers College, Columbia University, 1937). Shows hard spots, common misspelling, average grade-placement, and comprehension grade rating of each word.

HOCKETT, John A., *The Vocabularies and Contents of Elementary School Readers* (Sacramento, Calif., State Department of Education, 1938). A classified index of over two hundred readers, with a study of vocabulary burden of a large number of them.

HORN, Ernest, *Basic Writing Vocabulary* (Iowa City, University of Iowa, 1926). Ten thousand words most frequently used in adult writing.

LAZAR, May, *Reading Interests, Activities and Opportunities of Bright, Average and Dull Children,* Contributions to Education No. 707 (New York, Bureau of Publications, Teachers College, Columbia University, 1937). A comprehensive study of reading interests.

LEE, Dorris May, *The Importance of Reading for Achieving in Grades Four, Five and Six,* Contributions to Education, No. 556 (New York, Teachers College, Columbia University, 1933). A study of the relationship of reading ability to success in other school subjects.

LEE, J. Murray, CLARK, W. W., and LEE, Dorris May, "Measuring Reading Readiness," *Elementary School Journal,* Vol. 34, May, 1934, pp. 656-666. A study of the value of the Lee-Clark Reading Readiness Test, intelligence tests and kindergarten teachers' ratings in predicting reading success.

MENDENHALL, James E., *An Analysis of Spelling Errors* (New York, Teachers College, Columbia University, 1930). An analysis of 2,300 words as to their spelling difficulties and special problems in certain grades.

RINSLAND, Henry D., *A Basic Vocabulary of Elementary School Children* (New York, The Macmillan Co., 1945), 636 pp. A word list based on child usage and analyzed according to frequency of use by grades.

THORNDIKE, Edward Lee, and LORGE, Irving, *The Teacher's Word Book of 30,000 Words* (New York, Bureau of Publications, Teachers College, Columbia University, 1944), 274 pp. Lists the frequency of use of each word in readers, textbooks, the Bible, and the English classics; in recent and popular magazines; in books recommended for grades three to eight; and contains a summary of all usage.

C. *Summaries of Research*

BONAR, Hugh S., "Systematic versus Incidental Training in Reading," *Elementary English Review,* Vol. 10, April, 1933, pp. 90-94, 112. Summarizes the results of studies relating to systematic and incidental guidance in reading.

FORAN, T. G., *The Psychology and Teaching of Spelling* (Washington, D. C., Catholic Education Press, 1934). The most adequate summary of spelling research to 1931.

GATES, Arthur I., *Generalization and Transfer in Spelling* (New York, Teachers College, Columbia University, 1935). Summarizes the research on generalizations.

GRAY, William S., "Summary of Reading Investigations," *Journal of Educational Research,* (for previous issues see Education Index) Vol. 33, March, 1940, pp. 481-523; Vol. 34, February, 1941, pp. 401-443; Vol. 35, February, 1942, pp. 401-442; Vol. 36, February, 1943, pp. 401-444; Vol. 37, February, 1944, pp. 401-440; Vol. 38, February, 1945, pp. 401-429; Vol. 39, February, 1946, pp. 401-433; Vol. 40, February, 1947, pp. 401-435; Vol. 41, February, 1948, pp. 401-435; Vol. 42, February, 1949, pp. 401-435. These are the most complete summaries of reading research available.

National Conference on Research in Elementary School English Publications (Chicago, Scott, Foresman and Company):

Research in Elementary Language, by Harry A. Greene, 1933 (also in *The Elementary English Review,* March to September, 1933).

A Critical Summary of Research in Elementary School Composition, Language and

Grammar by Walter S. Guiler and Emmett A. Betts, 1934 (also in *The Elementary English Review*, March-December, 1934).

Reading Disabilities and Their Correction by Emmett A. Betts, 1935 (also in *The Elementary English Review*, March-June, 1935).

Research Problems in Reading in the Elementary School by D. D. Durrell, 1936 (also in *The Elementary English Review*, March-December, 1936).

Bibliography of Unpublished Studies in Elementary School English, 1925-1934 by Josephine H. MacLatchy and Bess Goodykoontz, 1936 (also in *The Elementary English Review*, December, 1935-February, 1936).

Principles of Method in Elementary English Composition by Harry A. Greene, 1937 (also in *The Elementary English Review*, March-December, 1937).

A Bibliography of Unpublished Studies in Elementary School English by Bess Goodykoontz, 1937 (also in *The Elementary English Review*, November, December, 1937).

Elementary Language Textbooks: A Survey of Their Use and A Summary of Related Research Studies by Mildred A. Dawson, 1938 (also in *The Elementary English Review*, March-December, 1938).

Grading Children's Books by Carleton Washburne and Mabel V. Morphett, and Vivian Weedon, 1938.

A Summary of Recent Research in Elementary School English by Emmett A. Betts, 1938.

Research Problems in Reading in the Intermediate Grades by D. D. Durrell, 1938.

A Handbook of English for Boys and Girls by Robert C. Pooley, Delia E. Kibbe, and Lou LaBrant, 1939.

Development of Meaning Vocabularies with Special Reference to Reading by W. S. Gray, 1940 (also in *The Elementary English Review*, February, 1940).

Observations on Vocabulary Problems by T. A. Knott, 1940 (also in *The Elementary English Review*, February, 1940).

Value of Word-Counts by E. L. Thorndike, 1940 (also in *The Elementary English Review*, February, 1940).

Vocabulary Problems in the Elementary School: A Digest of Current Research by J. C. Seegers (also in *The Elementary English Review*, April, 1939, to January, 1940).

Reading in the Intermediate Grades: Grades IV-VI by a committee of the conference, 1941.

In general the respective bulletins and committee reports are summaries of research.

Review of Educational Research

"Handwriting," Vol. 4, April, 1934, pp. 138-140; Vol. 7, April, 1937, pp. 138-139; Vol. 10, April, 1940, pp. 146-148; Vol. 13, April, 1943, pp. 162-189.

"Language," Vol. 4, December, 1934, pp. 449-461; Vol. 7, April, 1937, pp. 135-138; December, 1937, pp. 474-481; Vol. 10, April, 1940, pp. 107-125; Vol. 13, April, 1943, pp. 88-114; 162-189; Vol. 16, April, 1946, pp. 116-132.

"Reading," Vol. 4, December, 1934, pp. 449-461; Vol. 5, February, 1935, pp. 54-69; Vol. 7, December, 1937, pp. 493-507; Vol. 10, April, 1940, pp. 79-106; Vol. 13, April, 1943, pp. 69-87; Vol. 16, April, 1946, pp. 102-115.

"Spelling," Vol. 4, April, 1934, pp. 143-146; Vol. 7, April, 1937, pp. 143-145, December, 1937, pp. 519-525; Vol. 10, April, 1940, pp. 149-151; Vol. 13, April, 1943, pp. 162-189; Vol. 16, April, 1946, p. 120.

Each article deals with the research in that area for the three years previous.

SMITH, Charles A., and JENSEN, Myrtle R., "Educational, Psychological, and Physiological Factors in Reading Readiness," *Elementary School Journal*, Vol. 36, April, May, 1936, pp. 583-591, 682-691. Summary of investigations dealing with reading readiness.

TINKER, Miles A., "Eye Movements in Reading," *Journal of Educational Research*, Vol. 30, December, 1936, pp. 241-277. Presents a detailed summary of published researches related to eye-movements in reading.

———, "The Study of Eye Movements in Reading," *Psychological Bulletin*, Vol. 43, No. 2 (March, 1946), pp. 93-120. Reviews 126 studies published between 1935 and 1944, inclusive.

TRAXLER, Arthur E., *Summary and Selected Bibliography Relating to the Diagnosis and Teaching of Reading, 1930-1937* (New York City, Educational Records Bureau, 1937). A comprehensive selected bibliography.

II

Number Experiences: Developing Quantitative Thinking

I. DEVELOPMENT OF QUANTITATIVE THINKING

Actual experiences needed to develop quantitative thinking. Just as our other curriculum experiences, number experiences need to be based upon the purposes of the elementary school. It is the responsibility of elementary education to make it possible for each child to become increasingly effective in meeting situations, both in the present and in the future. The acceptance of this point of view provides a criterion for the determination of arithmetic experiences. The implication is, therefore, that the purpose of arithmetic is to develop the ability of the pupil to think quantitatively in the situations which he meets.

The recognition that the development of quantitative thinking in actual situations is the function of the elementary school carries definite implications for the selection of experiences. It means first, that arithmetic can no longer be considered as merely a given set of facts and skills. Second, it means that experiences which are used to develop quantitative thinking must be associated with actual situations. Teachers must develop awareness of situations which have meaning for number.

Certain areas of experience of the elementary-school child have been entirely reworked. Two outstanding examples are reading and the social studies. A glance through any set of basic readers reveals how situations that are real, vital, and meaningful for the child are utilized. A study of the units of work offered in any modern school indicates that social studies have moved a long way from the utilization of one history and one geography book toward the development of a social understanding through actual experiences. Arithmetic, however, has been slower. The main difficulty has been that teachers were entirely dependent upon the text, and it is still too commonly the practice to assign a given number of problems to be worked in a half or three-quarters of an hour. Texts are improving in offering problems within children's understanding, but much still needs to be done in this direction.

The answer seems indicated by the function of the elementary school. Classroom experiences in which the child utilizes quantitative thinking and texts will ultimately supplement one another. It is most encouraging that in several centers, work has been and is developing which yields many

suggestions. Improvement has been made, but much more still needs to be done.[1]

The goal—understanding not mechanical response. Formal instruction in arithmetic has led to a certain mastery of computational skills. However, the application of these skills in situations which involve quantitative thinking is remarkably poor. The implication was that when the child had mastered the skills, he could then apply and utilize them. Dependence upon this type of transfer has no psychological or practical justification.[2] It is the responsibility of the school not only to develop mastery, but what is much more important, to provide opportunities for the application and utilization of the skills and processes. Faced with this larger responsibility the teacher undoubtedly feels extremely hesitant. Experience in the past has shown her that it is sufficiently difficult to develop just mere mastery on the part of her pupils. A larger responsibility seems an impossible task.

However, careful examination of her problem is much more encouraging than it would at first seem. The basic difficulty in the past has been that only mastery was attempted in many cases. From the child's point of view this involved a mastery of mere meaningless symbolism. The newer point of view places insight and understanding in the principal rôle. These insights and understandings are to grow out of childhood experiences. The teacher has found that her task has become easier when reading is built upon words which the child understands. She will also find that it will be much simpler to develop arithmetic skills based upon processes which have meaning for the child.

Correct response no indication of understanding. Arithmetic success in the past has been measured by the ability of the child to respond correctly to an enormous number of mechanical situations. To $+\frac{2}{2}$, the child responds 4. The teacher has accepted this response as evidence of the child's understanding. More often than not the response 4 means no more to the child than if one would say, "Jack and Jill went up the" and he answered "hill." There is little understanding of the numerical concept involved; it is merely an automatic response. When endless drill has been given by means of flash cards or textbooks on the combination of 2 + 2, the child soon learns that the answer 4 is the only one which the teacher for some reason considers correct. If, however, the answer has been developed through dealing with actual objects and he knows that two boys and two boys are four boys and that two balls and two balls

[1] The authors in the first edition made the statement "During the next ten years arithmetic will have changed as much as social studies have changed in the past ten" (p. 416). Obviously this prediction was extremely optimistic in view of what happened during the following ten years. Many teachers have made tremendous progress, but in too many classrooms there is still little attempt to build understanding by relating numbers to the child's experience.

[2] See the discussion on transfer in Chapter 5.

are four balls, then he comes to understand that the symbol 2 stands for two objects. The response to $+\frac{2}{-}$ is based upon understanding rather than upon merely mechanical response.

The difference is distinguishable in the processes by which the child obtained the answer rather than the answer itself. The difference in the process is due to the difference in presentation. In the first case, it was presented in symbol form; in the second case actual experiences were utilized.

Opportunities for developing insight. A survey of the better courses of study indicates that primary teachers have accepted this point of view. The result is that in grades one and two much meaningless drill has been eliminated. In its place the teachers utilize all of the number experiences which arise in a unit to develop number meanings for children. Most primary units are unusually rich in opportunities if the teacher is clever enough to utilize them. A first-grade unit on the home will contain such number experiences as:

Measurement through comparisons of one stick with another
Utilization of such terms as *little, big, long* board, *short* board, *wide* board
Counting of objects such as furniture, dishes
Beginnings in the development of areas and forms

The second-grade unit on the market would provide opportunities:

To make simple change
To add prices together
To know the relation between pints and quarts, half-pints and pints, foot, yard
To know such terms as *buy, sell*
To weigh and to measure and to write price tags
To construct a store
To work out plans
To read the calendar
To calculate certain number concepts of size as—*longer, longest, high, low, smaller, larger*
To know arrangements such as—*up, down, over, under, right, left*
To know such concepts as—*square, triangle, circle, rectangle.*

The adoption of similar procedures in grades three, four, five and six is practical. Heretofore, teachers have been concerned with covering the exercises and problems in a given textbook. However, there are even greater varieties of numerical experiences that can be utilized on this level than on the primary if the teacher is only alert to them. Some of these experiences taken from the Fort Worth Course of Study,[3] which has made a real contribution to this procedure are:

Drawing maps, plans, and diagrams to scale
Planning arrangements of materials

[3] Fort Worth Public Schools, *Tentative Course of Study in Mathematics for Grades Four, Five and Six,* Curriculum Bulletin No. 161 (Fort Worth, Texas, 1936).

Interpreting and constructing graphs
Constructing models and larger projects to scale
Planning excursions including routes and costs
Making pictorial time lines
Utilizing opportunities afforded in giving a play
Constructing stage settings
Making costumes
Managing ticket sale
Timing performance
Planning a garden
Keeping class records
Comparing size of objects
Comparing cost of living of different peoples
Comparing expenditures of transportation and communication
Understanding that the earth's movements determine time

These few examples are suggested to indicate that in social studies and science there are many opportunities to develop quantitative thinking. The actual utilization of these opportunities means that the child learns to handle numerical concepts as they are used in everyday experiences. Number, then, offers a way or possibility for making comparisons or drawing conclusions, not mere manipulation or calculation.

It will only be through the types of experiences illustrated that arithmetic will become functional for the child. Quantitative thinking will then be developed in actual situations requiring it. No longer will the teacher deal with meaningless manipulations and expect the youngster to make the transfer to the generalizations and concepts involved. The development of understanding becomes the keystone on which the arithmetical program is built; and as in reading skills, the abilities will become more easily mastered when based upon insight rather than memorization.

Clarifying quantitative concepts. One of the major functions of arithmetic is to develop exact thinking and expression in situations which can best be expressed quantitatively. Spitzer [4] has illustrated the possibilities by pointing out three levels or degrees of quantitative thinking. If three pupils reported on soil conservation as follows, which would you consider the best statement?

Mary: "The rain and snow have washed away a lot of our soil recently."
John: "Our farms have in the last five years lost two inches of top soil on the average."
Helen: "One-fourth of the eight inches of top soil has been washed away in the last five years."

Obviously Helen furnished the most exact statement.

Oral arithmetic can make a real contribution to this purpose. Rounding off large numbers, comparisons, approximating answers are all valuable experiences. Every experience should be used to improve our

[4] Adapted from Herbert F. Spitzer, *The Teaching of Arithmetic* (Boston, Houghton Mifflin Company, 1948), p. 23.

quantitative statements. We are concerned with poor language when used outside of the language arts period. We should be equally concerned with "low-level" quantitative statements.

II. WHAT ARITHMETIC SHALL WE TEACH?

Elimination of topics. This question is by no means settled. In recent years there have been two distinct trends. The first has been to eliminate certain topics which were formerly taught. This trend was stimulated by the work of Wilson, Jessup and Coffman, and many others. In general their research studies showed that many topics commonly included in texts were little used in business and social life. Study after study has shown that the business and social needs of most people for computation are relatively small.

Representative of the findings of studies dealing with this problem is one reported by Wilson and Dalrymple.[5] They summarize eight previous studies on adult usage of fractions and compare them with a comprehensive study of complicated business usage.

The combined eight studies yielded 12,613 occurrences of fractions. The fractions which occurred more than fifty times, in order of their frequency are $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{3}$, $\frac{1}{12}$, $\frac{3}{4}$, $\frac{1}{6}$, $\frac{2}{3}$, $\frac{1}{8}$, and $\frac{7}{8}$. Occurring less than fifty and more than ten were $\frac{5}{12}$, $\frac{3}{8}$, $\frac{5}{8}$, $\frac{1}{10}$, $\frac{7}{12}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{4}{5}$, $\frac{5}{6}$, $1\frac{1}{12}$, and $\frac{3}{5}$.

The study of complicated business usage reported the results according to the denominator of the fractions. There was a total of 102,220 fractions. Those used most frequently in order of use were quarters, halves, eighths, thirty-seconds, thirds, twelfths, sixteenths, hundredths, and sixths. All of the others combined only totaled 163 out of the 102,220.

The number of fractions which are used to any extent are much more limited than the number customarily required for mastery in the arithmetic program. If mastery were required on only fractions that were used as frequently as 1 per cent, the first list would be limited to $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{3}$, $\frac{1}{12}$, $\frac{3}{4}$, $\frac{1}{6}$, $\frac{2}{3}$, and $\frac{1}{8}$. The list from the second study would be limited to quarters, halves, eighths, thirty-seconds, and thirds. The denominator thirty-two was used largely in complicated stock and bond transactions. Subtraction and division of fractions seldom occur. These findings are typical of all the complicated processes.[6]

More social and informational material is emphasized. The second trend has been toward the introduction of more informational material

[5] Guy M. Wilson and Charles O. Dalrymple, "Useful Fractions," *Journal of Educational Research*, Vol. 30, January, 1937, pp. 341-347.

For a more complete discussion of this whole problem see Guy M. Wilson, Mildred B. Stone and Charles O. Dalrymple, *Teaching the New Arithmetic* (New York, McGraw-Hill Book Company, 1939).

[6] Guy M. Wilson, "The Social Utility Theory as Applied to Arithmetic, Its Research Basis, and Some of Its Implications," *Journal of Educational Research*, Vol. 41, January, 1948, pp. 321-337.

as a basis for making decisions requiring the use of number. It also has manifested itself in attempts to analyze the quantitative thinking required in other subjects and in adult life. This trend has resulted in the inclusion of much material which formerly was not thought of as a part of the arithmetic program. Undoubtedly much more of this material will be included in the future.

The trend is most commendable, for quantitative thinking does not develop only from the manipulation of numbers. One difficulty has been that the actual problems with which adults have to deal quantitatively are included in the curriculum. The child actually has not the background or need to deal with such problems. Instead, the same types of thinking should be used with problems that the child can understand. This change is being made gradually, and the next few years promise much for this type of development.

Some illustrations of quantitative thinking similar to that done by adults but utilizing material familiar to children have been taken from a fifth-grade arithmetic to show what is being done: [7]

The pupils in Miss Lane's class have tried to find out how much arithmetic is used at home. In one day Mary and Joe found these problems at home:

1. Mother has a 6-pound roast which she wants to cook for dinner at 6 o'clock. The time she allows for cooking it is 25 min. to each pound of meat. How many hours should she allow for this roast? At what time should she put the roast in the oven in order to have it ready by 6 o'clock?
2. Mother allows 1 hr. for the baked potatoes. How long after she starts roasting the meat should she put the potatoes in the oven? At what time should she do this?
3. Mother received the week's milk bill today. It is $4.48 and she wants to check it. She had used 4 qts. of milk each day of the week at $.16 a quart. Is the bill correct?

III. READINESS TO UNDERSTAND NUMBER

Number concepts develop early. Every kindergarten teacher knows that children enter kindergarten with many number concepts already formed. Parents watch the increasing understanding which their children manifest, starting with one, then many, and finally breaking down into enumeration of objects. A boy, three and one-half years old, wanted to bring his dog into the kitchen, but was told there were too many people already there. He answered, "There's not too many. You're one, Agnes is two, I am three, Mother is four. There's room for Ming." Teachers should observe enough young children to understand this development.

The progress of an individual child depends upon his intelligence and the situations which have been presented to him. By the time first grade is reached there are wide variations in abilities of children in dealing with

[7] Clifford B. Upton and Kenneth G. Fuller, *Arithmetic, Grade 5* (New York, American Book Company, 1946), p. 86.

various phases of number. MacLatchy has shown that in an unselected first-grade class of thirty-five children one could expect to find: [8]

1 child who did not know how to count.
1 child who can count to five.
3 children who can count to ten.
9 children who can count to fifteen.
9 children who can count to twenty.
2 children who can count to thirty.
3 children who can count to forty.
2 children who can count to fifty.
2 children who are uncertain counters from 50 to 99.
3 children who can count to 100.

These data of entering first graders are an indication that some children probably have developed a fair concept of number though others may have practically no understanding.

Implications for teaching. The old-type teacher would have begun formal number work with all of these children and then would have wondered why some never seemed to understand the work. The teacher of to-day realizes that meaning must be developed before any formal manipulation of number is attempted. Thus the function of the primary teacher is to supply as many situations as possible for the use of number. These situations must vary in complexity to meet the different levels of understanding and maturity. *Incidental number does not mean accidental teaching.* It does mean that the teacher must be conscious of, and provide for differences in experiences and for:

Differences in maturity in children
Situations for making number meaningful
Concepts which can be taught at various maturity levels
Utilization of opportunities which occur for developing primary concepts [9]

Numerical concepts which can be understood at various maturity levels are still somewhat in the realm of unsolved problems. However, research has supplied considerable information, so at least the broad outlines of what can be done stand out. The earlier studies of MacLatchy,[10] Smith,[11] Polkinghorne,[12] and Brownell [13] furnish insight as to maturation of these

[8] Josephine MacLatchy, "Number Abilities of First Grade Children," *Childhood Education*, Vol. 11, May, 1935, p. 344.

[9] Many helpful suggestions can be found in Olga Adams, "Arithmetic Readiness in the Primary Grades," *Elementary School Journal*, Vol. 48, October, 1917, pp. 91-96.

[10] *Op. cit.*

[11] Nila B. Smith, "An Investigation of the Uses of Arithmetic in the Out-of-School Life of First-Grade Children," *Elementary School Journal*, Vol. 24, April, 1924, pp. 621-626.

[12] Ada R. Polkinghorne, "Young Children and Fractions," *Childhood Education*, Vol. 11, May, 1935, pp. 354-358.

[13] W. A. Brownell, *The Development of Children's Number Ideas in the Primary Grades*, Supplementary Educational Monographs, No. 35 (Chicago, University of Chicago, 1928).

concepts on the primary levels. Later studies supporting these findings have been made by Mott [14] and Stotlar.[15] Stotlar points out that kindergarten children "have a definite consciousness and understanding of number before they enter school."

The out-of-school number experiences of first-grade children consisted of:

30% in stores
18% in games involving counting
14% in reading Roman numerals
13% in reading Arabic numerals
25% in miscellaneous activities

Analyzed by processes it included:

35% Addition
23% Counting
12% Subtraction
8% Fractions
22% Miscellaneous

The use of fractions is not surprising in view of Polkinghorne's report that "based on concrete experiences" children developed the concept of unit fractions as related to a single object, to a group, and to the comparison of two objects or groups of objects.

One of the most important findings from the research in the primary grades is that children's number concepts develop gradually over a period of time. This finding is resulting in a "spread" of processes over a wider grade range. The child has certain ideas about fractions in the first grade. These can be utilized; it is not necessary to wait until the fourth grade. This idea is reflected in the advertising of the various series by such terms as *ramp, loop,* and *slow incline of difficulty relieved by plateaus of absorption.*

IV. CHANGES IN GRADE PLACEMENT

Committee of Seven. Grade placement was one of the most controversial topics in arithmetic between 1930 and 1940. The emphasis was due to reports of the Committee of Seven of the Superintendents' and Principals' Association of Northern Illinois. The discussion resulting from the research of this committee was responsible for a general movement of topics upwards in the grades.

The committee's work resulted in so many changes that every one interested in arithmetic should be familiar with their procedure. Briefly,

[14] Sina M. Mott, "Number Concepts of Small Children," *Mathematics Teacher,* Vol. 38, November, 1945, pp. 291-301.

[15] Carolyn Stotlar, "Arithmetic Concepts of Preschool Children," *Elementary School Journal,* Vol. 46, February, 1946, pp. 312-315.

the topics were taught in a series of grades: in the usual grade, and in one or two grades immediately preceding and following. Each coöperating school utilized the time allotments, instructional materials, methods and tests suggested or furnished by the committee. Previous to the teaching of each topic, intelligence tests and arithmetic foundation tests were given, the former for a mental age and the latter to measure the mastery of the skills prerequisite for the topic. Instruction followed for a specific time, and mastery was measured by retention tests given some weeks after the conclusion of teaching.

The committee arbitrarily set a so-called "mental age" standard. The mental age was chosen at which three-fourths of the children could show 80 per cent mastery. Some of their findings are given in Table XII. The column headed "Grade-Placement" indicates the grade for introducing the topic to children with IQ's of 100.

TABLE XII

SOME FINDINGS FROM THE COMMITTEE OF SEVEN *

Topic	*Minimum Effective Mental Age According to the Committee*	*Grade Placement* †
Addition facts: sums ten and under	6-5	1.2
Subtraction facts: easier fifty	6-7	1.3
Addition facts: sums over ten	7-4	2.0
Subtraction facts: harder fifty	7-8	2.3
Multiplication facts	10-2	4.7
Simple multiplication (one-place multiplier, not more than four places in multiplicand)	10-2	4.7
Compound multiplication (two-place multiplier, not over three places in multiplicand)	10-2	4.7
Meaning of decimals	10-5	4.9
Multiplication of decimals (easy examples in simple and compound multiplication)	10-6	5.0
Long division: complete	10-9	5.2
Addition and subtraction of decimals	10-11	5.4
Division facts: complete	11-2	5.6
Short division	11-4	5.7
Simple division of decimals (division of integer or decimal by one-digit number)	11-4	5.7

* Adapted from the reports of Carleton W. Washburne, "The Grade Placement of Arithmetic Topics: A 'Committee of Seven' Investigation," *Twenty-Ninth Yearbook* of the National Society for the Study of Education (Bloomington, Ill., Public School Publishing Co., 1930), pp. 641-670. Quoted by permission of the Society.

† The grade placement corresponds to the mental age and indicates the approximate location of introducing the topics if all pupils had IQ's of 100 according to the committee findings. This column is supplied by the present authors, not by the Committee of Seven.

Table XII represents the way in which the findings of the committee are usually interpreted by some people. According to this interpretation of the committee's work, we would teach multiplication facts, one-place

multipliers, and two-place multipliers at the same time. One month after we teach the meaning of decimals, we would teach multiplication of decimals, and then four months later the addition and subtraction of decimals. That is only the beginning of the difficulty, for we will teach long division in grade 5.2, and four months later we teach the division facts and follow one month later with short division and simple division of decimals. However, the committee, in later publications, did stress the fact that its findings relate to the "teaching to completion" of certain topics.[16] This is too often overlooked by schools.

Limitations stressed by the committee. The committee through its chairman points out the following limitations in its study.[17]

1. Experiments were not repeated and should have been.
2. Minute detailed analyses were not made. (See Brownell [18] for a discussion of the effect of the large grouping used by the committee. Beginnings of such analyses have been made, however.)
3. The findings only apply when the "specific method of teaching and specific materials and time allotments" recommended by the committee are used.
4. The method involved "concentrated instruction on one process." (This method is not followed in any of the better texts and is not in conformity with what is known concerning the development of concepts.[19])
5. The standard is "purely arbitrary" (based upon relationship between mental age and achievement in arithmetic which is notably low. If the committee had used chronological age, they would have undoubtedly had similar results to their mental age findings,[20] yet it would not necessarily follow that a child had to be a certain age before he could achieve in certain processes.)
6. The foundation tests have "lacked elements that would show whether or not a child had a real concept of the meaning of the process."

[16] See Chapter XVI of the *Thirty-Eighth Yearbook* of the National Society for the Study of Education, Part I (Bloomington, Ill., Public School Publishing Co., 1939) for a most comprehensive statement of the committee's position. See also Carleton Washburne, "Reply to Brownell's Critique of the Committee of Seven's Investigation," *Elementary School Journal*, Vol. 39, February, 1939, pp. 417-430.

[17] Carleton Washburne, "The Values, Limitations, and Applications of the Findings of the Committee of Seven," *Journal of Educational Research*, Vol. 29, May, 1936, pp. 694-707. Material in parenthesis represents our comments, whereas the seven points represent those of Washburne.

[18] William A. Brownell, "A Critique of the Committee of Seven's Investigations on the Grade Placement of Arithmetic Topics," *Elementary School Journal*, Vol. 38, March, 1938, pp. 495-508. This is the best criticism of the work of the committee available.

[19] See Chapter 9 and the discussion relating to social-studies concepts. Studies in arithmetic learning show the same gradual type of development. For further evidence see Ned M. Russell, "Arithmetical Concepts of Children," *Journal of Educational Research*, Vol. 29, May, 1936, pp. 647-663. It is interesting to note that the articles by Russell and Washburne are in the same issue.

[20] On page 700, Washburne makes the statement: "The answer to this criticism lies in the fact that there is evidence that the percentage of children who can achieve mounts rapidly to a certain point of mental age and that it mounts very little thereafter." The point we wish to make is that if any other measure of maturity were used, the same phenomenon would probably be present. This considers the fact that the results were spread over several grades, and height, weight, age, or reading scores would in that case have some correlation with arithmetic.

7. The tests on the process taught were not "sufficiently complete." They did not "differentiate" sufficiently between various degrees of difficulty.

This discussion is not especially important for the average teacher, but for those who serve on curriculum or textbook committees, it is most important. For further discussion of the evidence, the article by Brownell [21] and the replies by Washburne [22] will be of value. Johnson [23] supported the committee's recommendation by showing gains in the Chicago schools following a change in placement.

Committee's contribution. What, then, has the Committee of Seven contributed? It has done much to break down a traditional grade placement of arithmetic topics which had been more or less sacred. Its main contribution comes from the sensational disturbance it was able to bring about in the status quo. This is extremely valuable, for it makes possible, which is much more important, the gradual development of arithmetical concepts over a period of time. It has opened the way for experimentation with learning units directed toward the development of understanding rather than supplying only repetition. It leaves the way open for experimentation to determine how boys' and girls' number concepts really develop. It does give evidence that by the "drill theory" of teaching arithmetic we have been trying to teach some topics too soon. We are still a long way from having a final answer either as to the organization of the arithmetic program or to grade placement.

V. NUMBER EXPERIENCES IN A FUNCTIONAL SETTING

Incidental or formal learning. The arithmetic program of the past consisted of a hierarchy of skills and abilities built one upon another. The acceptance of a point of view that arithmetic should consist of the experiences which are real and vital in the life of a child requires a different type of organization than is offered by the traditional program. This reorganization has been principally tried out and tested in the primary grades.

The usual procedure now is to offer what is called incidental number experiences. The best of these courses consist of a large number of suggestions of possible opportunities which the teachers have compiled and made available to each other. Teachers carefully plan these experiences to yield the desired understandings on the part of the pupils. At the worst they consist of random experiences which the individual teacher happens to utilize at any given time. If the teacher is not unusually conscious of such opportunities, they pass by neglected, and the result is incidental experiences in the worst sense of the term.

[21] *Op. cit.*

[22] See footnote 16.

[23] J. T. Johnson, "An Evaluation of Research on Gradation in the Field of Arithmetic," *Journal of Educational Research*, Vol. 37, November, 1943, pp. 161-173.

The results of the experimentations indicate that when in the first and second grades actual experiences have been utilized to give number meanings to the children, more learning takes place than in the formal program. Several outstanding experiments [24] have agreed on this point.

Some possibilities for number experience. It is assumed that the use which children make of number in out-of-school situations will furnish leads to teachers in guiding number experiences in the classroom. These out-of-school uses should not be utilized to limit the teacher. They merely suggest some possibilities which might be capitalized.

In first grade. A few studies of various types and from various grades furnish some suggestions for teachers. Smith's study, which was previously referred to, showed that first graders used number in stories and in games involving counting.[25] The processes emphasized addition, counting, subtraction, and fractions.

In third grade. Wahlstrom had third-grade children report orally to their teachers their own actual experiences which involved arithmetical computations. These were stated in the form of problems. The problems dealt with: [26]

Buying	35%	Gifts	3%
Counting	17	Savings and allowances	2
Work situations	11	Winning and losing things	2
School activities	10	Understanding adult activities	1
Games	9	Construction	1
Amusements	5	Health	1

The problems utilized simple addition, simple subtraction, one-digit multipliers, and a very few division problems. Nearly four out of five were one-step problems.

In the intermediate grades. For the fifth and sixth grades a study by Warren and Burton is suggestive of some possibilities. They submitted a check-list of consumer business practices to fifth- and sixth-grade children and asked them to indicate whether they had ever performed that operation. The list had been prepared from lists turned in by adults in several occupations. These are produced in Table XIII, grouped according to type of operation, then ranked according to frequency.

This list should prove to be a basis for the effective utilization of number in relation to experiences which children have. A careful study of it will show many possibilities for classroom use.

[24] William A. Brownell and C. B. Chazal, "Effects of Premature Drill in Third-Grade Arithmetic," *Journal of Educational Research,* Vol. 29, November, 1935, pp. 17-28.
Guy M. Wilson, "New Standards in Arithmetic," *Journal of Educational Research,* Vol. 22, December, 1930, pp. 351-360.

[25] See footnote 11.

[26] Ebba L. Wahlstrom, "The Computational Arithmetic of Social Experiences of Third-Grade Children," *Journal of Educational Research,* Vol. 30, October, 1936, pp. 124-129.

TABLE XIII

PERCENTAGE OF 1,000 FIFTH- AND SIXTH-GRADE PUPILS WHO HAD PERFORMED VARIOUS BUSINESS OPERATIONS AND RANK OF EACH OPERATION IN THE GROUP OF SIMILAR OPERATIONS *

Business Operation	*Percentage of Pupils Having Performed Operation*
Telephonic operations:	
1. Using a telephone directory	89.7
2. Answering the telephone	89.2
3. Dialing a number on the telephone	87.5
4. Using classified business section of a telephone book	53.9
5. Asking information operator for a number not in the directory	45.6
6. Using a pay-booth telephone	41.2
7. Ordering groceries or other merchandise over the telephone	40.6
8. Visiting local telephone building	31.5
9. Placing a long-distance call	25.2
10. Paying a telephone bill	19.4
11. Receiving a telegram by telephone	12.9
12. Sending a telegram by telephone	7.6
Banking operations:	
1. Visiting a bank	95.7
2. Putting money in a small bank of some kind at home	86.8
3. Having a savings account	74.3
4. Depositing money in a local bank	48.7
5. Cashing a check	40.1
6. Visiting vault where safe-deposit boxes are kept	30.9
7. Drawing money out of a bank	27.6
8. Depositing money in a school bank	26.3
9. Making out a deposit slip	23.2
10. Indorsing a check	19.3
11. Depositing money in a building-and-loan bank	18.8
12. Writing a check	10.4
13. Filling in a check stub in a checkbook	8.3
14. Using a safe-deposit box	1.9
Money-handling operations:	
1. Buying anything	99.2
2. Spending money	98.1
3. Counting change returned by a clerk	97.6
4. Earning money	96.8
5. Buying a paper from a newsboy or newsstand	83.7
6. Selling anything	81.5
7. Renting anything	62.8
8. Paying bills for parents	58.5
9. Having been given a receipt for money paid	53.0
10. Being paid a regular allowance	52.9
11. Serving as treasurer or secretary of a class or club	47.4
12. Sending money by mail	39.9
13. Acting as cashier at any school or club function	38.4
14. Keeping a written record of money received or spent	34.5
15. Receiving a money order	18.7
16. Giving a receipt to anyone	15.7
17. Sending a money order	12.4

* Adapted from Dorothy E. Warren and W. H. Burton, "Knowledge of Simple Business Practices Possessed by Intermediate-Grade Pupils," *Elementary School Journal*, Vol. 35, March, 1935, pp. 511-516.

TABLE XIII (*Continued*)

Business Operation	*Percentage of Pupils Having Performed Operation*
Travel services:	
1. Paying own fare on a train, bus, or street-car	88.7
2. Using a time-table	56.3
3. Securing information from travel-service bureaus	38.1
4. Buying a ticket for travel	29.1
5. Using a traveler's check	7.6
6. Checking baggage	6.4
Mailing operations:	
1. Mailing a letter	96.7
2. Addressing mail	96.0
3. Buying stamps	95.7
4. Visiting a post-office	95.2
5. Wrapping a package for mailing	75.9
6. Mailing a package	75.2
7. Writing a business letter	55.4
8. Sending letters by air mail	51.7
9. Receiving a telegram from a messenger boy	44.7
10. Sending mail to foreign countries	38.9
11. Sending mail by special delivery	37.9
12. Insuring a package	28.4
13. Registering a letter	27.2
14. Receiving a cablegram	12.3
15. Having a lost package or letter traced	5.1
Miscellaneous operations:	
1. Running errands	97.8
2. Voting in a school or club election	93.8
3. Checking a book out of a public library	87.6
4. Delivering messages or articles of any kind	83.1
5. Using a typewriter	81.1
6. Nominating anyone for office in school or club	76.1
7. Making an appointment with a dentist or a doctor	55.3
8. Counting ballots	47.6
9. Helping the school librarian check books in or out	46.5
10. Using a city directory	34.9
11. Applying for a position	30.4
12. Checking clothes to or from a laundry	28.6
13. Running a business of any kind	28.3
14. Contributing an article to any school or club paper	26.5
15. Writing an advertisement	25.4
16. Applying for a license	25.3
17. Editing a school or club paper	13.8
18. Signing a contract	12.0
19. Acting as witness at any court trial	3.8

Real problems collected from the school of Santa Clara County were found to deal with school subjects, time, objects, pets, and distance. Almost all the processes were used throughout the grades.[27] The possi-

[27] Roy DeVerl Willey, "A Study of the Use of Arithmetic in the Elementary Schools of Santa Clara County, California," *Journal of Educational Research*, Vol. 36, January, 1943, pp. 353-365.

bilities of mathematical processes in a citrus unit were described in detail.[28]

The most complete study of possibilities of using arithmetic to develop economic competence has been made by Gavian. She suggested in a brief statement[29] that many opportunities arise—in shopping, spending and managing own money, in developing understanding of local business, and in understanding how the community obtains money for the services it renders. Many opportunities will be recognized by the teacher who knows the economic conditions in the homes of the pupils and in the community.

Further help can be obtained from the suggestions given by Brueckner,[30] Lindsey,[31] and Wilson.[32] Materials published by Garden City[33] and Webster Groves[34] are helpful to teachers.

The teacher's own studies. Children have many number experiences both in school and out. When teachers are conscious of these many opportunities, there is little or no difficulty in making effective use of them. However, teachers think only too often of arithmetic as occurring during a forty-minute period with all problems drawn from text. No wonder children have difficulty in getting any "insight" from such a program.

Definite studies must be made by teachers if situations which should be utilized for developing quantitative thinking are used. The teacher must:

1. List opportunities which arise in class activities.
2. Get children to bring in ways in which they use arithmetic out of school.
3. Analyze requirements of other texts for types of experiences which are presented. (The material from primary readers, the Fort Worth Course of Study, and social-studies books are suggestive.)

Relation of incidental learning to planned programs of development. Were teachers to abandon the planned programs of numerical development and depend wholly on incidental experiences, the same chaotic condition would exist as exists in many social-studies programs. A balance needs to be maintained between the planned programs as represented by textbooks in arithmetic and the experiences in utilizing number in classroom experiences.

[28] Hattie Maguire, "Can Arithmetic be Correlated with the Unit of Study," *Mathematics Teacher,* Vol. 36, May, 1943, pp. 219-225.

[29] Ruth Wood Gavian, "Using Arithmetic to Develop Economic Competence," *Childhood Education,* Vol. 21, April, 1945, pp. 417-419.

[30] Leo J. Brueckner, "Experience Units in Arithmetic," *N.E.A. Journal,* Vol. 37, January, 1948, p. 21.

[31] Margaret Lindsey, "Helping Children See Relationships in Developing Social Concepts," *Childhood Education,* Vol. 25, November, 1948, pp. 122-125.

[32] Guy M. Wilson, "Functional Arithmetic Number," *Education,* Vol. 65, April, 1945, pp. 453-516.

[33] Lucile Allard, *Report of the Teaching of Mathematics in the Garden City Elementary Schools* (New York, Garden City Schools, 1940).

[34] Webster Groves Public Schools, *Suggestions for Arithmetic Experiences in the Primary Grades* (Missouri, Webster Groves Public Schools, 1941).

A comparison of the suggestions for incidental teaching given in this section and section VII with the programs of the modern textbooks shows the relationship that exists between them. In general, the incidental experiences are of two types: the computational type, as represented by the Texas and Harap units, and what may be called for the lack of a better term the consumer's type, as represented by the Fort Worth Course of Study (see section VII). All of the suggested experiences help to add meaning and insight to the child's study of arithmetic. These supplement the carefully planned development which the modern text utilizes both in growth in computational ability and in understanding quantitative relationships. An adequate program of arithmetic teaching requires the use of both the incidental classroom experiences and the planned textbook program. If either one is used to the exclusion of the other, optimum development will be difficult.

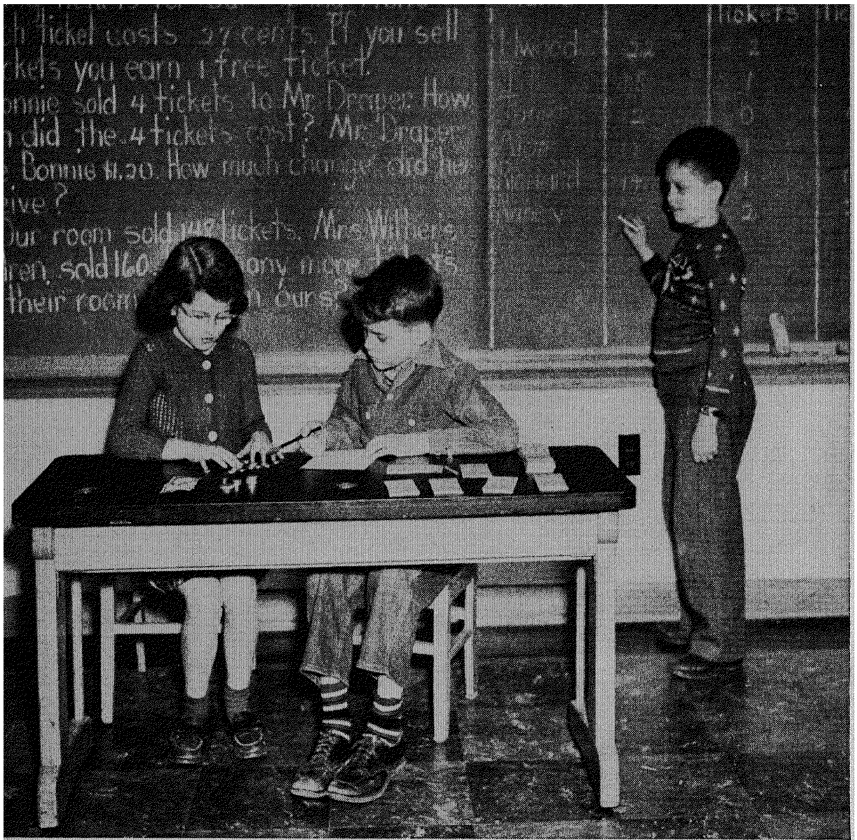
. *Correlations in social studies.* The analysis of social-studies and science materials suggests a type of arithmetical experience not commonly found in arithmetic books nor stressed by arithmetic teachers. It tends to show that we cannot read intelligently either in the field of the social studies or the sciences without constant need of understanding mathematical concepts. Actually relatively little work is given which helps pupils to understand the quantitative references found in social-studies material. Teachers need to discuss such references when they occur and be sure that the pupils understand their significance. Several such references found in social-studies texts are reproduced as typical of such passages commonly found. A study of these selections shows the need for special teaching emphasis if they are to be understood. These selections have been taken from a fifth-grade text.[35]

The Diesel engine inside looks like a very big automobile engine. If anything, it looks even more simple. It is certainly very simple compared with the steam locomotive. The whole engine car weighs only 18 tons, although a large locomotive weighs 300 tons. It can carry oil enough to run 1,200 miles, or 20 hours, although a locomotive can run only 9 hours with its load of coal and water. The Diesel engine can keep up a speed of 90 miles an hour and can go as fast as 120 miles an hour. A Diesel engine burned only $80 worth of fuel to haul a train of six cars from New York to San Francisco. The coal burned in a locomotive for such a trip would cost several times as much.

By this time Americans had learned from England how to make machines for spinning thread and weaving cloth. It was in the year 1822 that a group of men decided to build some factories for the new machines so that the spinning and weaving could be carried on in one place. The men were going to buy their cotton from Southern plantation owners, but they wanted to build their factories where there was a good source of power and where transportation to market was easy. They decided that the place they wanted was the banks of the Merrimac River. They bought land there, harnessed the water power, and soon had it turning many spindles and working great looms. In 1823 the first cloth came from

[35] Howard E. Wilson, Florence H. Wilson, and Bessie P. Erb, *Living in the Age of Machines* (New York, American Book Company, 1937), pp. 335, 381.

Numbers acquire meaning



Problems are real

their factories. The little village on the Merrimac had become Lowell, the "Spindle City," making cotton cloth for all the world to buy.

In 1800 there were only a few people living in the village. In 1826, three years after the factories had opened, two thousand people were living there. By 1836 there were 18,000 people, with carpenters building more and more houses all the time, and yet not enough houses to meet the need. More mills were built, and for many years Lowell made more cotton cloth than any other city in the United States.

TABLE XIV

THE MOST FREQUENT TERMS RELATED TO QUANTITATIVE CONCEPTS USED IN PRIMERS, FIRST- AND SECOND-GRADE READERS *

Item	*Frequency of Mention*	*Item*	*Frequency of Mention*
Terms referring to size:		Numbers expressed in words:	
little	2842	*one*	774
big	1339	*two*	533
long	260	*three*	272
wee	156	*four*	177
small	102	*five*	111
Terms referring to quantity:		Arabic numerals:	
some	913	*1*	302
all	703	*2*	298
no (not any)	291	*3*	277
other	283	*4*	236
many	278	*5*	181
every	220	*6*	136
another	180	*7*	107
Terms referring to time:		Miscellaneous arithmetical concepts:	
soon	376	*old*	315
now	368	*again*	269
day	298	*new*	247
winter	168	*fast*	142
morning	155		
night	152		
to-day	109		
summer	103		
Terms referring to location:		Terms referring to experiences with money:	
down	489	*buy*	237
up	386	*store*	200
next	295	*money*	106
under	248		
near	147	Miscellaneous terms:	
behind	141	*number*	113
front	115		
top	115	Ordinals:	
high	108	*first*	132

* Adapted from Gunderson, *op. cit.* Only those terms with a frequency of more than 100 are listed here. The complete list appears in the reference.

Correlations in reading. Another area where there is some interesting data is in the amount of number references in primers, first and second readers. Gunderson [36] analyzed ten sets of readers, from the primer through the second reader. She found a surprising number of references. The inclusion of the large amount of number references offers many opportunities to primary teachers for correlation. See Table XIV for these statistics.

The most frequently used terms are listed in Table XIV. There is seemingly little attempt to write readers that will deal adequately with number ideas. This conclusion is supported by the extensive use of some terms and the limited use of terms that seem to have equal value. Even though the situations are not the best, the evidence in Table XIV indicates that there are, even now, countless opportunities in the readers.

VI. BASIC GUIDING PRINCIPLES [37]

These principles should be of help in planning and guiding number experiences.

1. Arithmetic is a system of meanings to be utilized in quantitative thinking.
2. Attention must be centered upon those meanings that are significant in the life of the individual learner.
3. The meanings must be developed in their natural setting—normal activities requiring quantitative thinking—but may be extracted for supplementary drill activities.
4. The maturity of the learner must be a determining factor in the selection of meanings to be given attention. (It is evident that the development of certain meanings has been attempted too early in the life of the child.)
5. The term *meanings* should include facts, concepts, principles, and processes.
6. The process of thinking employed by the child is as important as the actual product of his thought.
7. If drill is to be effective, it is necessary that the individual realize a definite need for the skills and habits of quantitative thinking drilled upon. Repetition of basic skills and principles is necessary, but drill should be accompanied by interest and realization of need.[38]
8. Understanding of the various concepts and processes develops gradually over several years.
9. Out-of-textbook experiences in number must supplement text experiences.
10. Insight is not developed through mere repetition.
11. Diagnosis and remedial work need to be centered on the errors of individuals.
12. A maintenance program is especially necessary in the computational phases of arithmetic.

[36] Agnes G. Gunderson, "Nature and Amount of Arithmetic in Readers for Grades I and II," *Elementary School Journal,* Vol. 36, March, 1936, pp. 527-540.

[37] The first seven principles are adapted from the *Tentative Course of Study in Mathematics for Grades Four, Five and Six,* Curriculum Bulletin No. 161 (Fort Worth Public Schools, 1936).

[38] For an excellent statement on drill see B. R. Buckingham, "What Becomes of Drill?" *Arithmetic in General Education* (New York, Teachers College, Bureau of Publications, Columbia University, 1941), pp. 196-224.

13. Arithmetic is a tool for establishing order, system, punctuality and accuracy.[39]

14. Solution of problems depends upon a background of understanding the situations involved.

VII. TRANSITIONAL PROGRAMS

Change must be gradual. For any one school system to change immediately and completely from the formal program of arithmetic to one which utilizes quantitative experiences as a basis would obviously be impractical. A number of developments indicate possible ways in which such changes can be made. In grades one and two, the types of number experiences which offer possibilities are clear.[40]

In grades three, four, five, and six there are a number of possibilities which can be used as transitional. One suggestion has been to utilize some units of activity or experience and some of subject-matter. Thus a unit on household accounts might be followed by a unit on percentage. Another suggestion has been to develop a series of units of experiences which yields certain definite arithmetical learnings, such as in fractions. A third suggestion has been to utilize number experiences which occur in the social-studies and science units. It is impossible to determine which types will ultimately become the most usable.

A more complete understanding of the similarities and differences in the three types can be gained from the following illustrations.

Combining activity and subject-matter units. The first type, a combination of activity and subject-matter units, is found in the Texas Course of Study for Elementary Schools.[41] In the list of units for grades one through six it is easy to see which are subject-matter units.

First year:

Playing number games which appeal to the senses
Playing counting games
Telling time
Building a doll house
Building a community
Operating a grocery
Making my little word book in arithmetic

Second year:

Making a circus
Preparing for our Christmas party
Operating our post-office
Valentine's day
Caring for pets
Developing simple forms and subtraction

[39] See Herbert F. Spitzer, *The Teaching of Arithmetic* (Boston, Houghton, Mifflin Company, 1948), p. 23 ff.

[40] See experiences previously mentioned or any good recent course of study.

[41] Texas State Department of Education, *Tentative Course of Study for Years One Through Six* (Austin, Texas, 1936), Bulletin 359, Vol. 12, No. 7, pp. 514-516.

Having a circle party
Making my treasure house of number stories

Third year:

Making lemonade
Checking progress
Operating a gift shop
Living on the farm
Making a wild-flower garden
Having a wild-flower show
Making a drill book in arithmetic

Fourth year:

Keeping a budget
Racing in mathematics
Operating a savings bank
Making a Texas flag
Building a walk
Giving remedial work in difficult multiplication and division combinations
Developing the meaning of simple fractions
Presenting division
Making my book of original problems in arithmetic

Fifth year:

Evaluating communication
Mastering Mr. Zero
Giving remedial work in fractions
Reading meters
Appreciating mathematical forms in everyday life
Mastering division
Reading and interpreting graphs
Building my vocabulary in arithmetic

Sixth year:

Keeping household accounts
Computing and comparing costs of various types of transportation
Measuring volumes
Paying rent for the use of money
Planning my personal budget
Being thrifty in buying
Knowing how to use percentage
Making my drill book in decimals
Discovering how mathematics functions in the business world

Planned experiences to yield definite learnings. The second type of unit is best represented by the work of Charlotte Mapes and Henry Harap.[42] In fractions they have developed a series of six units:

1. A candy sale
2. Plans for Mothers' party

[42] Charlotte Mapes and Henry Harap, *Six Activity Units in Fractions,* Curriculum Laboratory Bulletin No. 33 (Nashville, Tenn., George Peabody College for Teachers, December 1, 1933), p. 9.
Eight Activity Units in Decimals, Curriculum Laboratory Bulletin No. 38 (Nashville, Tenn., George Peabody College for Teachers, May 1, 1935), p. 34.

3. Planning baskets for two needy families
4. Preparing a luncheon for the first grade
5. Making a quilt for a children's hospital
6. Serving a teachers' luncheon

Additional units in decimals were developed around:

1. The school bank
2. Keeping spelling records
3. Taking part in the community fund drive
4. Using milk
5. The school fund
6. Making and selling glazed apples
7. Making presents for Mother
8. Making a garden

These units were based on socially real situations and were selected because they were rich in the application of fractions or decimals. Most programs in fractions provide for mastery in logical order of increasing difficulty. These units, however, presented those situations in random order. The surprising result of their experiment with an experimental and control group of pupils was the verified conclusion that (1) the presentation in random order did not hinder the learning processes and that (2) the number of times that a step was repeated had little to do with the degree with which it was mastered.

One danger lies in the immediate acceptance of their findings. The group of pupils with which they were dealing was somewhat mentally above the average of those found in the usual school situation. Whether or not the slower types of pupils could learn the processes presented in a random order in a real situation must be discovered. This exception in no way invalidates their method of approach. There could be carefully developed units of experience which provide for logical order presentations if necessary.

Utilizing opportunities for number experiences. The third approach is best illustrated by the Fort Worth Course of Study.[43] In this course the social-studies and science units have been carefully scrutinized by experienced teachers and the opportunities for quantitative thinking listed in detail. The teacher must assume much more of the responsibility for the selection and guidance of quantitative experiences than in either of the other two methods of approach.

QUANTITATIVE THINKING SUGGESTIONS[44]

GRADE FOUR—SOCIAL SCIENCE

1. Age and history of Fort Worth
   (1) Read and write the dates 1849 and 1936.
   (2) How many years have elapsed between these dates?

[43] *Tentative Course of Study in Mathematics for Grades Four, Five and Six,* Curriculum Bulletin No. 161 (Fort Worth, Texas, Fort Worth Public Schools, 1936).

[44] *Ibid.,* adapted.

2. Food
   (1) Compare the manner in which the early pioneers obtained their food with the way in which we obtain ours to-day. Show the difference in the cost of producing the following foods then and now: meats, vegetables, bread, sweets, and fruits.
   (2) Compare the cost of the lunch a pioneer boy or girl would take to school with the cost of yours to-day.
   (3) Make up a menu card showing the foods and prices of to-day.
   (4) Figure and check the cost of your food tray in the lunchroom to-day. See that the change is correct.
   (5) Plan a balanced menu, and figure the cost of food for a class picnic.

3. Clothing
   (1) Show how the early pioneers obtained their clothing. How do we obtain ours? Compare the cost.
   (2) Figure the cost involved in the manufacture of a cotton dress.
   (3) Find the cost of clothing for a boy and a girl from newspaper ads.

4. Shelter
   (1) Explain how the early pioneers built their homes. Compare with the cost of building a house now.
   (2) Explain why it costs more to build a house now than it did in the time of the early settlers by showing:
      (*a*) Cost of building materials
      (*b*) Cost of labor

5. Early transportation
   (1) Our longest stage line was from Fort Worth to Yuma, Arizona, a distance of 1,560 miles. Traveling at the rate of 9 miles per hour, how long would it take a stage coach to make the trip?

6. Age
   (1) Develop the conception of the meaning of a century by comparing your age with your father's age and your grandfather's age.

7. Size
   (1) Compare present-day Egypt with Texas in the following ways:
      (*a*) Number of square miles
      (*b*) Number of acres
      (*c*) Population per square mile
   (2) Compare the population of the most important cities in Egypt with the most important cities in Texas.

8. Agriculture
   (1) Compare farms in Egypt with farms in Texas in size, in manner of cultivating, and in cost of farming machinery.

9. Age
   (1) Phoenicia came into history proper about 1600 B.C. Find out how many centuries have elapsed since that time.

10. Money
   (1) Find out what the Phoenicians first used for money in carrying on trade. Explain how their exchanges were made. Do countries use barter in trading to-day?

11. Size
    (1) Compare the size of Amsterdam, Rotterdam, and The Hague with the size of Fort Worth.
    (2) Determine the number of acres of land the Dutch have taken from the sea.

Grade Five—Science

1. Uses of electric power
    (1) List the number of watts used by electrical appliances in the home. Compute the cost of operating each for one hour at 10 cents per kilowatt hour.

2. Simple machines
    (1) Compare the amount of dirt picked up by a power shovel with the amount picked up by a man with a pick and shovel. Determine how many men would be needed to do the work of the power shovel.
    (2) Make a chart to show how the use of machines has shortened working hours.

3. The changing earth
    (1) Find the amount of silt carried annually from the uplands of the Mississippi River to the Gulf of Mexico.
    (2) Tell about the size, cost, and purpose of such projects as Boulder Dam, Coolidge Dam, Hoover Dam, and the Tennessee Valley.

4. Exploring the universe
    (1) Find out what portion of the sun's heat reaches us.

Grade Six—Social Science

1. Communication
    (1) Compare day rates, evening rates, and night rates. Discuss the reasons for these different rates.
    (2) Compare full-rate telegrams, day letters, and night letters as to the number of words allowed and the rates charged.
    (3) Count the number of countries from which the news in the morning paper was gathered. Locate these countries on a map and determine how far from us these countries are.

2. Our food needs
    (1) Keep a simple account of the amount of money spent by your family for food for a period of one week; find the average amount spent per day, per person, etc. Discuss bills, statements, writing checks, and filing receipts.
    (2) Look in the pantry and find out how much jelly, how many preserves, canned fruits, vegetables, and meats your mother has put up and stored there. If possible, compare the costs with store prices. Place a value on the entire stock using store prices.
    (3) What are some of the expenses a farmer has in producing milk?

3. The industries of Fort Worth
    (1) Visit one of our large bakeries or flour mills and find out about the daily output, amount of materials used, cost of equipment, number of employees, etc.

4. Texas trades with the rest of the world
   (1) Find out where Texans get their coffee, tea, bananas, etc. Compute the distances traveled, the costs of production and transportation.

A suggested program. The most practical type of program would be for a system to analyze its present situation carefully. If the program is limited to drill and written problems, certain studies should be made. Teachers should list the opportunities that occur in the classroom for utilizing number. The other subjects should be carefully studied to see where and how they use number. Units of real experiences should be planned which would yield opportunities for building a basis for insight.

This type of program in which teachers gradually introduce new and vital experiences should be of more value than trying to overthrow everything. Our textbooks are needed, and classroom experiences are needed; they both make up a program. It is a problem of getting a balance that will result in child growth. Actually, when the Fort Worth program is studied, it is obvious that if it were taken alone, it would be as unbalanced as the older drill programs. Though, if unbalance were necessary, this way is probably preferable.

We need many experiences as a background for developing insight. We need intelligent drill. We need opportunities to do quantitative thinking (of the type represented by the Fort Worth course and the social-studies selection). These all enter into the modern arithmetic program.

VIII. IMPROVING PROBLEM-SOLVING

Difficulties in problem-solving. The main difficulty is that pupils are required to solve only problems printed in a textbook. The first difficulty is that in many cases the problem is not understood; it means little or nothing to the pupil.

The second difficulty is in the selection of the method of procedure for the solution of the problem. If real or life problems were used, the difficulty of understanding would to a large extent be eliminated. The changes which are taking place in the curriculum are in the direction of utilizing opportunities for quantitative thinking which occur in the regular work of the classroom. The examples given in the first part of the chapter show that there are numerous possibilities for utilizing actual data for problems rather than page after page of unrelated problems.

The research available in problem-solving, and it is plentiful, deals with the textbook type of problem rather than with real problems. This fact must be considered in reading the sections that follow on the analysis of skills and types of errors. Much improvement in texts is taking place in the method in which verbal problems are presented. Instead of a page of unrelated problems, the page contains problems which are related as to meaning. Instead of problems unrelated and foreign to the experiences

of children, problems are dealing more with objects and concepts within the experiences of children. However, much more can be done than has been done to date.

Some of the difficulty with problem-solving lies in the tremendous load which we expect pupils to carry. A study by Scott [45] showed that the number of problems in three texts for fourth grade varied from 389 to 735. Another study by Janes [46] presented the number of situations dealt with in the problems of four arithmetic series. The number of totally different situations ranged from 339 to 833, and the total phases of the situations ranged from 1,458 to 6,651. Dexter [47] analyzed one arithmetic series and found 649 problems she judged as purely artificial, 974 as possible but improbable, and seven as representing a real situation. This study makes the need of careful planning and selection on the part of the teacher very apparent. Sutherland [48] showed that thirty-eight thought patterns existed in one-step problems. No wonder youngsters sometimes have a few difficulties with understanding the problems.

Analysis of skills. If the skills required to do problems are understood, the teacher may be of more help to the pupil. The successful solution of textbook problems requires these abilities:

1. Ability to read
   a. Understanding the vocabulary
   b. Having sufficient experiences to obtain meaning from the written form
2. Ability to identify the necessary processes
3. Ability to perform the necessary operations
4. Ability to supply needed facts
5. Ability to determine whether the answer is reasonable
6. Ability to understand quantitative relations implied in terms used, such as *gain*

Analysis of errors. Studies have shown that about three fifths of the mistakes are due to misunderstanding of the problem, one fifth to errors in processes, and one fifth undetermined. It has shown definitely that much misunderstanding disappeared when problems were based on experiences.[49]

Types of errors vary so from problem to problem that analysis is more

[45] F. B. Knight, "A Report of Four Studies in Arithmetic," *Journal of Educational Research*, Vol. 30, January, 1937, pp. 325-340.

[46] Grace E. Janes, "A Study of the Isolated Problems of Four Arithmetic Text Series," *Educational Method*, Vol. 16, January, 1937, pp. 198-199.

[47] Clara E. Dexter, "Analysis of Written Problems in a Recent Arithmetic Series," *Education*, Vol. 65, April, 1945, pp. 488-490.

[48] Ethel Sutherland, "One-Step Problem Patterns and Their Relation to Problem Solving in Elementary Arithmetic," *Teachers College Record*, Vol. 49, April, 1948, pp. 192-193, Abstract of Contributions to Education, No. 925.

[49] Helen M. White, "Does Experience in the Situation Involved Affect the Solving of a Problem?" *Education*, Vol. 54, April, 1934, pp. 451-455.

W. J. Lyda, "Direct, Practical Experiences in Mathematics in Solving Realistic Verbal 'Reasoning' Problems in Arithmetic," *Mathematics Teacher*, Vol. 10, April, 1917, pp. 166-167.

difficult. There are three ways to analyze a pupil's errors—analysis of written work, listening to the pupil work the problem aloud, and constructing exercises to measure certain skills. Analysis of written work yields many errors. Work of pupils often shows selection of wrong process or errors in calculation. In many problems the answers will give cues to mistakes. The paper of T.S., which is reported later in this chapter, gives an indication of what can be done by this method. If the written work does not yield the error, have the pupil "think out loud" while he is working. This method makes it possible to locate immediately fallacies in work. Type exercises offer an extremely valuable approach. Brueckner [50] offers examples for the teacher in the construction of such exercises as:

Ability to name processes
Knowledge of vocabulary
Reading exercises
Find the missing facts
Estimating answers to problems

It should be remembered that each problem presents a different situation to the child, many times one with which he is totally unfamiliar. Too much emphasis has been placed by teachers on seeing that pupils got answers to the problems. The result of such practice has been that pupils have become concerned only with the answer and the teachers hear continuously "What do I do—add?" Emphasis should be placed on the understanding rather than the answer.

Schaaf [51] points out that to improve problem solving "What is required is insight, meaning, transfer, synthesis, and experience." He suggests continued emphasis on:

1. Understanding numbers and number relations and the rationalization of operations and processes
2. Understanding the mathematical relationships involved in a problem situation
3. Understanding the essence of a problem situation
4. Understanding the vocabulary used in the problem
5. Understanding the relevance of data
6. Recognizing the arithmetical operations
7. Analyzing two-step problems
8. Estimating the answer

A change of emphasis to problems that deal with things children understand and to experiences which occur in the classroom should yield greatly improved work in quantitative thinking on the part of elementary-school children.

[50] L. J. Brueckner, *Diagnostic and Remedial Teaching in Arithmetic* (Philadelphia, J. C. Winston Company, 1930), pp. 308-331.

[51] William L. Schaaf, "A Realistic Approach to Problem Solving in Arithmetic," *Elementary School Journal*, Vol. 46, May, 1946, pp. 494-497.

IX. DIAGNOSTIC AND REMEDIAL PROCEDURES

The need. The acceptance of actual experiences as an aid in the development of quantitative thinking and understanding does not by any means imply that all of the research which has been done in the field of arithmetic will be thrown overboard and we will start anew. Much of the research is valuable under any type of arithmetical program of instruction. Some reinterpretations, perhaps, may be needed.

Detailed analyses have been made of the various arithmetic skills. In many cases these have been carried to an absurd extent. Absurd, if it is expected that the child will learn through understanding the meaning of the vast number of specifics thus resulting. Many such analyses were made because it was felt that if enough drill was given on all phases of difficulty, learning would result. Essentially it represents a basic difference between the "insight" and "drill" theories.

However, much information comes from analyses which is useful. There is much that is known concerning the various processes and the ways in which children handle those processes, and unless the teacher is familiar with these findings, she cannot adequately guide the pupil's learning. In arithmetic, as in no other field in the elementary school, the teacher can study the work of individuals and find the types of difficulties which they have.

Errors of individuals must be known. The principal errors in computation are due to two causes: first, lack of knowledge of the fundamental combinations; second, lack of knowledge of the processes involved. The teacher should know which types of errors the pupils are making. The first can be corrected by motivating the pupil so that the combinations are learned.

Errors in processes can be corrected by the teacher when she knows what errors are being made and then by reteaching those specific points. This statement seems trite, but too often the teacher spends no time in an analysis of the mistakes of individual pupils. Much of the time spent in correcting arithmetic papers is entirely wasted. The careful diagnosis of the errors made on one paper and the correction of those errors with the child are worth the mere correction of a thousand papers. Pupils are passed from one teacher to another, from one grade to another with minor errors in processes persisting. These difficulties could be corrected within a few minutes, but no teacher has ever given time to that child to find out what mistakes he is making. Class instruction is well and good, but individual errors can only be corrected by working with that individual on those specific errors which he makes.

Queer habits. The faulty habits of pupils are numerous and unique. One pupil in the sixth grade who was having much difficulty in arithmetic, upon diagnosis, was found to be writing the number in the answer which should have been carried and carrying the number which should

have been part of the sum. Thus if the sum of a column was 28, he placed the 2 in the answer and carried the 8. For six semesters he had been making this same error without any of his six teachers taking time to find out what his difficulty was. Such teaching is inexcusable.

A unique method of adding was used by a high-school girl who had been sick and out of school when addition was taught. She mentally changed all the numbers in a column to one number, such as sixes, then counted the number of sixes and multiplied.

An analysis. The case of T. S. furnishes an excellent example of the types of analyses which are needed. T. S. was a girl in 6A with an arithmetic computational ability of about 4.6. The following analysis of her test paper shows clearly how a short time spent on individual instruction directed toward the correction of her specific difficulties, resulted in great improvement on her part: [52]

T. S. had the first 11 problems of the Modern School Achievement Test-Arithmetic Computation correct. These consisted of addition, subtraction, and multiplication problems. Problems 12, 16, and 20, which were long column addition problems, were missed. An inspection of the work did not reveal where the girl was having difficulty, but on consultation it was found that she was trying to carry from the previous column until she reached the top of the column. This procedure resulted in forgetting and many mistakes. Problem 13, which was $\frac{1}{3}$ of $576 = ?$ was omitted. She stated that she did not know what "of" meant, which difficulty was immediately corrected. Problems 14 and 15, short-division and multiplication problems, were missed through carelessness. Problem 17, addition with only one fraction, was correct. Problem 18, subtraction of mixed numbers, was wrong. She did not know how to subtract fractions. An analysis of problems 19, 22, and 23 in division showed lack of ability to place the answer and to handle zeros in the answers. Errors in problems 26 and 31 indicated that T. S. did not know how to handle the fraction in multiplication when the problem was written as

$$\begin{array}{r} 452 \\ \times\ 2\frac{1}{2} \\ \hline \end{array}$$

She did not place decimal points correctly in multiplication of decimals.

Too often the arithmetic period consists of pupils' working page after page in the text. No attention is paid to the types of errors pupils are making. Instead problems should be presented in which a given skill is required. Then the papers of pupils who make persistent mistakes can be analyzed for errors. On the basis of this diagnosis a corrective program can be developed with *each* child. Often the kind of error which the child is making is not apparent from the written paper. In such cases if the child works the problem orally for the teacher, the type of error is usually immediately clear.

Speed? Speed does not make for accuracy. Accuracy makes for speed. The use of speed drills on number combinations as a means to develop accuracy is worse than useless. Learning is the result of using the com-

[52] J. Murray Lee, *A Guide to Measurement in Secondary Schools* (New York, Appleton-Century-Crofts, Inc., 1936), pp. 293-294.

binations in a variety of situations. The mental attitude of haste with insufficiently learned material is actually a detriment to learning. It not only causes learning difficulties but causes personality disintegrations.

Most frequent errors. There have been numerous studies of the errors which pupils make in their work. If one is interested, there are several helpful references[53] which are much more comprehensive than this limited treatment. A list of the most frequent errors which pupils may be expected to make in each process may be of some help. Only the eight or ten most frequently occurring errors are listed, but they include a very large percentage of the total errors made.

TYPES OF ERRORS PUPILS MOST FREQUENTLY MAKE

Addition[54]—Errors in:

1. Combinations
2. Counting
3. Adding carried number last
4. Forgetting to add carried number
5. Retracing work partly done
6. Adding carried number irregularly
7. Writing number to be carried
8. Carrying wrong number
9. Using irregular procedure
10. Grouping numbers

Subtraction—Errors in:

1. Combinations
2. Not allowing for having borrowed
3. Counting
4. Zeros in minuend
5. Saying example backwards
6. Subtracting minuend from subtrahend
7. Failing to borrow, giving zero as an answer
8. Adding instead of subtracting

Multiplication—Errors in:

1. Combinations
2. Adding carried number
3. Writing rows of zeros
4. Addition
5. Carrying wrong number
6. Forgetting to carry
7. Using multiplicand as multiplier
8. Zero combinations when zero is multiplier
9. Procedure when zero was multiplier
10. Using wrong process

[53] Brueckner, *op. cit.* Also "Diagnosis in Arithmetic," *Thirty-Fourth Yearbook*, National Society for the Study of Education (Bloomington, Ill., Public School Publishing Co., 1935), pp. 269-302.

G. T. Buswell and Lenore John, *Diagnostic Studies in Arithmetic*, Supplementary Educational Monographs, No. 27 (Chicago, University of Chicago, 1926).

[54] Adapted from Buswell and John, *op. cit.*, pp. 136-139.

Division—Errors in:

1. Division combinations
2. Subtraction
3. Multiplication
4. Leaving remainder larger than divisor
5. Finding quotient by trial multiplication
6. Neglecting to use remainder within example
7. Omitting zero resulting from another digit
8. Omitting digit or zero in dividend
9. Using wrong operation
10. Counting to get quotient

Fractions [55]—Errors in:

1. Combinations
2. Not understanding the process involved
3. Reducing fractions to lowest terms
4. Changing improper fractions to whole or mixed numbers
5. Changing mixed numbers to improper fractions in multiplication and division
6. Borrowing in subtraction
7. Handling several fractions in one problem

Decimals—Errors in:

1. Concepts of the numerical values of decimals
2. Placement of the decimal point
3. Borrowing due to difficulties involving zero or implied zeros
4. Zero difficulties appearing in division
5. Four fundamental processes

Percentage—Errors in:

1. Changing from decimals to per cents
2. Changing form—per cent to decimals
3. Changing form—fractions
4. Finding per cent of a number adds % sign to answer
5. Finding what per cent one number is of another
6. Finding numbers when the per cent is given

This list has only general value. It furnishes some idea of the errors the class will probably make. The fact that special attention is given to these difficulties in class will not substitute for careful analysis of the work of individual students. The total number of errors which the class makes can only be cut down by decreasing the number of errors each individual makes. The number of errors each individual makes can only be decreased by eliminating his specific errors. Obviously, there can be no substitute for individual diagnosis.

Remedial material. There is considerable remedial material of various types available. In some cases this material is planned for use in a class maintenance program, such as the *Lee Maintenance Drills and Tests in*

[55] Adapted from Brueckner (1930), *op. cit.*, pp. 215-257.

Arithmetic.[56] There are twenty drills and twenty tests for each grade. The drill was given at the beginning of the week and the test at the end. The test covered the same processes as the drill, so direct improvement was noted.

It is possible to develop a diagnostic chart, for each process keeps the same number throughout all the drills and tests. Every time a problem is missed, the pupil checks it under the number of the problem. It is not long until the processes which cause difficulty are apparent.

A teacher should be able to determine the types of errors individuals are making and then can give them prepared drill to remedy their special errors.

Suggested Learning Experiences

1. Select a unit of work in social studies or science on a given grade level and list quantitative experiences which could develop from the unit (see suggestions from Fort Worth course of study).
2. List three questions in arithmetic to which you want answers. Skim the summaries of research listed in the bibliography to see if research has provided answers to your questions.
3. Analyze a child's test paper for the types of errors which were made.
4. Briefly summarize Brownell's contributions to the understanding of the development of number concepts in young children.
5. Compare two recent series of arithmetic texts to note the differences in grade placement of the principal topics.
6. Select one process and show how its development is "spread" over a period of time in both series.
7. On page 463 there are three suggestions for teachers to make studies of their own pupils. Make one such study.
8. Prepare a unit based on real situations which is rich in number experiences. The work of Mapes and Harap should be helpful.

Selected References

A. *General References*

Association for Childhood Education, *This is Arithmetic* (Washington, D. C., 1201 Sixteenth St., N. W., 1945). This excellent bulletin contains much of value for teachers.

Brownell, William A., "A Critique of the Committee of Seven's Investigations on the Grade Placement of Arithmetic Topics," *Elementary School Journal,* Vol. 38, March, 1938, pp. 495-508. An excellent questioning of the Committee of Seven's recommendations.

———, "Two Kinds of Learning in Arithmetic," *Journal of Educational Research,* Vol. 31, May, 1938, pp. 656-664. Clearly points out conflicts due to "learning by repetition" and "learning by insight."

Brueckner, Leo J., "The Development of Ability in Arithmetic," *Thirty-Eighth Yearbook,* Part I, of the National Society for the Study of Education (Bloomington, Ill., Public School Publishing Co., 1939). A valuable general statement.

———, "Diagnosis in Arithmetic," *Thirty-Fourth Yearbook* of the National Society for the Study of Education (Bloomington, Ill., Public School Publishing Co., 1935),

[56] By J. Murray Lee and Dorris May Lee, *Lee Maintenance Drills and Tests in* Arithmetic (Los Angeles, Southern California School Book Depository, 1930, 1943). Books for grades seven and eight are available.

pp. 269-302. The best available brief summary of the problem of diagnosis in arithmetic.

———, *Diagnostic and Remedial Teaching in Arithmetic* (Philadelphia, John C. Winston Company, 1930). The most comprehensive treatment of diagnosis in arithmetic. Contains summaries of the most frequent errors.

———, and GROSSNICKLE, F. E., *How To Make Arithmetic Meaningful* (Philadelphia, John C. Winston Company, 1947), 513 pp. Of marked value for teaching. An excellent chapter on individual differences.

BUCKINGHAM, Burdette R., *Elementary Arithmetic, Its Meaning and Practice* (Boston, Ginn and Company, 1947), 744 pp. A scholarly source book in arithmetic for the teacher. Helps to supply "meaning" to arithmetic.

BUSWELL, G. T., "Deferred Arithmetic," *The Mathematics Teacher*, Vol. 31, May, 1938, pp. 195-200. Points out some essentials to be considered relative to grade placement.

FERNALD, Grace M., *Remedial Techniques in Basic School Subjects* (New York, McGraw-Hill Book Company, 1943), 349 pp. Especially helpful for teachers in need of assistance with remedial cases.

GROSSNICKLE, Foster E., "Appraising the Program for Teaching Division," *Sixteenth Yearbook* of the Department of Elementary School Principals (Washington, D. C., National Education Association, 1937), pp. 361-368. A summary of previous work of the author.

JOHNSON, J. T., "What Do We Mean by Meaning in Arithmetic," *Mathematics Teacher*, Vol. 41, December, 1948, pp. 362-367. A good article somewhat clarifying the discussion of meaning in arithmetic.

KLAPPER, Paul, *The Teaching of Arithmetic*, rev. ed. (New York, Appleton-Century-Crofts, Inc., 1931). A general treatment of the teaching of arithmetic.

MORTON, Robert Lee, *Teaching Arithmetic in the Elementary School*, Vol. I, *Primary Grades;* Vol. II, *Intermediate Grades;* Vol. III, *Upper Grades* (New York, Silver Burdett and Company, 1937, 1938, 1939). Three excellent and comprehensive volumes. Especially valuable for answering the teacher's questions in computation.

National Council of Teachers of Mathematics, *The Teaching of Arithmetic, Tenth Yearbook* (New York, Bureau of Publications, Teachers College, Columbia University, 1935). Contains a number of outstanding articles. One of the most important references.

———, *Arithmetic in General Education, Sixteenth Yearbook* (New York, Bureau of Publications, Teachers College, Columbia University, 1941), 335 pp. This yearbook is the product of the National Council's Committee on Arithmetic. It is a must in the field of arithmetic. The chapters on early grades, social phases, enrichment drill, evaluation, and psychology of learning are especially valuable.

———, *A Source Book of Mathematical Applications, Seventeenth Yearbook* (New York, Bureau of Publications, Teachers College, Columbia University, 1942), pp. 1-91. Contains specific applications of arithmetic to daily life. Especially valuable for the upper grade teacher.

———, *Multi-Sensory Aids in the Teaching of Mathematics, Eighteenth Yearbook* (New York, Bureau of Publications, Teachers College, Columbia University, 1945), 455 pp. Valuable for suggestions of enrichment materials.

———, *The Metric System of Weights and Measures, Twentieth Yearbook* (New York, Bureau of Publications, Teachers College, Columbia University, 1948), 303 pp. One of the most comprehensive treatments of the metric system available. Valuable to an upper grade teacher for historical background and current usage.

National Society for the Study of Education, *The Teaching of Arithmetic, Twenty-Ninth Yearbook* (Bloomington, Ill., Public School Publishing Co., 1930). One of the best references available. Should be familiar to all teachers of arithmetic.

ROSENQUIST, Lucy L., *Young Children Learn to Use Arithmetic* (Boston, Ginn and Company, 1949). Useful for first and second grade teachers; emphasizes discovering facts.

SMITH, David Eugene, and GINSBURG, Jekuthial, *Numbers and Numerals* (New York, Teachers College, Columbia University, 1937). A short account of the development of numbers.

SPITZER, Herbert F., *The Teaching of Arithmetic* (Boston, Houghton Mifflin Company, 1948), 397 pp. Contains many helpful ideas for the arithmetic teacher.

STERN, Catherine, *Children Discover Arithmetic* (New York, Harper and Brothers, 1949). Describes "structural" arithmetic. Of interest to primary teachers.

TAYLOR, E. H., and MILLS, C. N., *Arithmetic for Teacher-Training Classes*, 3rd ed. (New York, Henry Holt & Company, Inc., 1949). Contains much of value to the teacher.

WASHBURNE, Carleton, "The Work of the Committee of Seven on Grade Placement in Arithmetic," *Thirty-Eighth Yearbook*, Part I of the National Society for the Study of Education (Bloomington, Ill., Public School Publishing Co., 1939). The most complete treatment of the work of the Committee of Seven available, including criticisms.

WHEAT, H. G., *The Psychology and Teaching of Arithmetic* (Boston, D. C. Heath & Company, 1937). A recent treatment of the more mechanistic phases of the arithmetical program.

WHITE, Helen M., "Does Experience in the Situation Involved Affect the Solving of a Problem?" *Education*, Vol. 54, April, 1934, pp. 451-455. Experience in the situation is important.

WILEY, Roy DeVerl, "A Study of the Use of Arithmetic in the Elementary Schools of Santa Clara County, California," *Journal of Educational Research*, Vol. 36, January, 1943, pp. 353-365. An analysis of 2484 real problems arising in school. Contains an excellent bibliography on social uses.

———, "Functional Arithmetic: 1893-1940; A Review of the Typical Theoretical Discussion and the Theory to Which It Has Led," *Journal of Educational Psychology*, Vol. 33, February, 1942, pp. 105-117. An excellent summary of functional arithmetic.

WILSON, Guy M., "The Challenge of One Hundred Per Cent Accuracy in the Fundamentals of Arithmetic," *Educational Method*, Vol. 15, November, 1935, pp. 92-96. Presents his theory of complete mastery.

———, STONE, Mildred B., and DALRYMPLE, Charles O., *Teaching the New Arithmetic* (New York, McGraw-Hill Book Company, 1939). A most comprehensive treatment of arithmetic.

B. *Researches, Summaries, and Bibliographies*

BROWNELL, William A., "Frontiers of Educational Research: In Arithmetic," *Journal of Educational Research*, Vol. 40, January, 1947, pp. 373-380. A must for anyone planning research in arithmetic.

———, *The Development of Children's Number Ideas in the Primary Grades* (Chicago, University of Chicago Press, 1928). One of the best studies of beginning number concepts.

BUSWELL, G. T., and others, "Selected References in Arithmetic," *Elementary School Journal*, Vols. 34-50, November issues, 1933-1949. A selected bibliography appearing each year. Offers the best method of keeping up in the field.

———, and JUDD, C. H., Summary of *Educational Investigations Relating to Arithmetic* (Chicago, University of Chicago Press, 1925). Summaries of research prior to 1925.

———, and JOHN, Lenore, *Diagnostic Studies in Arithmetic* (Chicago, University of Chicago Press, 1926). An excellent series of studies of pupils' errors.

———, *The Vocabulary of Arithmetic*, Supplementary Educational Monographs, No. 38 (Chicago, University of Chicago Press, 1931). An excellent research study.

GAYIAN, Ruth Wood, *Education for Economic Competence in Grades I to VI* (New York, Bureau of Publications, Teachers College, Columbia University, 1942), 190 pp. Contributions to Education, No. 854. Contains excellent suggestions for arithmetic.

HARAP, Henry, and MAPES, Charlotte E., "Learning the Fundamentals in an Arithmetic Activity Curriculum," *Elementary School Journal*, Vol. 34, March, 1934, pp. 515-525.

———, "Learning the Decimals in an Arithmetic Activity Program," *Journal of Educational Research*, Vol. 29, May, 1936, pp. 686-693. Two articles showing how arithmetic work can develop during a unit.

JOHNSON, Harry C., "Problem Solving in Arithmetic: A Review of the Literature," *Elementary School Journal*, Vol. 44, March, April, 1944, pp. 396-403, 476-482. Summary of research.

KNIPP, Minnie B., "An Investigation of Experimental Studies Which Compare Methods of Teaching Arithmetic," *Journal of Experimental Education*, Vol. 13, September, 1944, pp. 23-30. Analyzes 64 experiments between 1911 and 1940. Shows changes and trends.

KRAMER, Grace A., *The Effect of Certain Factors in the Verbal Arithmetic Problem upon Children's Success in the Solution* (Baltimore, Johns Hopkins Press, 1933). Summarizes previous research and reports an interesting research.

MACLATCHY, Josephine, "Number Abilities of First-Grade Children," *Childhood Education*, Vol. 11, May, 1935, pp. 344-347. An excellent article presenting the outstanding findings of research.

METTER, Harry L., "Trends in the Emphasis on Various Topics of Arithmetic Since 1860," *Elementary School Journal*, Vol. 34, June, 1934, pp. 767-775. Valuable to trace development of arithmetic.

MONROE, W. S., and ENGELHART, M. D., *Critical Summary of Research, Relating to the Teaching of Arithmetic*, University of Illinois, Bulletin No. 58 (1931). A summary of research through 1931.

POLKINGHORNE, Ada R., "Young Children and Fractions," *Childhood Education*, Vol. 11, May, 1935, pp. 354-358. A study of the development of the concept of fractions.

Review of Educational Research, See January, October, December, 1931; April, 1934; February, 1935; April, December, 1937; June, 1939; October, 1942; October, 1945; and October, 1948. Each issue summarizes the research for the previous three years.

RIESS, Anita, *Number Readiness in Research* (Chicago, Scott Foresman and Company, 1947). Excellent summary of research on number readiness.

RUSSELL, Ned M., "Arithmetical Concepts of Children," *Journal of Educational Research*, Vol. 29, May, 1936, pp. 647-663. A good article showing the development of number concepts in young children.

SMITH, Henry L., EATON, Merrill T., and DUGDALE, Kathleen, *One Hundred Fifty Years of Arithmetic Textbooks*, Bulletin of the School of Education, Vol. 21, No. 1 (Bloomington, Ind., Indiana University, January, 1945), 153 pp. An excellent account of detailed changes which have taken place since 1790.

VAN ENGEN, H., "A Summary of Research and Investigations and Their Implications for the Organization and Learning of Arithmetic," *Mathematics Teacher*, Vol. 41, October, 1948, pp. 260-265. Discusses six phases of research in arithmetic: meaning, the learning process, and method; problem solving, readiness, social uses, and miscellaneous study.

WHEAT, Harry G., *Studies in Arithmetic: A Summary of Master's Problems and Thesis Dealing with Subject of Arithmetic* (Morgantown, West Virginia, West Virginia University, 1945), 64 pp. Summarizes 43 studies.

12

Scientific Experiences: Developing Scientific Concepts

I. WHY SCIENTIFIC EXPERIENCES FOR THE ELEMENTARY CHILD?

Social implications. Man's greatest problem is the control, for the welfare of all, of natural forces and those which he has put into operation. These man-made forces created as a result of scientific development have only partially contributed to the common good. Schools have been principally concerned with a type of descriptive knowledge about the result of scientific development. The real concern should be directed to science as a way of thinking and a force which may or may not contribute to social good, depending upon control. This primary function of science should receive considerable stress even in the elementary school.

Differences between effective programs of science and relatively ineffective ones depend upon the effectiveness with which the social implications of science are developed. Relations between science and man need to be the center of the instructional program as contrasted to increased information about scientific phenomena. The acceptance of this point of view means that the science program of the elementary school will be concerned with the contribution of science to the:

Change in man's natural environment
Change in man's social environment
Change in man's intellectual life [1]

The internationalism of elementary science has been stressed by Craig.[2] He has shown how science can be used to develop international understanding through developing scientific thinking about people and through scientific knowledge which is international in scope. He suggests such centers of interest as "The Earth and Its Story," "Conditions Necessary to Life," "Interdependence of Life," "Migration," and "Variety of Life" as especially appropriate.

The personal and social needs of boys and girls provide many possibilities for the science program. The child can learn more about himself

[1] Adapted from J. C. Morrison, "A Generalist Looks at Science in the Elementary Schools," *Teachers College Record*, Vol. 37, January, 1936, pp. 282-289.

[2] Gerald S. Craig, "Science in the Elementary School," *Thirty-Sixth Yearbook* of the National Society for the Study of Education (Bloomington, Ill., Public School Publishing Co., 1937), pp. 177-184.

and his relations to others. One classification of needs is the one followed by the Educational Policies Commission: personal living, immediate personal-social relationships, social-civic relationships, and economic relationships. This point of view has been elaborated on in two reports [3] but not developed in detail for the elementary level. Here might be a most profitable lead to explore.

Development of concepts. Elementary science has too often been taught merely to satisfy curiosity, such as the former nature-study courses, or to yield certain scientific information. Then followed organized courses in science. Important concepts in science became the organizing factor of courses of study with the publication and acceptance of the point of view advocated in the *Thirty-First Yearbook* [4] of the National Society for the Study of Education. Illustrations of several courses organized around concepts are given in section VI.

Increasingly apparent is the improvement in practice of relating concepts to social consequences and utilizing experiences of children as a means of contributing to their conceptual development. A list of concepts to be developed, in the hands of a poor teacher, would become as factual as any formal course previously offered. Only too often is Dewey's condemnation of the science program justified: [5]

> How far is science taught in relation to its social consequences, actual and possible, if the resources which science puts at human disposal were utilized for general democratic social welfare? I know that very great improvements are being made, but I am afraid that science is still taught very largely as a separate and isolated subject and that there are still those, including many scientists themselves, who would think that that wonderful thing "pure" science would be contaminated if it were brought into connection with social practice. Yet without this connection, students are certainly getting very little intelligent understanding of the forces that are now making human society and that might remake it.

Teachers on the elementary level are becoming increasingly aware of opportunities to develop concepts through the use of scientific experiences. The increasing number of pertinent courses of study [6] and the significant texts [7] prepared for children of elementary age have been of the greatest help in this development.

[3] Progressive Education Association, *Science in General Education* (New York, Appleton-Century-Crofts, Inc., 1938).

National Committee on Science Teaching, *Redirecting Science Teaching in the Light of Personal-Social Needs,* American Council of Science Teachers (Washington, D. C., National Education Association, 1942).

[4] National Society for the Study of Education, *A Program for Science Teaching, Thirty-First Yearbook,* Part I (Bloomington, Ill., Public School Publishing Co., 1932).

[5] John Dewey, "The Challenge of Democracy to Education," *Progressive Education,* Vol. 14, February, 1937, pp. 82-83.

[6] See such state courses and materials as California, Florida, New York, North Carolina, Ohio, Oregon, Utah, and Washington, and city courses of Cleveland, Ohio; Fort Worth, Texas; Madison, Wisconsin; and Spokane, Washington.

[7] Such as W. L. Beauchamp and others, *Basic Studies in Science: Curriculum Foundation Series,* rev. ed. (Chicago, Scott, Foresman and Company, 1946).

Increased interests. Increased interests are another aim of elementary science. It is in this area that efforts seem to have been most successful. Children need only to be guided to develop further interests which have originated from their reaction to objects of life in their environment. Yet if broader and deeper interests were the criteria for evaluating the effectiveness of programs in science, there might be serious question as to the accomplishment. Only too often have present interests been exploited rather than further interests developed, or those already developed deepened.

A way of thinking. Science as a way of thinking, a method of problem-solving, is also of primary importance. Experiences which provide opportunities for accurate observation and the drawing of conclusions from sufficient evidence have a definite place in the elementary program. The scientific attitude is a gathering of evidence, evaluating the worth of the evidence, and the formulation of conclusions that can be altered should new data indicate such a need. Even elementary children can be taught that "Pep-you-up Breakfast Flakes" will not make one "a famous ball player." Superstition and its eradication through science teaching has been the subject of considerable study on the high-school level.[8] The elementary level has considerable unexplored possibilities for such work. Certainly one phase of the development of scientific attitude is the questioning and elimination of superstitions.

Attitudes too often develop from prejudices in the home or peer groups with little or no basis. Science experiences as well as social science experiences can contribute to developing a questioning, a searching for an explanation; a changing of one's ideas according to the evidence, a desire to examine the evidence.[9]

Growth in appreciation of life about him is another phase of the science program. As the child examines and discovers the wonders of his world,

---

Glenn O. Blough and Bertha M. Parker, *Basic Science Education Series* (Evanston, Illinois, Row, Peterson and Company, 1942-1946). A series of separate booklets.

H. A. Carpenter and others, *The Rainbow Readers* (Boston, Massachusetts, Allyn & Bacon, 1946).

Gerald S. Craig and others, *Our World of Science* (Boston, Ginn and Company, 1946).

G. W. Frasier and others, *The Scientific Living Series* (Syracuse, New York, L. W. Singer and Company, 1940).

Warren Knox and others, *The Wonderworld of Science* (New York, Charles Scribner's Sons, 1941).

[8] Especially noteworthy in this regard are the studies of Lundeen and Caldwell. See Otis W. Caldwell and G. E. Lundeen, *Experimental Study of Superstitions and Other Unfounded Beliefs as Related to Certain Units in General Science* (New York, Teachers College, Columbia University, 1932). Otis W. Caldwell, "Summary of Investigations Regarding Superstitions and other Unfounded Beliefs," *Science Education*, Vol. 20, February, 1936, pp. 1-4.

Roslind M. Zaph, "Relationships Between Belief in Superstitions and other Factors," *Journal of Educational Research*, Vol. 38, April, 1945, pp. 561-579.

[9] For a more complete discussion see National Society for the Study of Education, *Science Education in American Schools, Forty-Sixth Yearbook*, Part I (Chicago, University of Chicago Press, 1947), pp. 28-30, 62-63 and 166-180.

this appreciation will develop. Such appreciation is difficult to measure, to articulate, or to tell how to develop; but it is important.

Objectives of science education in grades one to twelve. Objectives for the elementary science program are developmental. Concepts, attitudes, and skills begin in early childhood. Instruction in the elementary school contributes to their development. The secondary school makes a still further contribution. It is of value then to study the list of objectives for science teaching for grades one to twelve, interpreting each one in light of the possibilities for the elementary school.

TYPES OF OBJECTIVES FOR SCIENCE TEACHING [10]

A. *Functional information* or *facts* about such matters as:
   1. Our universe—earth, sun, moon, stars, weather, and climate.
   2. Living things—plants and animals.
   3. The human body—structure, functions, and care.
   4. The nature of matter—elements, compounds, mixtures, chemical change, physical change, solids, liquids, gases.
   5. Energy—sources, types of energy, machines.
   6. Contributions of science to the life of our times—radio, telephone, telegraph, electric lights, motion picture, household appliances, and airplanes.

B. *Functional concepts,* such as:
   1. Space is vast.
   2. The earth is very old.
   3. All life has evolved from simpler forms.
   4. All matter is probably electrical in structure.

C. *Functional understanding of principles,* such as:
   1. All living things reproduce their kind.
   2. Changes in the seasons and differences in weather and climate depend largely upon the relation of the earth to the sun.
   3. Energy can be changed from one form to another.
   4. All matter is composed of single elements or combinations of elements.
   5. Living things in a given environment or locality are mutually interdependent.

D. *Instrumental skills,* such as ability to:
   1. Read science content with understanding and satisfaction.
   2. Perform fundamental operations with reasonable accuracy.
   3. Perform simple manipulatory activities with science equipment.
   4. Read maps, graphs, charts, and tables, and interpret them.
   5. Make accurate measurements, readings, titrations, etc.

E. *Problem-solving skills,* such as ability to:
   1. Sense a problem.
   2. Define the problem.
   3. Study the situation for all facts and clues bearing upon the problem.
   4. Make the best tentative explanations or hypotheses.
   5. Select the most likely hypothesis.
   6. Test the hypothesis by experimental or other means.
   7. Accept tentatively, or reject the hypothesis and test other hypotheses.
   8. Draw conclusions.

[10] *Ibid.,* pp. 28-29.

F. *Attitudes,* such as:
   1. Open-mindedness—willingness to consider new facts.
   2. Intellectual honesty—scientific integrity, unwillingness to compromise with truth as known.
   3. Suspended judgment—scientific control, withholding conclusions until all available facts are in, not generalizing from insufficient data.

G. *Appreciations,* such as:
   1. Appreciation of the contributions of scientists.
   2. Appreciation of basic cause-and-effect relationships.
   3. Sensitivity to possible uses and applications of science in personal relationships and disposition to use scientific knowledge and abilities in such relationships (attitude).

H. *Interests,* such as:
   1. Interest in some phase of science as a recreational activity or hobby.
   2. Interest in science as a field for a vocation.

In summary. Experiences in science then, on the elementary level, should result in: [11]

Understanding that science can change man's natural environment, his social environment, and his intellectual life
Broadening and developing certain scientific concepts and generalizations
Increasing the number and depth of interests
Developing the scientific method as a way of thinking, problem solving, critical thinking, reflective thinking

Children do progress in achieving these goals. There is some evidence that children's progress is a natural growth process and not due solely to science instruction.[12] Assuming that such is the case, objectives might be better stated in terms of a growing and developing process. Hill has done this well.[13]

Improving in ability to attack a problem and to come to a satisfactory conclusion in regard to the problem.

Becoming more and more responsible in making and carrying out plans.

Growing in ability to work with others on the problem in hand.

Becoming better able to observe and experiment carefully in working toward the solution of a problem.

Becoming better able to approach the solution of a problem with an open mind and yet be critical of personal ideas and of the ideas of others.

[11] Support is given to this point of view when the opinions of fifty-one science experts are studied. See David W. Russell, "How Fifty-One Well-Known Educators Answered a Questionnaire Concerning the Teaching of Science in the Elementary Grades," *School Science and Mathematics,* Vol. 38, November, 1938, pp. 907-921. For further discussion of purposes and objectives see Gerald S. Craig, *Science for the Elementary Teacher* (Boston, Ginn and Company, 1947), Chapter I and Part VI.

Science Education in American Schools, op. cit., Chapters II, III, V, VI and IX.

[12] Katherine E. Hill, "Trends in Science in Childhood Education as Indicated by Educational Research," *Science Education,* Vol. 32, October, 1948, pp. 251-254.

[13] *Ibid.,* p. 252

Gaining a progressively better understanding of such basic concepts as variety, change, adaptation, interrelationships, space, and time.

Gaining a feeling of security in, and an ability to more effectively make use of, the environment.

Experiences are the means by which the aims are attained. Only when these aims are continuously utilized as criteria for the selection and guidance of experience will their realization be possible. Two classes could have the same materials; one class might progress little toward the realization of the aims, whereas the other would gain much. The second teacher would use the materials and experiences as a means to develop definitely formulated aims, not as an end in themselves.

II. WHICH SCIENTIFIC CONCEPTS ARE VITAL TO CHILDREN?

There have been published several important lists of concepts which have significance for the planning of science experiences on the elementary level. The outstanding value of these concepts is in the selection and direction of experiences. The ultimate responsibility for the worth of the child's work rests with the teacher. There can be no "dodging" this obligation. Much of the justified criticism directed toward the activity program has been due to lack of teacher guidance in permitting unrelated and valueless experiences to occupy the time of the children. The list that has been most widely used in developing curriculums and materials is the one by the National Society for the Study of Education. Obviously many are not adaptable for the elementary school. The concepts which they recommend are: [14]

Principles and Generalizations in Science Classified According to Criteria for Selection

I. Concepts that greatly influence the thinking of individuals who learn their meaning and that have modified thinking in many fields outside of science
   1. The earth is very old as measured in terms of our units of time.
   2. The surface of the earth has not always had its present appearance and is constantly changing.
   3. Space is vast.
   4. The earth has been developed as a result of the action of natural forces.
   5. The sun is the original source of energy for the earth.
   6. The earth's position and relation to the sun and moon are of great importance to the life of the earth.
   7. All life has evolved from very simple forms.
   8. Species have survived because by adaptations and adjustments they have tended to become better fitted to the conditions under which they live.
   9. The physical environment has great influence, not only upon the instructional forms of life, but also upon society.

[14] *Thirty-First Yearbook* of the National Society for the Study of Education, pp. 135-141. Quoted by permission of the Society.

10. Man has modified plant and animal forms through a knowledge of methods found in nature.
11. Through interdependence of species and struggle for existence there tends to be maintained a balance among many forms of life.
12. Chemical and physical changes are manifestations of energy.

II. Concepts that conform to those goals (information, skills, and habits) in science that are important because of their function in establishing health, economy and safety in private and public life

1. Man has become an important determining factor in the environment of many forms of life. His continued existence and advancement are dependent upon his wide modification and control of the environment.
2. The earth has been developed as a result of the action of natural forces.
3. Species have survived because by adaptations and adjustments they have tended to become better fitted to the conditions under which they live.
4. The physical environment has great influence, not only upon the structural form of life, but also upon society.
5. Man has modified plant and animal forms through a knowledge of nature's methods.
6. There is a very great variety and range in the size, structure, and habits of organisms.
7. Through interdependence of species and struggle for existence there tends to be maintained a balance among the many forms of life.
8. Life is dependent upon certain materials and conditions.
9. All life comes from life.
10. Efficient living is dependent upon knowledge of the principles of health and sanitation.
11. The earth and its life are greatly affected by the ocean of air which completely surrounds it.
12. In industry and in the home man can accomplish more in less time by the use of machines.
13. Heredity is responsible for many of the differences between parents and offspring as well as the resemblances.

III. Concepts which conform to these facts, principles, generalizations, and hypotheses of science that are essential to the interpretation of the natural phenomena that commonly challenge children

1. There are fewer than one hundred elements.
2. Every substance is one of the following: (*a*) an element, (*b*) a chemical compound, (*c*) a mechanical mixture.
3. Light is indispensable to life. The phenomena that have been discovered concerning light and the applications that have been made are important to man's continued progress.
4. Sound is caused by waves that are produced by a vibrating body and that can affect the auditory nerves of the ear.
5. Gravitation is the attraction between bodies. It has profound influence upon the movements of astronomical bodies.
6. Any machine, no matter how complicated, may be analyzed into a few simple types.
7. The properties of the different elements depend upon the number and arrangement of the electrons and protons contained in their atoms.
8. All matter is probably electrical in structure.
9. The applications of electricity and magnetism in the home and industry have revolutionized the methods of living of many people.

Craig has regrouped the list under the headings of space, time, change, variety, adaptation, interrelationships and scientific attitudes. He points out that: [15]

The statements of the conceptions are not in themselves the goals of the instruction. They are not aphorisms or proverbs to be written on the blackboard or in a book to be memorized. Rather they are expressions of ideas that have been of great significance in man's past and undoubtedly will be in man's future. They should be in the mind of the teacher or the curriculum-maker and should assist in giving a perspective of values. Children should be allowed to live through experiences which will help them to gain increasing understanding of and control over these conceptions. In a sense, such a conception is never mastered or completed at any level of childhood or adulthood; for example, the student from primary school to research levels can continue to learn more about the great age of the earth. This conception as it emerges for the child will become of increasing value to him in interpreting events in the universe. In early childhood he may realize that the earth is a little older than his grandfather, and, a little later, that it was here before George Washington, Columbus, the vikings, or the Greeks. He may observe the action of weathering in the local region and in some small measure recognize the time involved. He may see how this action has been instrumental in developing soil; and later in the course of his education he may gain some appreciation of the long processes of change in other regions, the changes in the shape of the continent, the making and wearing down of great mountain systems, the great changes in the climates of the various regions of the earth, the story of the succession of life on the earth, and the continuous operation of natural forces. He may come to realize that the forces which have operated in the past are much the same as those that are operating today.

This description may serve to indicate that it is not the statement of the conception that should in any sense be considered the objective, but rather the building up of a background of ideas and experiences which are involved in the conception and which, in turn, make the conception understandable and acceptable to the learner as well as useful in interpreting new experiences. It is not memorization of facts that should be considered the goal but the growth of the individual along the lines of the profound truths of science.

Supplementing this list is a one by Robertson who presents a list of [16] "113 defensibly stated principles and subsidiary principles appropriate to serve as ultimate goals of science teaching in the elementary schools."

Another most important list, but originally published for a different purpose, is one compiled by the National Council of English Teachers. They asked leaders in some of the subject fields to list the outstanding concepts of their fields as a point of departure in integrating the experiences. The result is a list in *A Correlated Curriculum* [17] which can be utilized in selecting science experiences.

Concepts are developmental. The discussion of concepts in Chapter 9 was adequate to show the increasing development of concepts in children.

[15] Craig, 1947, *op. cit.*, pp. 8-9. By permission of Ginn and Company.

[16] Martin L. Robertson, "The Selection of Science Principles Suitable as Goals of Instruction in the Elementary Schools," *Science Education*, Vol. 19, February, April, 1935, pp. 1-4, 65-70.

[17] Ruth Mary Weeks, chairman, *A Correlated Curriculum*, a publication of the National Council of Teachers of English (New York, Appleton-Century-Crofts, Inc., 1936), pp. 14-16.

Children come to school with many science concepts. Some of these are accurate, others most inaccurate. Some represent observation only and some represent interpretation.

The best illustration of the kinds of concepts children have when they enter school deals with the moon. A study of these concepts would give a basis for beginning instruction. Each teacher can well use a modification of the technique with her class. Haupt,[18] in reporting the experiment, stated that, "No change in the wording of the concepts has been made; the statements are as made by the children. The classification is artificial in the sense that it emerged after the lessons. We did not know beforehand the categories under which the statements would fall. The only organization known to the children was that implied by the suggestion 'let's talk about the moon.'"

Concepts Depending Upon Observation Alone	Concepts That Go Beyond Observation
A	*B*
Surface and Composition:	
I never saw a face on the moon I see a face in the moon	There is no real face in the moon
	There are big holes in the moon Holes make the moon look as if it is a man
	The moon is made of rocks and mountains The moon is made of light weight stone
	Clouds cover the moon and make it look like a face in the moon
	The moon is filled with water There is no water on the moon, for the water would put the gases out
	The moon has no gravity. This gravity holds you down. It is like magic. Things would float along without gravity. If I jumped, and the gravity went away, I would just float around. They shot a new kind of bomb in the air and they can't find the bomb yet.
Size	
The moon is smaller than the earth	The moon is bigger than the earth
Motions	
The moon moves The moon goes higher and higher in the evening	The moon goes round the earth once a month (The child insisted upon placing a diagram on the blackboard of the moon revolving about the earth, explaining as she drew.)

[18] George W. Haupt, "First Grade Concepts of the Moon," *Science Education*, Vol. 32, October, 1948, pp. 258-262.

Concepts Depending Upon Observation Alone	Concepts That Go Beyond Observation
A	*B*
Moonlight	
None	The sun shines on the moon We see the sun shining on the moon
	The sun reflects on the moon The sun shines down on the little moon. Then this moon reflects the sunlight.
Phases	
Sometimes I see two moons; a finger nail moon and a round moon	Clouds cover the moon and make it different shapes.
The moon is not always round. It is like a banana sometimes. Real skinny.	I think that the sun reflects on that side of the moon. This makes it different shapes.
The moon looks like a finger nail. Sometimes the finger nail goes the other way.	We see the sunlight shining on the moon. Then the moon shows us different shapes.

III. INTEREST—WHAT RÔLE DOES IT PLAY IN SELECTING SCIENCE EXPERIENCES?

Interest of individual class. Science offers the richest possible experiences for boys and girls. In probably no other area in the elementary school is there the vital interest already developed and waiting to be utilized by the clever teacher. The necessity is not to stimulate but rather to guide the experiences so that they will increase the pupil's understandings and enjoyment of his environment. Implicit in this guiding process is the need to deal with materials and concepts that are suitable to the maturation level of the child. Only a careful study of children will reveal which ones are most effective at certain ages. Research has revealed considerable about interests, but most important to the individual teacher are the interests of the boys and girls of her class.

An embarrassment of riches is the problem in selecting science experiences rather than a dearth of materials. There are innumerable possibilities that could be used in the classroom. The teacher is faced with the task of selecting the most valuable. There are many aids to help in the process of selection, but in *most* schools the teacher is ultimately responsible for the determination of the experiences of her class. The course of study may offer many suggestions, available reading materials may be a factor, ultimate concepts to be developed and studies of children's interests should all contribute to providing a basis of selection. These sources supplemented by the interests and the understandings of her own pupils should enable the teacher to guide her children through experiences which have great value for them. Scientific concepts and studies of scien-

tific interests of children supplement one another in the final determination of experiences.

Evidence on science interests. One difficulty is that science interests in youngsters are relatively unstable. Fitzpatrick, through an analysis of the testimony of pupils as to interests, has shown that only 30 to 40 per cent are reasonably consistent and reliable.[19]

Another difficulty has been the conflicting evidence when one study of interest is compared with another.[20] Variations occur which may be due to differences in methods, time, and preference of the one making the study. Probably the outstanding implication from numerous studies is a verification of the hypothesis presented in Chapter 4 that the environment is the principal influencing factor in the acquisition of interests.

There are some general statements concerning science interests of elementary pupils which are justifiable from the many studies dealing with the problem. These are:

1. Interests are influenced by seasonal changes.
2. The child is primarily interested in himself and his social relations and secondarily in objects in his environment.
3. Processes involving manipulation and investigation seem to stimulate interest, indicating that different methods using similar materials would result in a different degree of interest.
4. There are some sex differences in interest, for instance boys are more interested in mechanics than are girls. These differences can be partially accounted for by differences in the environment. Boys' interests in science are more intense than girls'.
5. Young children are primarily concerned with "How?" and "Why?"
6. Age differences are noticeable. For instance, young children are most interested in plants and animals, whereas adolescents become interested in biological sciences.
7. Individual teachers should make studies of the science interests of their pupils which can be used as points of departure in providing experiences.
8. Children want help in interpreting the facts and situations they observe.

IV. BASIC GUIDING PRINCIPLES

The same general principles apply in guiding science experiences that apply in guiding experiences in all areas of the elementary school. However, in addition there is a list of principles especially adapted to science which is sufficiently valuable, so that every teacher working in this area

[19] F. L. Fitzpatrick, "Pupil Testimony Concerning Their Science Interests," *Teachers College Record*, Vol. 38, February, 1937, pp. 381-388.

[20] For further evaluations of interest studies see:

W. C. Croxton, *Science in the Elementary School* (New York, McGraw-Hill Book Company, 1937), pp. 92-98.

F. L. Fitzpatrick, *Science Interests* (New York, Teachers College, Columbia University, 1936).

F. D. Curtis, *Third Digest of Investigations in the Teaching of Science* (Philadelphia, Blakiston Company, 1939). (See also *First Digest*, 1926, *Second Digest*, 1931).

N. Eldred Bingham and Joe Young West, "Aims and Purposes of Science Teaching," *Review of Educational Research*, Vol. 18, October, 1948, pp. 297-298.

should be familiar with it. J. C. Parker developed and presented this list in the Fort Worth course of study in elementary science.

SIGNIFICANT BASIC PRINCIPLES [21]

1. Science involves looking at the common acts and facts of everyday life in a new way—the way of experimental thinking.

2. The science program must accord stress to the social and personal significance and possibilities of all facts and principles.

3. The usual, the home neighborhood, the actual environment, both physical and biological, must be stressed rather than the unusual or the amazing. This should not rule out the use of "foreign" illustrative materials.

4. It is essential that science in the elementary school be liberal and cultural rather than vocational.

5. Understanding of the concepts will not be achieved through their memorization but rather by the piling up of experiences through which the student will gradually arrive at significant understanding and make applications of understandings. The vicarious experiences of the pupils should, in many instances, be supplemented or displaced by direct experiences.

6. All experiences included should be real, challenging, and intrinsically worth while to the children.

7. It is deemed essential that the students actively and purposively participate in the experiences.

8. Within the term *experiences* should be included experimenting, observing, reading, discussing, constructing, excursions, games, gardening, expression activities, keeping records, planning, collecting, analyzing, etc.

9. Subject-matter is of necessity an integral part of the program, but should be considered as a means to an end—that of understanding and utilizing basic elements and concepts.

10. It is imperative that science in the elementary school should not become associated with indoor study only. The classroom and the materials of instruction must include the whole of life.

11. The units are, to a large extent, independent of one another. Consequently the order in which they are taken is of no great importance. The science units should be closely related to, and when possible, correlated with experiences in other areas. In many instances science units and activities will naturally grow out of experiences in other areas.

12. Many questions important to science have never been answered. Procedure in teaching science must recognize this fact.

13. Teachers of science in elementary schools must recognize the fact that content is not true for all time in such a manner that will prevent the student's developing the idea that it is. Man's conception of truth changes.

14. The development of social sensitivity on the part of each pupil is of paramount importance. The teacher should take advantage of every opportunity to increase the pupil's awareness and understanding of the social aspects of science.

15. Satisfactory development of attitude requires that the teacher carefully exhibit respect for the personality of each pupil.

16. The organization and procedure must insure experience in *problem-solving*, which is the nature of science.

[21] Fort Worth Public Schools, *Science, A Tentative Course of Study for Grade Six* (Fort Worth, Texas, 1937), pp. 3-5. Certain of these apply especially to their course of study, such as item 11, but these are pertinent to most courses.

17. The learning situations must include those in which the scientific generalization is acquired, those in which it is applied, and those in which understandings are tested.

18. There must be some activities that make it possible for the student to measure his progress.

19. The order of difficulty must be such that students through reasonable effort may gain the satisfaction of accomplishment.

20. The laboratory work should have the characteristics of experience-getting work rather than those of illustrative or confirmatory work.

21. The "let's find out" attitude should be encouraged and attempts to "find out" carefully guided into acceptable methods.

22. Procedure in science must at all times attempt to present the truth. Distortions should be avoided. All explanations by way of the mystic should be omitted. Superstitions should be noted as such.

23. Much time and energy must be devoted to activities which will insure significant understanding of the meaning of terms employed. The degree of success achieved depends to a large extent upon making meanings of words. What do *rotate, expand, contract, density, condense, vibration, adaptations,* etc. mean to children?

V. SCIENCE EXPERIENCES—WHAT TYPES?

Developing scientific thinking through experience. Experiences in science provide the situations in which learning takes place. The selection and direction of experiences are the determining factors in the extent to which learning actually takes place. A miscellaneous collection of unrelated experiences will result in relatively little pupil growth. *A carefully planned series of experiences leading toward the formulation of an understanding or a generalization will prove much more effective in the learning of most pupils.* An example of a series of activities selected to develop an understanding is shown in the material taken from the Fort Worth course in the following section.

In the practice of utilizing activities to provide the learning situations, one of the weakest spots is that so many teachers feel that any activity is valuable as long as it is an activity. Little or no attention is paid by an all too large percentage of the teachers to the outcomes which result from the activities. More and more attention is being given to results of the experiences, to the changes made in pupils as the end rather than the activity itself as the end.

Experiences are utilized in the solution of children's problems. They are, in science, principally of two types, activities involving (1) the collection and evaluation of data, and those involving (2) the organization and presentation of data. Thus the learning procedure consists of three steps:

1. *A formulation of the problem.* Problems should be clearly stated so that children understand to what it is they wish an answer. Large problems need to be broken down sufficiently so that they are clear.

2. *The collection and evaluation of data.* The transition between steps one and two is a stumbling block for many teachers. Here is where careful planning needs to be done with the pupils so that they understand clearly what they

are going to do. The extent of the planning depends upon the type of individuals and their previous experiences. Time spent on learning techniques involved in obtaining information is most profitable, for the actual information gathered may not transfer to another situation, but the technique can be utilized again and again.

Obtaining and evaluating data in science will involve such types of experiences as making collections, taking excursions, caring for animals, growing plants, naming and identifying, observing, analyzing, experimenting, listening, reading, and testing.

During this phase of the work the development of problem solving and the use of scientific attitude of mind should receive special emphasis. Important highlights under both of these purposes are given in the Ohio course: [22]

To develop ability in problem solving, critical thinking, reflective thinking

Discovering problems
Defining problems
Planning situations, experiments, and the selection of materials through which problems can be solved
Developing the ability to make careful observations
Recording data—keeping records
Drawing inferences and conclusions from data
Testing validity of results
Applying principles and generalizations discovered in one situation to similar situations
Growing in interest and faith on the part of each individual in his own ability to solve problems

To develop the disposition and the ability to maintain and use the scientific attitude of mind

Tendency to look for cause and effect relationships
Sensitive curiosity concerning reasons for happenings
Willingness to consider evidence objectively
Willingness to suspend judgment
Cautiousness in announcing and accepting ideas about the environment
Habit of weighing evidence with respect to its pertinence, soundness and adequacy
Respect for another's point of view, open mindedness and willingness to be convinced by evidence

3. *The organization and presentation of data.* This will involve such types of experiences as expressing graphically, constructing, writing, exhibiting, planning (in most cases), dramatizing, discussing, recording and listing, and esthetic expression. Obtaining the information does not solve the problem. It is of no value unless it is well presented. Too often in science the experiences which lead to the obtaining of information are considered sufficient and the techniques for presenting the information are neglected.

Illustrations of actual science experiences are listed under each type in the following list:

[22] Ohio State Department of Education, *Science Education for the Elementary Schools of Ohio* (Columbus, Ohio, The department, 1945), pp. 12 and 17.

On the school farm

A "center of interest"

Testing

1. Perform soil tests.
2. Which is hardest—rain water or tap water?
3. Put a jar over a candle; what happens?
4. Is static electricity the same as magnetism? Compare a comb and paper with a magnet and tack.

Organizing and Presenting Data

Expressing graphically

1. Draw and color birds you saw.
2. Make sketches of trees to show different shapes.
3. Locate trees on a map of the school yard.
4. Make charts showing plants for man's use.

Constructing

1. Make an insect cage.
2. Make a bird feeding table.
3. Make a sun dial.
4. Make weather vanes.

Writing

1. Make a chart telling of your trip.
2. Write a short story about the weather bureau.
3. Write a story of harmful insects in the house.
4. Write to your state department for your game laws.

Exhibiting

1. Hold a pet show.
2. Arrange mounted wild flowers for an exhibit.
3. Give exhibits to show proper clothing to wear.
4. Prepare an exhibit showing how man uses water.

Dramatizing

1. Put a health play on for a lower grade.
2. Put on a short play showing changes in our life due to science.
3. Put on a play showing how people lived long ago.
4. Put on a play showing the importance of the weather bureau.

Discussing (talking)

1. Report what the ants did when you observed them.
2. Tell about your pets.
3. Report on some common superstitions.
4. Tell stories you have heard about farm animals.

Planning

1. Plan a pet show for your school.
2. Plan a model farm.
3. Plan a bird-house-building contest.
4. Plan a trip.

Recording and listing

1. List the electrical equipment in your home.
2. Keep temperature changes.
3. Keep cost records on hens.
4. List all the birds observed by the class.

Expressing esthetically

1. Singing songs about the weather (from a California course of study).
2. Creating songs about animals, flowers, weather.
3. Participating in interpretative rhythms, falling rain, hopping bunny, wind in the trees.
4. Expressing in song, rhythmic chants, jingle, or by tapping an instrument, any bodily movement or dramatic action such as planting and harvesting the rice, fishing, etc. (Chinese unit—6th grade).

The list of types of experiences should be of value to teachers in enriching and broadening the experiences of pupils through the utilization of a variety of types. It should also be of value to those responsible for preparing courses of study for the same purpose.

Opportunities to learn. Children have many questions in regard to life about them. The teaching of science enables the children to work out the answers—not to be told them by the teacher. The many opportunities for learning have been briefly stated by Craig: [23]

"Some of the phases of instruction that may be shared with children are proposing problems; defining problems; suggesting methods for the solution of problems; relating experiences pertinent to the solution of a problem; suggesting observations that may be made; thinking through the problem; suggesting an experiment that may be made to solve the problem; assisting with experiments; improving the experiments; finding flaws in experiments; repeating experiments; questioning the authority of printed material; questioning superstitions, myths, and other unscientific material; discarding opinions; recognizing the difference between the proposals of class members and scientific information."

Experimenting is one of the best ways for children to learn the beginnings of scientific principles and generalizations. Experiments should be kept simple. Equipment must be kept simple. Complicated apparatus has little or no place in the elementary school. The following guides should be observed in experimenting: [24]

1. Experiments should be conducted so that they will cause pupils to think.
2. Children should be conscious of the purpose for performing an experiment.
3. Careful planning is essential to successful experimenting.
4. In so far as possible, children themselves should perform the experiments.
5. Many times, children themselves can originate experiments to answer their questions.
6. Experiments should be performed carefully and exactly, according to the directions, either those from books or those originated by the class.
7. Pupils should learn the value of using a control when they perform an experiment so that their results will be more dependable.
8. Simple apparatus is more appropriate for use in experiments in the elementary school than complicated material.
9. Pupils should exercise great caution in drawing conclusions from an experiment.

[23] *Op. cit.*, 1947, p. 29.

[24] Glenn O. Blough and Paul E. Blackwood, *Teaching Elementary Science*, U. S. Office of Education Bulletin, 1948, No. 4 (Washington, D. C., U. S. Office of Education, 1948), pp. 13-16. An abstract. For a more complete discussion see the original.

10. As many applications to everyday life situations and problems as possible should be made from an experiment.

Environment-centered experiences. Immediate environment is one of the richest sources for science experiences. Teachers need to take inventory of these opportunities. If a local course of study is to be constructed it should include the science opportunities especially valuable within the local environment. A few constants are weather, plant life, and animal life. Possibilities for excursions vary, but a few are suggested, some of which may be applicable.

Weather opportunities

clouds	wind	ice
snow	storms	
sleet	hail	

Plant life

seeds	trees	bulbs
fruits	flowers	grass
vegetables	plants	

Animal life

birds	dogs	frogs
squirrels	cats	cocoons and moths
farm animals	gold-fish	bees
hens	zoo animals	

Possibilities for excursions

airport	gardens	radio broadcasting station
bottling works	gas works	
bridges	grocery	railroad
cleaning and dyeing plant	hospital	sewage-disposal plant
	ice-cream plant	ships
construction	ice plant	steam-shovels
creamery	laundry	street-cars
electric-light plant	machine shop	telegraph office
factories	museum	telephone office
farms	park	water works
fire department	pet store	woods
florist	printing plant	zoo
fruit stands		

VI. HOW ARE SCIENCE EXPERIENCES ORGANIZED?

Plans of organization. Science, as well as arithmetic, may be considered as being in a transitional period. In many places if any work is done with science, it is offered as a separate formalized subject. In other situations separate science units are taught, such as a unit on bees. In still fewer, but in an increasing number of school systems, teachers are utilizing science opportunities whenever they occur. The source of the experiences is in the larger unit, and the problems are solved whether they depend upon art, arithmetic, social-studies, or science materials.

Science does have an important place in the elementary program. Handled incidentally, it will mean that children will have relatively little science. Teachers are apt to be poorly trained and the subject becomes neglected.

The curriculum has become very crowded. The process of adding has gone on without any suggestion as to what can be eliminated. It is easy enough to plan a series of experiences in science, in conservation, in health, in safety, but it is not easy to fit these into the child's day. This point is further discussed on pages 255 and 256.

How can the school day be organized to include all important experiences? For most schools and most teachers it is felt [25] that a science unit should be in progress as well as a social studies unit.

It is only the very unusual teacher who is sufficiently familiar with all learnings needed by children and sufficiently expert to provide the balance to integrate all experience around a central unit.

Language arts and enrichment activities could be correlated with these two units, in addition some separate experiences would be needed.

If a core of science units is developed, the work in health (see Chapter 13), safety, and conservation should in most cases be included. Since the areas with which the practice of conservation deals are soil, water, forests, grasses, and other vegetation; wild life, minerals, and recreation and scenic resources, it is an important area of science. All implications for conservation need to be developed in each science unit.[26]

The organization of large units of science does not preclude many science experiences going on at the same time. Short experiments quite unrelated to the larger unit may arise from an interest of some pupil, or be suggested by something read, or be unusually timely. For instance, the day this was being written was the first day of spring. Does this suggest any science opportunities to you?

There are advantages and disadvantages to each type of organization followed. It is so obvious as to need only a reminder that what appears in the printed course of study may differ greatly from what is actually taking place in the classrooms of a given city or state. It is also trite to mention that the best teacher may do a wonderful job with the poorest possible written course of study and the poorest teacher may do a terrible job with the best course of study. Examples are included to illustrate in what manner various places are approaching a solution of their science problem.

One common characteristic of all of the courses is their stress upon the teacher as the determining factor of the science work in his or her

[25] We (the authors) have arrived at this opinion after a careful study of the demands placed upon the elementary school, a thorough analysis of hundreds of courses, the visitation and observation of many classrooms across the nation, and the discussion of the issue with numerous "leaders" in elementary education.

[26] For additional help in conservation see the bibliography for *Large Was Our Bounty* and Beard.

classroom. They all state that the course is only a guide and is not meant to be followed page by page. They also state that no matter what type of organization they follow, there are many possibilities to utilize opportunities for science experiences in other than the science period or unit. These other opportunities, they insist, should be capitalized. This point of view is one of the most encouraging trends in the newer courses.

There has been considerable improvement in many of the courses since Craig's critical comments.[27] In many cases the criticisms "non-functional, accidental to the school program, emphasis on observation and identification" still could well be applied. Health, while weighted heaviest in the ranking of objectives in his study, was conspicuous by its meagerness in much of the material examined. However, many schools are now doing a great deal in relation to health.

An overview of plans. The difference between programs is primarily in the method of organization. California has listed topics with outcomes and presented sample science and social-studies units showing how science understandings and experiences may be developed and utilized. Ohio has grouped understandings and suggested experiences. Cleveland and Oregon have used problems and concepts. Courses of study which give a number of science units on each grade are represented by illustrations from Oregon; Glens Falls, New York; and Madison, Wisconsin. Fort Worth is used as an example of a course consisting of a series of units, each of which was constructed to develop certain basic concepts in science. Pasadena is an example of an elementary curriculum built around certain units in the social studies. The science opportunities in these units have been analyzed and presented. Supplementing these experiences are other science experiences which would not come from the social-studies units, but which are valuable.

There is no attempt to evaluate the relative worth of the various approaches. That could only be done in terms of pupil outcomes. They are all defensible in terms of the modern philosophy and psychology of the elementary school. In some cases they were developed in their special manner to meet the needs of the group of teachers with whom they were working. It is obvious that certain courses supply much more help to teachers than do others. They are presented in some detail in order that the directions of various science programs may be more thoroughly understood.

Using children's problems. Some schools organize their science program around problems which arise from the children's interest in interpreting their environment and from their need to solve their problems of living in such areas as health, safety, homemaking, and conservation. Illustra-

[27] Gerald S. Craig, *Certain Techniques Based on Developing a Course of Study for Science for the Horace Mann Elementary School,* Contributions to Education, No. 276 (New York, Teachers College, Columbia University, 1927).

tions of the type of program are given by Parton [28] on the first and fourth grades.

Here are some problems first grade children set up because of their interest in interpreting their environment:

1. What makes the rain come down?
2. Where does the rain come from?
3. How does the sun help the rain to come?
4. Does the wind help?
5. What makes the snow?
6. How does the snow help?
7. How do the plants get water?
8. Where does the water we put on the plants go?
9. What makes wet clothes get dry?
10. Where does the water go in our cleaning rags when we hang them up to dry?

All of these problems were not set up at the beginning of the study. Several arose as the work progressed, and as the children sought answers which would help them interpret their environment.

Children also meet problems of living in their classrooms. As a fourth grade class at the beginning of the school term planned how to make their classroom livable and attractive, these questions were set up:

1. What kinds of plants will be best for our room? How many do we need?
2. What shall we put in the window box?
3. How many new flower pots do we need?
4. What kind of soil is needed?
5. Where can we get the soil?
6. Where can we get the additional plants we shall need?
7. What color should we paint the window box and the old flower pots?
8. How can we arrange the plants to look pretty? What is meant by a balanced arrangement?
9. How should we care for our plants?
10. Which plants need more water than others? Why?
11. Which plants need more sun than others? Why?
12. What does the sun do for plants?

As the fourth grade solved these problems they used content from science, art, and consumer mathematics.

Both types of problems—those which are chiefly for the purpose of interpreting the environment and those which enable children to solve some immediate problem of living—are important and are interrelated in the work of the children.

Background material. California approached the problem by a different method. Recognizing the lack of preparation of the average classroom teacher in science, the state department sponsored a series of fifty-two monthly bulletins. Each of them presented a different science topic espe-

[28] Daisy Parton, "The Setting of Science in the Elementary Program," *Science Education*, Vol. 32, October, 1948, pp. 267-272.

cially usable as source material for the teacher. The fact that the pamphlets were largely background material developed by subject-matter experts rather than suggestions for a teaching unit limited their usefulness somewhat.

Their more recent volume *Science in the Elementary School* [29] provides the most comprehensive treatment of science of any city or state publication. Suggestions on point of view, using science materials, desirable outcomes and experiences on various levels, and illustrative units are given. The illustrations show how strictly science units can be developed and also how science experiences and concepts evolve from a social studies unit. It has excellent reference material and a comprehensive index to science books for children.

Understandings and experiences. Often science experiences are provided without too much consideration of the important concepts or understandings which need to be developed. The Ohio Bulletin [30] has chapters dealing with living things, weather, machines, the earth, magnets and electricity, and health and nutrition. Each chapter lists the basic understandings to be developed in the area, such as for living things: [31]

What are the basic understandings involved in the study of living things?

All plants and animals need air, water, warmth, light and food.

There is an interdependence between animals and plants.

Each living thing produces its own kind of living organism.

Living things adjust themselves to seasonal change.

Living things are adapted in various ways to survive similar environmental conditions.

Through the interdependence of living things and the struggle for existence a balance tends to be maintained among the many forms of life.

Then basic understandings are listed for three age levels: six-eight year olds (first and second grades), eight-ten year olds (third and fourth grades), ten-twelve year olds (fifth and sixth grades). The detailed suggestions are outlined under questions which children ask. Under each question activities and experiments are suggested with the "basic understandings to be discovered" suggested opposite the activities. Excerpts from the "Suggested Experience for Six to Eight Year Old Children" illustrate the material. [32]

Activities and Experiments	Basic Understandings to Be Discovered
What are the differences between living things and things not alive?	
1. Name the living things in the room. Name the things in the room that are not alive.	Living things are different from things that are not alive.

[29] California State Department of Education (Sacramento, California, 1945), 418 pp. This volume is as fine a professional contribution as their two *Teacher's Guides.*

[30] Ohio State Department of Education, *Science Education for the Elementary Schools of Ohio* (Columbus, Ohio, 1945).

[31] *Ibid.*, p. 43.

[32] *Ibid.*, p. 45.

Activities and Experiments	Basic Understanding to Be Discovered
4. Observe a mother cat feeding her kittens. Watch a hen with her baby chicks. Watch a mother bird feeding her young.	Living things have young.
6. Find many different kinds of seeds.	There are many different kinds of seeds.
8. Soak pea seeds, radish seeds, etc. Examine each kind. Does each kind have a seed coat? a tiny plant? food for the plant?	There are many different kinds of seeds.

The value of such a presentation is that it suggests many experiences and experiments. The work cannot become merely a "reading about" science. The second important value is that it focuses attention upon the basic understandings which need to be developed. The inclusion of health and nutrition helps to relate the programs in science and health.

Another illustration of the same method is in the Cleveland, Ohio course. The examples are taken from the fourth grade.[33] The work of the fourth grade is organized under eight units as follows:[34]

Unit I—How Are All The Things Of The World Grouped?
Unit II—How Do Living Things Grow?
Unit III—Why Do Living Things Need Air And Water?
Unit IV—How Do We Know The Earth Is Moving?
Unit V—What Heavenly Bodies Can We See In The Sky?
Unit VI—How Do Magnets Work?
Unit VII—What Plants Need Our Protection?
Unit VIII—How Can We Make A Garden?

Within each unit suggested problems are listed, followed by suggested activities, basic understandings. Clever illustrations are used in the margin to make the points more vivid to teachers (omitted here): [35]

Suggested Problems	Suggested Activities	Basic Understandings
V. *How can you tell a plant from an animal?*	Bring out the fact that plants move as they grow. However, plants cannot move from one place to another, as animals can, because their roots hold them in the ground.	5. Many animals: a. have legs, wings, or fins b. can see, feel, hear, taste, and smell c. eat plants or other animals

[33] Cleveland, Ohio, Board of Education, *Science Course of Study, Fourth Grade* (Cleveland, Ohio, 1943).
[34] *Ibid.*, p. 22.
[35] *Ibid.*, p. 27.

Suggested Problems	Suggested Activities	Basic Understandings
	From the study of specimens and pictures, find the parts that help certain animals to move from place to place—as fins, wings, legs.	Most plants: a. cannot move from place to place, but
	Through observation and discussion, bring out the facts that many animals can see, hear, smell, taste, and feel; but plants cannot.	they move as they grow b. have roots, stems, leaves, flowers, and seeds
	Suggest that the children name as many animals and as many plants as they can.	c. make their own food
	The children can now divide all the living things into two groups, and label these two groups—PLANTS—ANIMALS.	

Units emphasizing concepts. A number of courses use the term concepts rather than understandings. Actually there is little to distinguish between the terms as used. Two interesting state courses are those of Oregon and Utah.

Oregon divides the entire field of science into three areas: living things, energy and mechanics, and the earth and the universe. Each area has one or more units suggested for each grade. Each unit is developed with a suggested approach, outline of concepts, suggested experiences which develop these concepts, references, and visual aids. The program is based upon an "expanding conceptual pattern."

The sequence is shown in the units suggested under "Living Things."

LIVING THINGS [36]

Grade 1 How do our plant and animal friends live?
2 How do living things differ?
3 How do plants and animals live and grow?
4 How do we group the things we find about us?
5 How do living things live together? How can plants and animals be made more useful?
6 How are plant and animal bodies different?
What do the rocks tell us about plants and animals?
7 How do scientists work?
How are living things alike?
How are living things fitted to their habitat?
Why do we need different kinds of foods?
How is the balance of life maintained?
8 How do our bodies work?
How does life continue on earth?

[36] Oregon State Department of Public Instruction, *Science for Oregon Schools* (Salem, Oregon, 1948), pp. 23-24.

An example of the material is taken from a third grade unit.

How Do Plants and Animals Live and Grow? [37]

UNIT CONCEPTS:	SUGGESTED EXPERIENCES:	MATERIALS:
Land and water plants and animals have many ways of adaptation suited to the places in which they live.	Observe how plants and animals live in different places such as trees, ground, and water. Construct and maintain balanced aquaria and terraria. Collect homes of animals, such as wasp nests, bird nests, and soil with earth worms. Observe different body structures for different ways and different places of living. Make a chart with pictures of animals which spend all life in water, animals which spend part of life in water, animals which spend all life on land, animals which fly—live in air.	Aquaria and terraria, jars and containers for insect and plant life. Pictures which show different body structures of birds and animals.

Utah organizes science under ten major science generalizations or concepts and divided into three groups: kindergarten through second grade, grades three and four, and grades five and six. Meanings to be developed in the primary grades are simple and increase in complexity in the intermediate grades.

The major concepts which are stressed are: [38]

The Physical Environment Affects Living Organisms
The Universe is Composed of Many Bodies that Affect Each Other
Organisms are Adapted to Live in the Physical Environment
Organisms are Interdependent
The Earth Has Not Always Been as It Is Now
Microörganisms are Harmful and Useful to Man
Man Has Learned How to Care for His Body
Weather and Climate Help Determine the Behavior of Man
Man Learns to Use Natural Forces to Improve His Ways of Living
Man Makes Use of the Materials of the Earth

Each major concept is subdivided into a number of minor concepts appropriate to the grade level with suggested experiences.

Concepts with teacher-background material—Glens Falls. An excellent separate course of study in science is represented by Glens Falls, New York. Here again the point of view is that the material is suggestive to the teacher, rather than in the form of definite units to be taught by the teacher. A few statements from the course will serve to illustrate their approach: [39]

[37] *Ibid.*, p. 30.

[38] Utah State Department of Public Instruction, *Science Supplement to a Teaching Guide for the Elementary Schools* (Salt Lake City, Utah, 1946).

[39] Glens Falls Public Schools, *Elementary School Science* (Glens Falls, New York, 1936), Vol. I, "Introduction," p. 1.

Emphasis is placed on the maximum use of available equipment and of the local environment.

It is sincerely hoped that this syllabus will be regarded as flexible rather than rigid, and as suggestive rather than inclusive. The topical organization, especially of the primary grades, is designed to insure flexibility. Several topics may be grouped in a large unit. Selected material may be integrated in a broad unit of work. In the final analysis the interest of each class is the determining factor in choosing science material.

Any class may choose material listed under a lower grade or under a higher grade, according to its particular needs and interests.

The rôle of the classroom teacher is the same in science as it is with the teaching of any elementary-school subject. It is that of a guide who will select and encourage science interests, will aid in their development, and will make functional the information and attitudes acquired from the pursuit of interests.

After a topic is selected it is necessary to provide meaningful experiences that will lead to an understanding of the larger objectives. Such experiences should be varied.

There are a number of units given on each grade level. These units are usually fairly short and built around one idea, such as "Seashore Life Differs from Pond Life" (grade two). The organization within each unit is especially valuable if most of the teachers who are to use the material are weak in the actual subject-matter of science. Each unit contains the following sections:

I. Major objectives
II. Essential meanings
III. Suggested content
IV. Suggested activities
V. References

The organization of the six years' work follows somewhat the idea of Craig, a spiral plan. A number of concepts are covered on each grade level; then these concepts are broadened on the higher grade levels. This method seems to be acceptable especially where the units are organized science units. Actually concepts in such courses as the Pasadena one are developed in the same manner, but the progression is not so apparent.

Some concept of the material covered can be obtained from the statements concerning the work of the kindergarten.

We regard the kindergarten as a first step in a seven-year sequence of elementary education, and we regard science as an integral part of the kindergarten program. Since the function of science is to help orient the child in his physical environment, it is important that a continuous science program should begin with the beginning years of the child's school life, gratifying a natural curiosity, and an intense interest in what goes on about him.

The topics are suggestive, and need not necessarily represent an entire kindergarten program. The material may be motivated in science units. It may arise in correlation with any interest or study of the group. It may often be incidental.

Living Things are Different from Things that Are Not Alive
Living Things Prepare for Winter
How to Take Care of Our Pets

Seeds Make Plants
The Stones Around Us
The Sun
The Stars
The Moon
Some Trees that Keep Their Leaves All Winter
Water Changes Its Form
We Can Make Steam
Smoke

More on concepts with background material—Madison. Another example of a carefully developed course organized by units is the Madison, Wisconsin, course.[40] The assumption is that many teachers lack a science background, so the units contain much background material.

The unit outline with brief comments is as follows:

I. *Objectives*

A. Understandings

The most important understandings are closely listed and serve as excellent directors for the teacher. Examples are those from the fourth-grade unit on bird friends.

1. Man is dependent upon plants for life. Without birds plants would be destroyed by insects.
2. Birds help keep a balance in nature.
3. All birds do some good; a very few are considered harmful.
4. Birds save men millions of dollars every year.
5. Birds are found all over the world in every sort of habitat.
6. Many of the natural habitats of birds have been destroyed by man's draining marshes and cutting trees.
7. Birds are structurally adapted to their mode of living.[41]

B. Information

A detailed outline of information related to the understandings.

II. *Materials needed*

Lists a number of suggestions

III. *Activities*

Suggests a long list of activities, visual materials, classified references and activities correlated with other fields

IV. *Vocabulary*

Lists of technical terms

V. *Correlation with health, safety and citizenship*

VI. *Judging results*

A number of suggestions for evaluation

VII. *Bibliography*

A. For teachers
B. For pupils

[40] Madison City Schools, *Natural Science* (Madison, Wis., 1937).
[41] *Ibid.*, Grade IV, p. 31.

The Madison units are a help to the teacher in dealing with the worthwhile things in science. A definite attempt has been made to assure that the unit, as it develops with the pupils, will be directed toward important understandings in the field of science.

Concepts analyzed for learning elements—Fort Worth. The Fort Worth course of study offers still another approach. It is a direct application of the recommendation of the *Thirty-First Yearbook* in utilizing major concepts in science as a basis of the program. Essential science meanings or understandings have been utilized as the organizing factors of the program. These concepts were then analyzed for the learning elements which one must understand to understand the concept. The final step was to list experiences which would deal with these elements.

There is a difference—at least on paper—between the Fort Worth method and the Pasadena method which should be clearly understood. The presentation of the Pasadena material to the teacher is in terms of types of experiences, such as discussion, collection, and experimentation, whereas the Fort Worth material is presented under concepts and the experiences that will develop those concepts. If the Pasadena material is based upon as careful analysis as is apparent in the Fort Worth course and the teachers are familiar with the concepts to be developed, then the Pasadena method might result in a more "integrated" outcome in individuals. The final evaluation of the comparative worth of the various methods of organization needs to be made in terms of differences in children's learnings. To control the situation sufficiently to enable one to draw adequate conclusions would be an extremely laborious task.

Units presented in the Fort Worth Course of Study in Science are organized as follows:

I. Objectives
   A. Science concepts
   B. Desirable outcomes
II. Overview
III. Suggested approaches
IV. Suggested assimilative material
V. Suggested activities
VI. Culminating activities
VII. References
   A. Teacher
   B. Pupil
   C. Suggested music

Visualizing the transition from science concepts to learning elements to childhood experiences can be gained by isolating certain materials from a unit of work. These materials are from a second grade unit entitled "Other Worlds Than This One: The Sun, Moon and Stars." The unit outline is adhered to for the purpose of making more understandable the material included under each heading.

EXTRACTS FROM A SECOND-GRADE UNIT ON OTHER WORLDS THAN THIS ONE: THE SUN, MOON AND STARS [42]

I. *Objectives*
  A. Science concepts
    1. The earth's position and relation to the sun and moon are of great importance to the life of the earth.
  B. Desirable outcomes
    1. A knowledge and an understanding of
      ....
      d. The fact that the sun's nearness to the earth makes it possible for plants, animals, and people to live upon the earth
    2. An appreciation of
      ....
      b. Man's dependence upon the sun and moon
      .....

II. *Overview*

III. *Suggested Approaches*

IV. *Suggested Assimilative Materials*
  B. The sun provides heat and light for the earth.
    1. The sun is a ball of hot gases.
      a. It gives off heat.
      b. It gives off light.
      c. It has no life.
    2. The earth gives off only reflected heat and light.
    3. The sun lights half the earth at a time.
      a. Day
      b. Night
    4. No stoves or lights on the earth can take the place of the sun.
    5. The sun's heat and light give energy for growth to
      a. Plants
      b. Animals
      c. People

V. *Suggested Activities*
  B. The sun gives us heat and light.
    1. Invite an older child to come in and describe the sun to your grade. The children may write a letter or send a room representative to give the invitation.
    2. Use an electric light, a globe, and an apple to show how the sun is a source of light and heat for the earth and moon.
    3. Watch a "sunrise" and a "sunset."
      a. When does the earth grow light?
      b. When does the earth grow dark?
    4. Discuss such questions as
      a. What light can be seen the farthest?
      b. Does it give as much light as the sun?
      c. What warms the great outdoors?
      d. Could fires warm the earth?
      e. What melts snow?
      f. What is warmer, day or night?

[42] Fort Worth Public Schools, *Science in the Elementary Schools,* Grade Two (Fort Worth, Texas, 1934).

5. Read "The Sun Heats the Earth," Craig and Baldwin, *Pathways in Science,* II, pp. 138-141.
6. Make charts of shadows in the morning, noon, and in the evening.
7. Grow two plants under the same conditions except to give one light and keep the other in the dark.
8. List what animals and people eat.
9. Lead children to see that if plants depend on the sun for food then we do too, for animals and people depend on plant life.
10. Observe
    a. Cat asleep in sun
    b. How sick people seek the sunshine
    c. The nurse giving the baby a sun bath
    d. Where mother places the indoor plants, etc.

VI. *Culminating Activities*

VII. *References*

Topical approach with desirable outcomes. California [43] lists important topics in science for the primary, intermediate and upper grades. The topics for the primary grades are air, amphibians, animals of the circus and zoo, birds, domestic animals, the earth's surface, electricity, flowers and their seeds, gardens, heat and cold; insects, spiders, and other arthropods; light, pets, seasons and weather, sound, trees and shrubs, and wild animal neighbors. Under each topic is a brief discussion followed by a list of desirable outcomes. The illustration is from the primary and intermediate grades.

AIR—PRIMARY GRADES: [44]

The knowledge that air is a substance that is capable of supporting balloons, airplanes, and kites, and that many things live in air just as fish and certain plants live in water, should be made clear to the child through observation and experimentation. Too often the child thinks of air as without substance. Simple experiences such as blowing the fuzz from a dandelion top, or keeping a toy balloon in the air by blowing will show that air in motion exerts force and so must have substance.

Desirable Outcomes

1. Knowledge that air is a substance
2. Knowledge and understanding that air is a necessity to plant and animal life

AIR—INTERMEDIATE GRADES: [45]

That air is vital to life and important in the service of man is readily understood by the nine- to eleven-year-old child. The fact that air has weight can be demonstrated easily, simply by weighing a basketball in the collapsed state and again after inflating it. A fairly sensitive scales should be used. By observing windmills, the devices used for inflating automobile tires, and the compressed air hammers used in street work, children easily grasp the fact that air can be made to do useful work for man.

[43] *Science in the Elementary School, op. cit.*
[44] *Ibid.,* p. 81.
[45] *Ibid.,* p. 99.

Concrete evidence that air is a substance is afforded by many experiences and simple experiments, such as the feel of the wind and of one's breath, pumping up a ball or a tire, pushing an inverted tumbler down into a basin of water and noting that no water enters, and by noting that, when a glass tumbler is inverted over a burning candle attached to a floating cork, water rises in the glass to replace the oxygen consumed by the candle.

Desirable Outcomes

1. Knowledge that the wind is air in motion
2. Understanding the necessity of air to plant and animal life
3. Knowledge that air is necessary for burning
4. Knowledge of some of the uses of air by man
5. Understanding the relationship of fresh air to health

Social-studies units a source. Pasadena has organized the work of the elementary schools around several large units for each year's work. Listed in the course of study are opportunities for science experiences. The work is not limited to these opportunities, for they state definitely: [46]

The major interest in science should grow out of the unit of work. Although each unit undertaken is usually rich in science material, the science program cannot be complete if only such materials are used. Children are constantly bringing to class objects or observing phenomena which have little or no connection with room activity. To ignore or neglect these objects or observations would mean suppressing of interests vitally important in the lives of children. Through this latter type of activity the child learns to know and appreciate the world in which he lives. Such activities furnish one of the most important outcomes of nature education.

Thus it is indicated that there are at least two sources of science materials: those growing out of the unit of work or those supplied by objects brought to the class by the pupils or phenomena which may interest the child or be of interest to the community. But if these two sources fail to supply sufficient material for a full and continuous program, the teacher should initiate leads which will result in the development of other materials.

The implication of this position is that school is a place where children live and the teacher is a guide in the business of living. It utilizes all science interests which arise for furthering pupil growth. It also recognizes that science experiences related to the unit of work and immediate science interests *may* not be sufficient either in breadth or depth to obtain the desired outcomes. The teacher is of necessity the judge of the growth that has taken place in her children.

The teacher must either be an expert in relating science to the lives of children [47] or considerable help must be given her. The "Suggestions to

[46] Pasadena City Schools, *Suggestions to Teachers in Guiding Pupil Experiences* (Pasadena, Calif., 1936), p. 121.

[47] Note that the statement reads "in relating science to the lives of children" not an expert "in science." There is a vast difference between the two. A teacher who has a major in science may or may not be able to reorient her knowledge to result in the maximum growth in children.

Teachers" provide many of these helps to teachers weak in this area. *First,* are suggested "Grade Expectancies." These expectancies in science are stated in terms of child growth and are to be used as aids in guiding pupil experience rather than as a method of procedure. *Second,* science activities are included in the list of activities given under "Approaches, Learning Experiences, and Culminations." These experiences are not labeled science necessarily, but are included under types of activities rather than being classified as to the area from which they are drawn. *Third,* science activities in addition to those which would grow out of the unit of work are provided for in a separate section for each grade. This method, if as well done as in the Pasadena material, provides an excellent basis for the teacher to use in providing science experiences and growth in science concepts of children.

Illustrative materials are included for the purpose of clarifying their method and showing some of the rich possibilities of science material. It is only one of the possible methods which might grow out of the same philosophy and psychology. The Fort Worth, Glens Falls, and California courses are examples of other methods.

Examples from Grade Six

Grade Expectancies [48]

The child

1. Evidences a continuing interest in nature and science
   a. Through enlarged nature collections
   b. Through the possession of scientific apparatus and experiments at home or school
   c. Through interest in current events of a scientific character
   d. Through visits in groups or individually to places of scientific interest
2. Evidences an understanding of relationship of science of ancient times with that of the present through discovering the sources in ancient civilizations of many scientific principles and discoveries used to-day
3. Evidences that he fully appreciates the place of nature and science in all life activities through
   a. The realization that the natural objects and phenomena and forces are used in different ways in all human projects such as communication, transportation, manufacturing, etc.

. . . . .

4. Evidences a satisfying knowledge of natural objects and phenomena of his environment through
   a. His ability to recognize and name most of the common individuals among the birds, mammals, insects, shells, and group divisions among such other animals as amphibians, reptiles, crustaceans

. . . . .

5. Evidences a satisfying knowledge of the processes of nature through
   a. Knowing the food, habits, habitats, and life histories of most of our common animals (mammals, birds, insects, etc.)

[48] *Ibid.,* pp. 64-65.

6. Evidences well-developed skills in the field of science through
   a. Ability to grow and care for pets, animals, in growing gardens and caring for plants, in carrying on scientific experiments

ACTIVITIES WITHIN THE UNIT [49]

Sub-Unit I: *Visual Communication*

Discussing:

Reports given by children of conducting or observing experiments with photography, etc.

Discussing how natural science enters into communication; these discussions may lead to a consideration of:

a. The place of animals in the carrying of written messages, such as carrier pigeons, dogs and dog sleds, reindeer and reindeer sleds, horses and the Pony Express, oxen, etc.

b. The part played by the lumber industry in written communication

. . . . .

Information on how to make paper from linen rag or how to make several types of ink

Making inks of several types for use in dramatic play, for other activities, for exhibits, etc. (These inks may include the various kinds used to-day—colored inks, indelible inks, and invisible inks; printers' ink of to-day and Renaissance; inks used by monks, the Greeks and Romans, the Chinese, the Phoenicians, and the Egyptians.)

. . . . .

Child Experiences in Elementary Science in Addition to Those Growing Out of the Unit [50]

The sixth-grade experiences in Elementary Science should so build upon previous learnings that the child emerges from his elementary-school life with a wide knowledge and quite complete understanding of his environment, with regard to natural objects and physical phenomena. With this thought in mind, the teacher should so direct this field of study in sixth grade that the child's knowledges, understandings, and appreciations of the conditions of life will reach satisfying proportions.

1. Observing and experimenting with plant life
   a. Beginning or continuing collections of pressed flowers, waxed leaves, tree barks, seeds, and other specimens of plant life
   b. Taking nature walks with the class group or alone in order to learn to identify the common trees, flowers, and plants of his environment

. . . . .

2. Observing and experimenting with animal life
   a. Caring for common pets (dogs, cats, rabbits, guinea pigs, fish, etc.)
   b. Learning the chief animal groups (mammals, birds, insects, reptiles, worms, crustaceans, amphibians, fish, mollusks) and the life history of each

. . . . .

[49] *Ibid.*, pp. 579-587.
[50] *Ibid.*, pp. 712-714.

3. Observing and experimenting with earth materials
   a. Beginning or continuing a collection of common rocks and minerals
   b. Learning to recognize and identify the common rocks and minerals such as granite, felspar, sandstone, shale, schist, quartz, obsidian, lava, asbestos, talc, gypsum, calcite, or others which may be brought to the class

. . . . .

4. Observing weather
   a. Making a test of room temperatures near floor and ceiling
   b. Learning the properties of the air in their relation to all kinds of weather (rising of warm air, and pressing down of cold produce air movements responsible for almost all kinds of weather)
5. Observing and experimenting with sky study
   a. Learning to understand the place of the earth in relation to other bodies of the solar system
   b. Learning to know the number and names of the planets in the solar system

Another interesting example is the "Curriculum Unit on China," reproduced in the California publication [51] as a fourth or fifth grade unit. Science experiences described included experimenting with natural dyes, observing silkworms and a bamboo tree growing, testing conditions under which rice grew best, learning about adaptation of housing, furniture, clothing, and food to the environment.

Other contributions—*State problems.* Children need to have science set in their immediate environment to develop real understandings. They also need to understand the problems facing their state. Florida [52] has made specific suggestions for "interpreting science principles involved in familiar Florida settings." The description of important resources and conservation problems is keyed to the major concepts to be developed. More communities should make clear the conservation and also health problems to teachers in a similar manner.

Helps to teachers. The Florida course has many helps to teachers. They include sections on the place of science and the ways children learn science. They suggest that "You can teach science" and especially list and elaborate these suggestions: [53]

A. Build experience gradually.
B. Become acquainted with several series of science books on the grade level of the pupils.
C. Try experiments found in books on the grade levels above and below the grade which you teach.
D. Read widely in children's literature in science.
E. Study carefully, when specific information is needed, science text books on the junior high school level.

[51] *Science in the Elementary School, op. cit.,* pp. 238-255.
[52] Florida State Department of Education, *A Guide to Teaching Science in the Elementary School* (Tallahassee, Florida, 1947), pp. 26-27.
[53] *Ibid.,* pp. 11-14.

F. Read several current magazines which contain science information.
G. Spend a few days exploring your school and community.
H. Attend a campus workshop or help plan for a county workshop.
I. Attend a summer school course in science at the elementary school level.
J. Be a guide.
K. Be enthusiastic about the science activities of the pupils.

The California volume has an excellent chapter on the "Using of Science Materials in the Classroom." [54] They included detailed suggestions on the care of living animals, and equipment for field trips and experiments. The bibliography of science books for children and the master indexing of these books according to science topics is excellent.

Superstitions. Though elimination of superstitions has been accepted as an objective, there are very few courses which present any help in this area. North Carolina is an exception.[55] They point out a number of common superstitions especially those dealing with health. Where elimination of superstition is a purpose of units, definite progress can be made.[56]

Balance in the program. North Carolina makes another contribution in suggesting the need for balance. They found that during one year 96% of the major emphasis was on living things. They stress that unless the teacher uses constantly the records of units previously taught or uses guides in unit selections, the child's program will likely be a series of repetitions in one field.[57]

Science Education in American Life [58] stresses that teachers must provide balance (a) in terms of areas of environment, (b) in terms of areas of living, (c) in terms of time and space, (d) in the number and length of problems, (e) in terms of experiences throughout the elementary school.

VII. WHAT MATERIALS AND APPARATUS ARE NECESSARY FOR EFFECTIVE LEARNING?

A teacher interested in beginning work in science should not be stopped by lack of equipment. Some of the most effective apparatus can be constructed by the pupils. The materials found in school and home can be used to greatly enrich the science teaching. How can you better teach that air expands when heated than to place a partially inflated balloon over the radiator?

[54] *Op. cit.*, pp. 31-80.
[55] North Carolina State Department of Public Instruction, *Science for the Elementary School* (Raleigh, North Carolina, 1941), pp. 39-40.
[56] O. U. Vicklund, "The Elimination of Superstitions in Junior High School Science," *Science Education,* Vol. 24, February, 1940, pp. 93-99.
[57] North Carolina, *op. cit.*, p. 29.
[58] *Op. cit.*, pp. 72-73.

It has been suggested that collection of flat pictures be made for the various units in social studies. The same can be done for science. It would also be possible for school systems to "packet" the apparatus necessary for the teaching of certain science units and circulate them. These packets can be built up gradually. In many of the larger schools such a procedure would be of value.

Adequate storage space is needed. In the newer schools this is solved by the construction of work counters with storage space underneath. Apparatus can be stowed neatly by the children. It should not mean more work for the teacher.

Science displays create and encourage interest. It is easy to tell if a class is including science as part of its program. The rooms or a corner of them have interesting displays. Display cases and tables in halls are a valuable outlet for displaying work to the whole school. There is always more motivation in a project that is going to have an audience.

Here is probably not the place to discuss it, but so many school rooms are drab. One of the authors visited a number of classrooms on the island of Oahu, some in Honolulu, and some in small rural schools. Each had its "beauty spot." In some way each room had some beautiful arrangement. Perhaps you don't have access to the tropical flowers of the islands; but even in midwinter there are evergreens around, or even in New York City colored papers and objects can help. Science collections and displays can provide a center of interest.

An interesting list of materials obtained from local sources has been supplied by Blough and Blackwood. They also give a list of materials obtainable from supply houses.

Of course some of the items if borrowed from some mother's kitchen must be returned. The list is: [59]

Living Things

An aquarium (stocked with fish, snails, water plants, etc.).
A terrarium (stocked with growing plants, etc., a suitable place to keep a small turtle, a frog or salamander, or small snake).
Larvae of different kinds.
Cocoons and chrysalids.
Seeds (bean, corn, etc.).
Growing plants (geranium, ivy, begonia, bulbs, cactus, etc.).
An ant observation house.

Glassware

Fruit jars.
Milk bottles.
Glass tumblers.
Lamp chimneys.
Cups and saucers.
Pieces of window glass which may be cut into small-sized pieces.
Flower pots (various sizes).
Small mirrors.

[59] Blough and Blackwood, *op. cit.*, pp. 34-35. An additional discussion of value is in the *Forty-Sixth Yearbook, op. cit.*, pp. 87-91, chapters VII and IX.

Miscellaneous

Safety matches.
Scissors.
Teaspoons and tablespoons.
Rubber bands.
Tin cup.
Ball of string.
Scraps of different kinds of metal (zinc, aluminum, copper, etc.).
Worn-out dry cell.
Electric appliances out of repair, i.e., extension cord, hot pad, etc. (for examination).
Mechanical toys illustrating machine principles.
Pans of various shapes and sizes.
Hot plate.
Needles.
Tack puller.
Tongs.
Egg beater.
Rubber balloons.
Cellophane (clear and colored).
Pet cages.
Paring knife and table knife.
Colored chalk.
Blotters.
Balls.
Wire—steel and copper.
Flashlight.
Scraps of different kinds of cloth (silk, wool, cotton, etc.).
Burned-out light fuses of various kinds.
Burned-out light bulbs.
Worn-out electric motors.
Candles of various lengths.
Sand, clay, loam, humus.
Globe and map of the world.
Medicine dropper.
Yardstick.
Chalk boxes.
Nutcracker.
Wedges.
Thermometer (broken to be examined).
Musical instruments of various kinds.
Gummed labels.

Construction Materials

Nails, tacks, screws.
Paints and varnishes.
Hammer, pliers, file, screw driver.

Chemicals

Soda.
Starch.
Sugar.
Red ink.
Marble chips.
Lime for lime water.
Vinegar.
Table salt.
Paraffin.
Ammonia.
Iodine.
Dyes.

Collections

Seeds and fruits.
Leaves.
Shells and other sea life.
Birds' nests (made in autumn).
Insects.
Local rocks, minerals, fossils.
Science pictures of various kinds.

Suggested Learning Experiences

1. Select one scientific concept, and prepare a unit which will develop an understanding of it.
2. Discuss the possibilities within the immediate environment for elementary science. Individually or by a committee prepare a comprehensive list for distribution to the class or local schools.
3. Analyze several texts on the same grade level for agreement or disagreement on the major concepts involved.
4. Make a list of the following in your immediate environment: ten common birds, ten native plants, five native trees, and the five most important problems with which your state is concerned.
5. Divide into committees by grade levels and make a list of science experi-

ences you feel boys and girls of that age should have. Have an editorial committee check the list for overlapping.

6. If a social-studies unit has been prepared for Chapter 9, make a list of science experiences growing out of the unit.

7. If recent courses of study are available, compare them with those discussed in the chapter. In what way are they better than those illustrated and in what way can they be improved? What provision for sequence has been made?

8. What are some of your most important questions which you have concerning the teaching of science after your study of the chapter? Scan the studies in the bibliography listed under "Researches, Bibliographies, and Summaries" to determine if research has provided an answer. These references can be divided among the group.

9. Prepare a brief outline of the *Thirty-First Yearbook* and *Forty-Sixth Yearbook* of the National Society for the Study of Education indicating the special values they have for the elementary school.

Selected References

A. *General References*

Arey, Charles K., *Science Experiences for Elementary Schools* (New York, Bureau of Publications, Teachers College, Columbia University, 1942), 98 pp. Many suggestions for science experiences.

Association for Childhood Education, *This is Science* (Washington, D. C., 1201 Sixteenth Street, N. W., 1945), 43 pp. An exceedingly helpful bulletin with valuable bibliographies.

Association for Supervision and Curriculum Development, *Large Was Our Bounty* (Washington, D. C., The Association, N.E.A., 1948), 216 pp. Excellent examples of conservation education.

Beard, Ward, *Teaching Conservation* (Washington, D. C., American Forestry Association, 1948), 144 pp. Of general help with special emphasis on forestry.

Beard, W. P., and Edgerton, G. P., *Living in Forest Lands* (Washington, D. C., U. S. Forest Service, 1938). Excellent as source material for the study of adaptation of trees to the environment.

Billig, Florence G., "Science in the Elementary School and the Air Age," *Science Education*, Vol. 28, April, 1944, pp. 142-146. List of science understandings and themes related to aircraft.

Blough, Glenn O., and Blackwood, Paul E., *Teaching Elementary Science* (Washington, D. C., U. S. Office of Education, Bulletin 1948, No. 4), 40 pp. Excellent sections on how children learn science, methods of teaching, science resources at your door, and materials.

California State Department of Instruction, *Science in the Elementary School* (Sacramento, California, 1945), 418 pp. Extremely valuable. Sections on using science materials, outcomes, illustrative units, and a subject index to children's science books.

Cornell Rural School Leaflets (Ithaca, New York, Cornell University). Issued quarterly by E. Laurence Palmer, one teachers' number and three children's numbers. Each issue covers one science number.

Craig, Gerald S., *Science in Childhood Education* (New York, Bureau of Publications, Teachers College, Columbia University, 1944), 86 pp. A pamphlet giving many suggestions, including objectives and use of local resources.

———, *Science for the Elementary Teacher* (Boston, Ginn and Company, 1947), 561 pp. Parts one and six deal with problems of science in the elementary school, parts two-five deal with the subject-matter of science with which a teacher should be familiar.

Croxton, W. C., *Science in the Elementary School* (New York, McGraw-Hill Book Company, 1937). General treatment, including a large number of teaching units.

Curtis, Francis D., "Diagnosis and Remedial Treatment in the Field of Science," *Thirty-Fourth Yearbook* of the National Society for the Study of Education (Bloom-

ington, Ill., Public School Publishing Co., 1935), pp. 331-345. Excellent overview of the problem of evaluation and measurement.

EBEL, Robert L., "What Is the Scientific Attitude?" *Science Education*, Vol. 22, January, February, 1938, pp. 1-5, 75-81. A significant analysis of the scientific attitude.

FOSTER, Josephine C., and HEADLEY, N. E., *Education in the Kindergarten* (New York, American Book Company, 1936). Ch. XVIII. Valuable suggestions for nature experiences for the kindergarten and primary child.

GILBERT, Alice, "Science Content in the Elementary Schools," *School Science and Mathematics*, Vol. 43, November, 1943, pp. 769-774. An analysis of thirty courses of study which showed marked lack of agreement on topics.

HEIL, Louis M., and others, "The Measurement of Understanding in Science," *The Measurement of Understanding, Forty-Fifth Yearbook*, Part I, National Society for the Study of Education (Chicago, University of Chicago Press, 1946), pp. 104-137. Contains many excellent ideas for measuring understanding.

JONES, Martha June, "A Unified Science Course for the Intermediate Grades," *School Science and Mathematics*, Vol. 38, January, 1938, pp. 75-80. A course built on a cycle plan with ten units for each grade.

LFINING, Edna Bridge, *Millions of Years in a Winter* (New York, Teachers College, Columbia University, 1935). A fourth grade's venture into the realm of science, as described by the teacher. Most valuable in showing origin and development of the science of a real class.

National Society for the Study of Education, *A Program for Science Teaching, Thirty-First Yearbook*, Part I (Bloomington, Ill., Public School Publishing Co., 1932). A comprehensive treatment of science.

———, *Science Education in American Schools, Forty-Sixth Yearbook*, Part I (Chicago, University of Chicago Press, 1947), 306 pp. Section I deals with general problems and Section II with elementary education. Excellent for a comprehensive picture of the modern science program. Chapter VIII deals with evaluation.

NEUNER, Elsie Flint, "The Science Room in Elementary Schools," *Educational Method*, Vol. 16, May, 1937, pp. 432-434. Suggestions for a science room.

NOLL, Victor H., *The Teaching of Science in Elementary and Secondary Schools* (New York, Longmans, Green & Company, 1939). Valuable discussions on the scientific attitude and the elementary curriculum in science.

PITLUGA, George E., *Science Excursions into the Community* (New York, Teachers College, Columbia University, 1943), 154 pp. Useful suggestions for planning and conducting excursions. Gives specific examples of excursions.

Report of the National Committee on Policies in Conservation Education (Laramie, Wyoming, John W. Scott, 1409 Garfield Street, 1948), 9 pp. Points out policies of conservation education and suggests a program.

Science Education, Vol. 26, November, 1943. Entire number devoted to elementary science.

Science Education, Vol. 32, October, 1948, pp. 238-286. A collection of extremely valuable articles, especially the ones by S. F. Davis and H. B. Ross, K. E. Hill, G. G. Mallinson, G. W. Haupt, D. Parton, H. E. Boer, and J. G. Read.

Science Instruction in Elementary and High School Grades (Chicago, Illinois, Laboratory Schools, University of Chicago, 1939), 232 pp. A suggested curriculum in science. Many valuable suggestions appear in the elementary course.

STRATEMEYER, F. B., FORKNER, H. L., and MCKIM, M. G., *Developing a Curriculum for Living* (New York, Bureau of Publications, Teachers College, Columbia University, 1947), 558 pp. A comprehensive analysis of persistent life situations learners face.

UNDERHILL, Orra E., *The Origins and Development of Elementary School Science* (Chicago, Illinois, Scott, Foresman and Company, 1941), 347 pp. Valuable for understanding the development of science programs.

WELLFR, Florence, and CALDWELL, Otis W., "The Nature Study and Elementary Science Movement," *School Science and Mathematics*, Vol. 33, October, 1933, pp. 730-740. Tracts development from 1862 to date.

WELLS, Harrington, *The Teaching of Nature Study and the Biological Sciences* (Boston, Christopher Publishing House, 1936). Valuable bibliographies of subject-matter and visual aids.

B. *Researches, Bibliographies, Summaries*

BAKER, Emily V., *Children's Questions and their Implications for Planning the Curriculum* (New York, Bureau of Publications, Teachers College, Columbia University, 1945), 172 pp. 50% social studies, 8% current events, 3.66% local communities, 38% scientific, 3.46% human body.

BERGEN, C., *Some Sources of Children's Science Information,* Contributions to Education, No. 881 (New York, Bureau of Publications, Teachers College, Columbia University, 1943). Children commonly use authoritarian sources rather than empirical ones.

BRUCE, G. V., "Elementary School Science References and Instructional Materials," *Science Education,* Vols. 19, 20, 21 (April, December, 1935; April, 1936; February, 1937), pp. 76-78, 172-177, 78-82, 31-34. One of the best sources of subject-matter references available.

CRAIG, Gerald S., *Certain Techniques Based on Developing a Course of Study for Science for the Horace Mann Elementary School,* Contributions to Education, No. 276 (New York, Teachers College, Columbia University, 1927). Considered one of the outstanding studies.

CROXTON, W. C., "Pupils' Ability to Generalize," *School Science and Mathematics,* Vol. 36, June, 1936, pp. 627-634. Offers experimental evidence of the increase in pupils' ability to generalize from kindergarten through the tenth grade.

CURTIS, F. D., *A Second Digest of Investigations in the Teaching of Science* (Philadelphia, Blakiston Sons Company, 1931). A summary of ninety-three studies, of which eight are especially applicable to the elementary school.

———, *A Third Digest of Investigations in the Teaching of Science* (Philadelphia, Blakiston Company, 1939).

Elementary School Journal. Each November through 1947, a selected annotated bibliography for the year previous was published. These offered one of the best methods of keeping informed in the field.

FITZPATRICK, F. L., "Pupil Testimony Concerning Their Science Interests," *Teachers College Record,* Vol. 38, February, 1937, pp. 381-388. See also *Science Interests* (New York, Teachers College, Columbia University, 1936). Valuable data on interests.

HAUPT, G. W., *An Experimental Application of a Philosophy of Science Teaching in an Elementary School* (New York, Teachers College, Columbia University, 1935). An outstanding study in the increase in understanding science concepts.

———, "Grade Placement in Elementary School Science," *School Science and Mathematics,* Vol. 35, November, 1935, pp. 858-864. Review of methods used in grade placement of understandings which children can grasp. Excellent professional bibliography.

HILL, Katherine E., *Children's Contributions in Science Discussion* (New York, Bureau of Publications, Teachers College, Columbia University, 1946). An analysis of the quality of children's questions.

KAMBLY, Paul E., "The Elementary School Science Library," *School Science and Mathematics,* Vol. 44, November, 1944, pp. 756-767; Vol. 46, December, 1946, pp. 865-870; Vol. 48, March, 1948, pp. 202-205. Valuable list of books for elementary science.

MONROE, W. S., and SHORES, Louis, *Bibliography of Bibliographies* (New York, H. W. Wilson Company, 1936). Best source for locating research bibliographies in science.

Review of Educational Research. See issues of October, 1948; October, 1945; October, 1942; April and December, 1937; February, 1935; April, 1934; and October and December, 1931. Excellent summaries of research in elementary science by outstanding experts.

ROBERTSON, M. L., "A Review and Evaluation of the Curricular Studies Pertaining to Elementary Science," *Science Education,* Vol. 18, April, 1934, pp. 86-93. A valuable summary of curricular research.

———, "The Selection of Science Principles Suitable as Goals of Instruction in the Elementary School," *Science Education,* Vol. 19, February, April, 1935, pp. 1-4, 65-70. An outstanding study in the selection of goals.

RUSSELL, David W., "Children's Experiences in Elementary Science Related to Problems of Current Living—Fire and Air," *School Science and Mathematics,* Vol. 37, February, 1937, pp. 216-222. Good bibliography on subject.

———, "How Fifty-One Well-Known Educators Answered a Questionnaire Concerning the Teaching of Science in the Elementary Grades," *School Science and Mathematics,* Vol. 38, November, 1938, pp. 907-921. Opinions on purposes, selection of subject-matter, who and how to teach it, time, equipment, and use of texts.

Science Education. Each issue contains abstracts and new publications which are valuable sources of new subject-matter references for both teachers and pupils.

"Science Library for Elementary Schools," *School Science and Mathematics,* Vol. 36, May, 1936, pp. 535-544. Includes pupil and teacher references listed according to subject-matter. Briefly annotated. Prices listed.

13

Healthful Experiences: Providing for Healthful Living

One of the greatest contributions the school can make to a child is to *promote* his present health and send him out with proper habits and attitudes for protecting and maintaining that health for the rest of his life. This is a big order, but it is well within the ability and responsibility of the schools to do just that. The importance and desirability of good health needs no championing. Every thinking person agrees. It is the responsibility of this chapter to show the possibilities of the school's part in promoting this healthy growth.

I. THE HEALTH PROGRAM

What constitutes a complete program? To what extent and in what directions is the school responsible and warranted in taking over a problem which at one time was considered a personal or family one? Under present conditions it seems necessary that the school perform the following services for every child under its jurisdiction:

1. Provide a school plant which is constantly checked and maintained so as to provide a place for the children to live healthfully
2. Establish an atmosphere conducive to emotional development by attention to curriculum, attitudes of teachers and all in authority
3. Develop ideals and attitudes consistent with the best health information known to science to-day
4. Establish as far as possible habits which make for healthful living consistent with these ideals and attitudes
5. Provide information at the time and to the extent that it will be most beneficial in maintaining their habits, attitudes, and ideals
6. Develop attitudes, habits, and knowledge which will increase the safety of living for all children
7. Provide activities which aid in optimum physical development
8. Develop attitudes, skills, and techniques which will be of use in leisure-time activities (perhaps next to reading, health education has the largest task to perform in filling this important objective)
9. Establish a health service which locates any physical condition which is injurious either to the health of that child or of any other, reports the condition to the home, furnishes special programs or services for any child who may need it, and follows up the case as long as necessary. These special programs or services may include lunches for some, obtaining or providing

needed medical and dental care for others, or the establishment of educational programs suited to the various kinds of handicapped pupils.

10. Establish rapport with the home, the community, and all other health agencies in the district

The next question may be, To what extent can the school be effective in the education for healthful living? Considerable evidence exists that the school can make a marked contribution. The studies at Joliet, Illinois,[1] and Astoria, New York [2] offer ample evidence of the great value of a health program. Even in one limited area the evidence is clear. Let us change the question to deal specifically with nutrition.

Does emphasis on nutrition result in changed attitudes of children toward foods, and does it result in a better balanced diet? One study which helps to answer this has been reported by Lockwood.[3] In a coöperative study between the Department of Nutrition of the Harvard School of Public Health and the schools of Massachusetts, they showed that definite improvement could be made. Three day dietary surveys were taken of over 3300 children at three different times during the school year 1946-47. Certain schools were given a great deal of help in working with teachers on the problem of nutrition-education. Another group of comparable schools were supplied with only visual aids, while still another group of comparable schools were held as controls. The results showed "the schools receiving the most help through the media of workshops, demonstrations, personal conferences, visual aids, etc., showed statistical evidence of improvement in their daily eating habits, as compared with a marked decline in percents of the number of children adequate in the basic food groups within the other schools."

Evaluation of actual change in attitudes was done in a follow-up study a year later in questionnaires to parents. The sampling was small, but there was definite indication that there was a valuable carry-over in regard to improved attitudes and habits in relation to health. This, in spite of the fact that no nutrition education had been carried on with these children during the year in which the follow-up was made. This study offers definite evidence that with improved programs of in-service education and continuous stress on nutrition education throughout the school program definite changes in attitudes and eating habits of children can be accomplished. This was true for the contrasting economic levels which were included in the study.

[1] Martha C. Hardy and Carolyn H. Hoefers, *Healthy Growth* (Chicago, University of Chicago Press, 1936). See our table XXI for further data.

[2] Dorothy B. Nyswander, *Solving School Health Problems* (New York, The Commonwealth Fund, 1942).

[3] Betty Lockwood, "Research and Nutrition Education in the Public Schools," *Science Education*, Vol. 32, April, 1948, pp. 198-204.

II. BASIC GUIDING PRINCIPLES

The school has set for its objective the education of the whole child. The health, mental and physical, of the child is the single most important factor in that development. The most crucial point of a health program is that it shall be an integral part of the total curriculum. More than any other "subject" it should enter into the planning of every moment and every phase of the school living. The various phases of the health program must be unified and mutually contributory. The health instruction must make the health service more educative, and factors from the latter should make a basis for further teaching. This is true also with physical education. Acknowledgment and appreciation of the physical conditions of the school building, such as sanitation, heating, lighting, and ventilating, will enrich the pupil's background and develop attitudes and habits which will assist in the maintenance of good conditions.

Health is among the newest subjects to be added to the school offerings, and a few systems have as yet no comprehensive plan. Consequently, much time and planning are needed to develop the program. There are certain basic principles on which the school may formulate its program.

1. It must be an integral part of the regular curriculum program.
2. It should be built on the philosophy that health is a way of living mentally, emotionally, socially, and physically. It must grow out of and be a part of all child experiences in school, home, and community.
3. Health information, habits, and attitudes to be effective must be acquired from purposeful functioning situations.
4. The objective should not be just good health but the most vital and best health possible for each child.
5.[4] Health and physical education should be conceived, planned, and executed as one program, remembering the significance of adequate health and physical service, health and physical instruction, and provision of conditions necessary for health and growth.
6. Health is that condition in which the mind, body, and spirit are working efficiently toward the realization of the fullest possible life.
7. Health education is the sum of all experiences within the school and in life outside which affect meanings, attitudes, and habits relating to individual and community health.
8. Every activity in the school curriculum has its health implications. Each should be so directed that these implications are clearly understood and utilized both by teachers and pupils.
9. Since conduct is the desired end, knowledge and meanings are the means to an end. These should, therefore, not be taught in isolation from the experiences out of which they arise and in which they are to be applied.
10. The teacher and the child should think of health as a matter of conduct, not as content of instruction.
11. Special health periods devoted to direct health teachings should arise out of special needs or be the outcome of some school activity.

[4] The remainder of the basic principles are from *Health and Physical Education,* Curriculum Bulletin No. 201 (Fort Worth, Texas, Fort Worth Public Schools, 1937), p. 2.

12. The environment for health education is broader than the curriculum of the school. It extends to buildings, equipment, administration, and the entire life of the child, since they make possible the situations for desirable practices.

13. Evaluation of the health program and of pupil progress should be in terms of improved physical, mental, moral, and social behavior, and the opportunities provided for healthful practices.

14. The entire school personnel has a decided responsibility for, and must coöperate in, taking advantage of the many possibilities favorably affecting the health behavior of school children.

III. HEALTHFUL SCHOOL LIVING

Physical environment. One responsibility of school authorities is to provide a place where the children may live and learn healthfully. If this objective is fulfilled, it is much easier to fulfill others. It is hard to teach cleanliness in a dirty looking building or where facilities are not adequate for pupils to wash their hands. Below are the major factors which need to be kept in mind.

Location and construction of the building. Before a school is to be built or remodeled, the latest in standards and suggestions should be carefully studied.[5]

Fire protection. Fire alarms, fire extinguishers, and hose should be readily accessible. Fire drills should be given so that pupils automatically go to the proper exit without confusion. Corridors and stairs should always be free from obstruction.

A teacher new to a school building should become immediately familiar with all the provisions for fire protection. The best of facilities are of no value unless used.

Every school should have planned for any and every type of emergency. This would include fire in any and every part of the building, earthquakes, tornadoes, hurricanes, and explosions. Regular drills must be held, including the "obstruction" type of drill.[6]

Classrooms. Rooms should not be overcrowded. Thirty square feet of floor space[7] should be allowed as a minimum for each child. Ceiling height depends upon a number of factors.[8]

Walls and all other surfaces should be in dull non-glossy finish without varnish. The color on the ceiling should be such that 80 per cent of light is reflected and on the side wall, 60 per cent. On wainscot, trim and baseboard a 40 to 60 per cent reflection factor is needed. Floors, desks, and other equipment require a 30 to 40 per cent reflection factor and chalk-

[5] See American Association of School Administrators, *American School Buildings, Twenty-Seventh Yearbook* (Washington, D. C., The Association, 1949).

[6] Blocking of a given area, necessitating change of usual drill procedure. See American Association of School Administrators, *Safety Education, Eighteenth Yearbook* (Washington, D. C., The Association, 1940), pp. 294-296.

[7] *American School Buildings, op. cit.*, p. 88.

[8] *Ibid.*, pp. 214-215.

boards not less than 20 per cent. Color is receiving very careful attention in the modern classroom. Many old classrooms have become livable through repainting and relighting. No school painting should be done without first considering the modern theories of color.[9]

Lighting is complicated. Too often only intensity of light has been considered. Quality of light must be good. "Quality depends upon (a) the location of the light source and its intensity, and (b) the environment or surroundings of the light including color, brightness, and reflection factors of ceiling, walls, floor, and furniture. Good quality of light cannot be obtained where extreme brightness differences exist." [10] Research has by no means developed the final answer. The Yearbook Commission on School Buildings reported the 30-foot-candle recommendation of the Illuminating Engineering Society but definitely cautioned the need to reserve judgment.[11]

The amount of light needed varies tremendously with the quality and size of printing, quality of paper, intensity of looking, the sight of the individual, and many other factors. No judgment should be made concerning adequacy of lighting nor no new lighting system installed or old one modified without first consulting several sources.[12]

Seats should be of various sizes or adjustable. They should be adjusted to the needs of the pupils, at least twice a year. There is further discussion of this point in Chapter 2 with standards for adjustment.[13]

Facilities. Drinking fountains in the ratio of one for every seventy-five children and one on each floor should be provided. They should be sanitary, easy to use, and accessible to the children so that each child may get a drink within the normally allotted time, if he so desires. Facilities for washing hands should be conveniently located near toilets and plentiful enough so that all children may wash in a minimum of time upon entering the building after play. Toilets must be easily accessible to classrooms and upon entering the building after recesses and play.[14] All these should be kept scrupulously clean. Antiseptics may be used but not deodorants. If things are really clean, no deodorant is necessary. It has been found that adequate space given to mirrors relieves congestion in the washroom.

Heating and ventilating. The heating system should be such as to keep a uniform temperature with a variation not exceeding 3° F. at a plane 3

[9] *Ibid.*, pp. 217-243.

[10] *Ibid.*, p. 222.

[11] *Ibid.*, pp. 221-225.

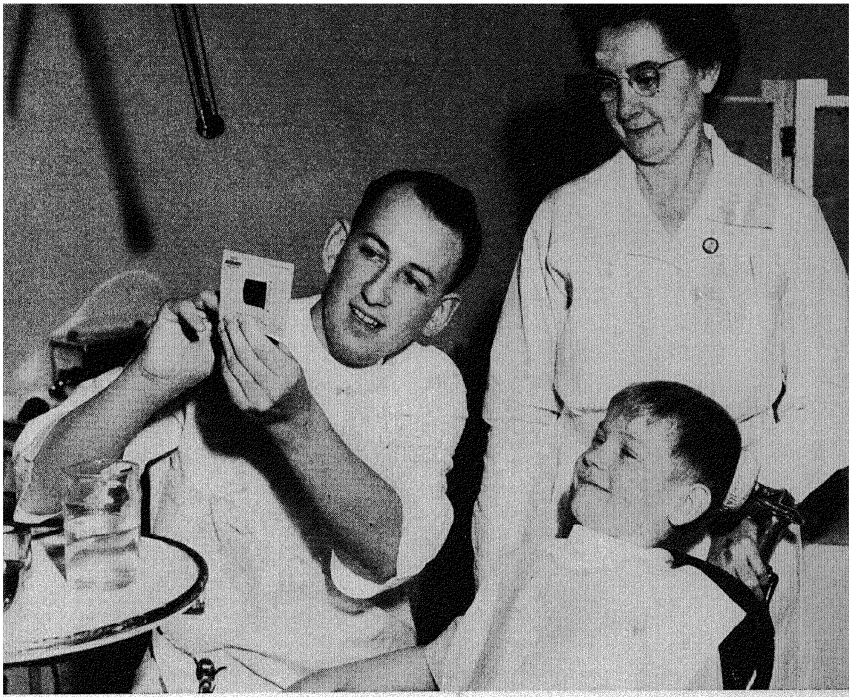
[12] See especially *Ibid.*, Chapter XIII. See also Index "Lighting."

Mathew Luckiesh, *Light, Vision and Seeing* (New York, D. Van Nostrand Company, Inc., 1944).

"School Plant and Equipment," issues of *Review of Educational Research,* Vol. 15, February, 1945, and Vol. 18, February, 1948.

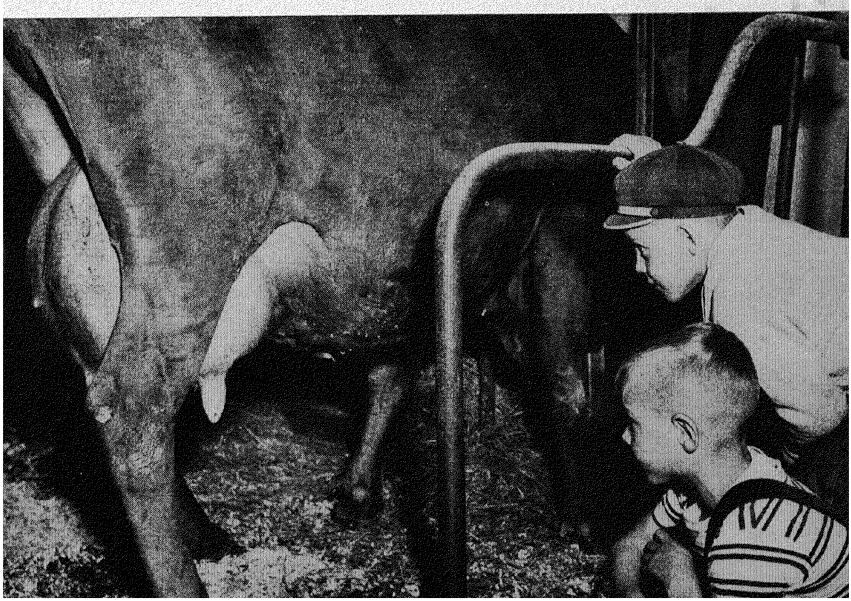
[13] See also *American School Buildings, op. cit.,* pp. 250-255, for more detailed standards.

[14] *Ibid.*, p. 162.



Our friend, the dentist

"Which one does the chocolate milk come from?"



Embarrassment disappears

Reality culminates health study

feet above floor level. The temperature should be between 68° and 72°. The air in the room should be changed three times an hour.[15] If the heating and ventilating are not automatically controlled, the teacher is responsible for them. The use of germicidal lamps and aerosols for the control of airborne diseases among school children is still in the experimental stage.[16]

Sanitation. Everything in the building should not only be clean, but look clean. Woodwork and walls should be kept painted, the floors sealed, and the surfaces of the desks or tables well finished.

Safety. In a broad sense, all the factors mentioned above contribute to the safety of the persons in the school. *American School Buildings*[17] lists some of the more important conditions of buildings and grounds that are important for health and safety.

Atmosphere. There is another phase of school environment which is fully as important to the all-around health of the child. That is the emotional atmosphere in which he lives. It is one potent factor in the child's own mental health. The atmosphere of a school is a tangible thing. Almost every one has felt it upon entering a building. It may be one of disorder and confusion, of repression and furtive movements, or it may be one of peaceful orderliness or of purposeful activity. Pupils going to school under either of the first two conditions have a great handicap, whereas in the two other situations many problems adjust themselves and vanish. This whole problem of emotional health is discussed at greater length in Chapter 3. This chapter has many implications for principals as well as for teachers.

Some of the factors that make the school a healthful or an unhealthful environment may be mentioned. One is the personnel. If the teachers are themselves happy, alert, and healthy, they will do much toward instilling the same qualities in their charges. Irritability, lack of interest, and a pessimistic outlook are equally contagious. The type of discipline in the school as a whole is important. Whether it is repressive, is lacking in control, or is firm and reasonable direction makes a great deal of difference in the child's personality. A third very important factor which is just beginning to be included in this category is the curriculum. A free and active curriculum, involving ideas and materials interesting to the child and within his comprehension, helps to develop a happy, secure, and useful type of person, whereas the formal, rigid procedure dependent largely on memorization of facts is apt to kill interest and initiative, and because much of it is beyond his comprehension, it leads to insecurity.

Thus, personnel, general control, and the curriculum are definite factors in the pupil's mental health. And since mental health and outlook is a large factor in physical health, they must be considered.

[15] *Ibid.*, pp. 147-156.
[16] *Ibid.*, pp. 156-157.
[17] *Ibid.*, pp. 168-182. See also *Safety Education, op. cit.*, Chapter XI.

IV. HEALTH EDUCATION

The instructional program. The classroom program is a large part of a school's planning for healthful living. It is also most easily accomplished under any school set-up or conditions. Under this heading comes:

1. Developing habits and attitudes favorable to healthful living, emotional as well as physical
2. Providing information when needed as a basis for healthful living
3. Developing ideals, attitudes, and habits of safety in all situations
4. Providing physical activities conducive to good health
5. Bringing to conscious recognition of the pupils the recreatory possibilities of healthful physical activities
6. Providing opportunities to live, work and play together in situations conducive to the development of good emotional health

The objectives of school health instruction have been more vividly stated by Oberteuffer: [18]

1. To secure behavior (action, conduct, habits) favorable to a high quality of living, and to point the way to those acts which, if performed, will assure this high quality.
2. To assist in the development of a well-integrated personality, enjoying life with no reliance upon false superiorities or inferiorities but with a stability rooted in a capacity for accurate self-appraisal.
3. To clarify thinking about personal and public health matters, to remove the superstitions, the false beliefs, the ignorance; and to substitute the accuracy of science, where available, for the darkness of falsehood and misbelief.
4. To participate in the development of a security against the threats and destructive forces of the world through the acquisition of scientific knowledge, the formation of scientific attitudes, and the practice of scientific behavior.
5. To enrich the life of the community and commonwealth through the collective action of individuals well taught in the advantages of health measures to be taken for the common good.
6. To establish the ability in students to see cause and effect, to recognize consequences, and thus to preserve life and the fullness of it.

These various factors must all be interwoven into a program suited to each grade level, yet continuous and consistent with the best learning practices. Learning about health is not sufficient. The individual child must build his own health. All experiences must be directed toward helping the child make his decisions, and do his own building.

Habits and attitudes. The development of habits and attitudes toward healthful living is present all through school. Whether the teacher is conscious of the fact or not, pupils are learning ways of doing things and ways of thinking about things. It is the school's responsibility to see that the school plant, the school situation, and school activities are such that

[18] Delbert Oberteuffer, *School Health Education* (New York, Harper and Brothers, 1949), p. 50.

the habits and attitudes developed are desirable ones. Throughout this chapter the emphasis is on physical health, since emotional health has been discussed in Chapter 3.

In the primary grades the main emphasis is, of course, upon learning to live in the school situation. Here is started the habit of coming to school clean and neat—clean clothes, clean bodies, clean hands and faces, clean nails, clean shoes, a clean handkerchief, clean teeth, and combed hair. These little children must learn to take care of themselves properly in school. Toilet habits must be checked. Hands must be washed, when necessary. Habits of drinking water at proper times and in sufficient amounts must be established. This is probably the most neglected of all health habits, partly because of limited facilities and partly because of teacher neglect. Routinizing this, however, would save much of the confusion resulting from individual pupils wanting drinks at inconvenient times.

The development of these habits should be started immediately, and maintained continuously. Within the limits of their ability, children respond readily to high standards when the teacher has developed the proper attitude toward them. The home background which the children have is, of course, a very important factor here. Standards may have to be modified to a certain extent in the poorer environments. A little ingenuity plus the desire on the part of the pupils can do much in any situation.

As the child grows older, more and more knowledge should be used as a basis for the development of attitudes and habits. Those already established should be dropped except for occasional reference in an appropriate situation. Those still needing attention should be stressed with new ones added at the higher levels.

A valuable study has been made of 3,512 elementary-school children from four to thirteen years of age in the public schools of New York state. Their personal health habits were checked by personal observation of both the parents and the teacher. They found the following situation: [19]

> Problems of eating, sleeping, exercising, and keeping clean were found to persist through the intermediate grades of elementary school. The habits of drinking milk and eating vegetables had not yet been established; children still ate candy between meals; problems of sufficient sleep increased in frequency; the amount of outdoor recreation decreased at the ages of eleven, twelve, and thirteen years, especially in the case of girls; and bathing, and washing the hands after going to the toilet appeared to be a less common practice in the intermediate grades than in the primary grades. The fact that only a few children showed improvement in the health habits that were studied is significant, although it would be well to have more objective data concerning the actual

[19] Florence C. O'Neill and Mary G. McCormick, *Everyday Behavior of Elementary School Children,* Bulletin No. 1057 (Albany, N. Y., University of the State of New York Press, 1934).

seriousness of some of the practices that conventionally are regarded as bad health habits. Equally significant are the facts that the slow children consistently showed what are usually considered as poorer health habits at all ages than the brighter children, and that a favorable home environment was clearly associated with good health habits.

The implication seems to be that the stress on developing health habits was dropped too soon. There are many evidences that there is great growth on the kindergarten-primary level but from then on the total environment seems to be detrimental to them rather than helpful. Special care should be taken at this level to continue the development of good health habits and attitudes.

It is important that teachers have some similar check on their own pupils if the work in this field is to be effective. Observation and report by an adult is almost always more valid than pupil reporting. Not only because they understand better what is wanted, but the force of social approval is apt to color the child's report.

Subject-matter of health education. The topics covered under any of the various programs are much the same. There is no complete agreement, however, as to the subject-matter.

An idea of the areas covered by grades can best be obtained from a study by Robert C. Smith.[20] He analyzed twenty-five of the better courses in health which listed outcomes of instruction. All but three of the courses had been published since 1940, and a third of them in 1946-47. His results by health areas and grades are given in Table XV. His study showed marked overlapping from grade to grade and lack of sequence in many courses. Overlapping to fix concepts is desirable. However the sequence should provide for further development in the concept.

The most comprehensive study for selecting the material for health instruction was done by the Denver Public Schools. Their findings are presented in one chart[21] for the primary grades and one for the intermediate grades (Table XVI, pages 534-543).

Column One lists the areas.

Column Two, "Developmental Characteristics," was assembled from a survey of child growth and development studies.

Column Three, "Health Needs," was compiled from a survey of textbooks in health, reference books in health education and the latest health curriculums.

Column Four, "Health Interests," was determined by 161 teacher check lists, 100 interviews of teachers from kindergarten through grade four, and 3600 responses of pupils from grades four to twelve.

Column Five, "Committee Recommendations," was developed through interpretation and interrelation of the ideas in columns two, three, and four.

[20] Robert C. Smith, "An Analysis of Elementary School Courses of Study in Health," an unpublished M. A. thesis. On file State College of Washington Library, Pullman, Washington, 1947.

[21] Arthur J. Lewis, Chairman, *Health Interests of Children* (Denver, Colorado, Public Schools, 1947), pp. 66-69.

The program of health education of the Denver schools was revised to meet the recommendations listed in column five (odd pages 535 to 543).

TABLE XV *

RELATIVE EMPHASIS OF HEALTH AREAS BY GRADES FOR TWENTY-FIVE COURSES OF STUDY

(This table should be read as follows: seven courses of study emphasized Foods and Nutrition in the kindergarten, twenty-four in grade one, twenty-two in grade two, etc.)

	Frequency by grades									
Areas of instruction	K	1	2	3	4	5	6	7	8	*Total*
Foods and nutrition	7	24	22	24	16	19	16	10	8	147
Personal cleanliness	9	23	21	20	15	19	14	8	6	135
Safety	5	12	12	15	16	17	15	5	5	102
Sleep and rest	6	20	17	14	15	11	7	4	3	97
Care of clothing	7	18	11	14	12	10	7	3	2	87
Control of communicable diseases	3	9	8	10	14	14	15	5	5	83
Exercise in work and play	7	17	16	13	11	7	6	1	2	80
Care of the teeth	4	15	12	15	10	9	9	1		75
Care of the eyes	2	10	9	10	14	12	11	4	3	75
Posture	3	12	12	13	11	12	9	2		74
Environmental cleanliness	3	10	8	13	10	8	10	2	5	69
Alcohol, tobacco, and narcotics	2	7	5	6	10	12	12	4	6	64
Mental hygiene	2	3	3	6	7	6	4	1	1	36
Weighing and measuring program	4	4	4	5	4	5	6	2	2	36
Study of community health departments		3	2	2	4	5	8	5	5	34
First aid		2	3	5	4	6	7		1	28
Elimination	1	4	3	3	6	3	2	1	1	24
Health examinations	4	5	4	3	1	1	3	1	1	23
Social adjustment		2	2	2	2	4	3	1	1	17
Study of the systems of the body					1	1	2	4	5	13
Care of colds	1	3	2			2	3	1		12
Daily morning inspections	2	2	1							5
Care of the feet					1	1	1			3
Care of infections		1								1

* From Smith, *op. cit.*, p. 19.

There are two main criteria for the selection of material for each grade level. First, the child should not be given material that is beyond his ability to understand thoroughly and use. The capacity of the child must be considered—physically, socially, and intellectually. Second, no material should be given that can not be justified as contributing directly to pupil or community health, or as essential in understanding the health and growth process. Each proposed unit should be rigorously checked against these criteria and also evaluated to make certain it also contains the most important concepts and information on that particular topic.

Learning experiences. Favorable attitudes can best be developed in relation to health as in other areas by encouraging and assisting rather than forcing or compelling; by emphasizing achievement and the positive phase (the do's) rather than failure and the negative phase (the don't's); by stimulating a feeling of coöperation, of mutual help among the

TABLE

SUMMARY CHART FOR KINDER

(Denver

Areas	Developmental Characteristics	Health Needs
	Characteristics significant to more than one area of health Intense interest in self, purposes individualistic Rapid progress in perfecting fundamental skills, habits, attitudes Curiosity concerning people and things about him Socialization by the sixth year Interest in things that closely touch his life Delight in pleasing adults Pronounced physical growth	
Keeping Fit		Developing habits of personal cleanliness Caring for eyes, ears, and nose Developing proper attitudes toward physical examinations
Group Health		Participating in the control of contagious diseases Developing habits of sanitary practice, including the use of handkerchief, toilet practices, and the like
Protection from Disease		Preventing colds, skin diseases, and other infections Developing proper attitudes toward vaccination
Dental Health	Loss of baby teeth Development of first permanent teeth Development of six year molars Frequent decay of teeth	Caring for teeth and gums Developing proper attitudes toward dental examinations Adjusting to the loss of baby teeth
Good Eating Habits		Observing a regular time for eating Having sufficient rest and quiet to aid digestion Chewing and eating slowly

* A summary of developmental characteristics, health needs, and health interests of pupils in the kindergarten and primary grades (ages 5, 6, 7, 8), together with recommendations for health instruction.

XVI

GARTEN AND PRIMARY GRADES *

Public Schools)

Health Interests	Aspects of Health Education Listed at Grade Levels Where Greatest Emphasis Might Best Be Placed
Notes to the Reader Numbers in parenthesis refer to grade levels at which most interest was shown Where a topic is repeated at other grade levels, the reader should be aware of different emphases which might be given at each level ** Indicates pupil interest above the 90th percentile * Indicates pupil interest between the 75th and 90th percentile	
** Developing habits of personal cleanliness	Developing habits of personal cleanliness (K, 1, 2, 3) Caring for eyes, ears, and nose (2, 3) Developing proper attitudes toward physical examinations (K, 1, 2, 3)
** Developing habits of sanitary practice	Participating in the control of contagious diseases (K, 1, 2, 3) Developing habits of sanitary practice (K, 1, 2, 3)
** Developing proper attitudes toward vaccination	Developing proper attitudes toward vaccination (K, 1, 2, 3) Preventing colds, skin disease, and other infections (K, 1, 2, 3)
** Caring for teeth and gums * Adjusting to the loss of baby teeth ** Developing proper attitudes toward dental examinations	Caring for teeth and gums (K, 1, 2, 3) Adjusting to the loss of baby teeth (K, 1, 2) Developing proper attitudes toward dental examinations (K, 1, 2, 3)
* Observing a regular time for eating * Observing cleanliness in eating	Observing a regular time for eating (K, 1, 2, 3) Chewing and eating slowly (K, 1, 2, 3) Having sufficient rest and quiet to aid digestion (K, 1, 2, 3) Observing cleanliness in eating (K, 1, 2, 3)

TABLE

SUMMARY CHART FOR KINDER

(Denver

Areas	Developmental Characteristics	Health Needs
Selection and Composition of Food	Marked need for adequate food	Choosing foods wisely Knowing some of the basic food requirements of the body
Rest and Relaxation	Marked need for adequate rest and sleep	Learning how to relax Getting right amount of sleep Resting through change in activity
Personal Appearance		Developing habits of good posture Wearing suitable clothing
Personality Development	Less timidity, shyness by eighth year Development of interest in group by seventh year of age Growing consciousness of approval or disapproval of group by eighth year of age A start in learning manners at eighth year Inner urge to be friendly by eighth year Struggle to impress others by eighth year	Developing self-confidence and poise Getting along with own group Getting along with adults
Social Health	Outstanding curiosity Understanding of his place in family Undifferentiated social relationship with opposite sex	
Safety	Development of such skills as riding a tricycle Precision in command of tools by seventh year of age	Developing habits of safety on way to and from school, at school, at play, and at home
Vocations		Appreciating the work of health helpers in the community

XVI—*Cont'd.*

GARTEN AND PRIMARY GRADES—*Cont'd.*

Public Schools)

Health Interests	Aspects of Health Education Listed at Grade Levels Where Greatest Emphasis Might Best Be Placed
	Choosing foods wisely (2)
* Learning how to relax * Getting right amount of sleep	Learning how to relax (K, 1, 2, 3) Getting right amount of sleep (K, 1, 2, 3)
	Developing habits of good posture (K, 1, 2, 3) Wearing suitable clothing (K, 1, 2, 3)
	Developing self-confidence and poise (K, 1, 2, 3) Getting along with his group (K, 1, 2, 3) Getting along with adults (K, 1, 2, 3) Learning manners (K, 1, 2, 3)
	Developing wholesome attitudes toward sex curiosities as they arise (K, 1, 2, 3)
** Developing habits of safety on way to and from school, at school, at play, and at home	Developing habits of safety on way to and from school, at school, at play, and at home (K, 1, 2, 3)
* Appreciating the work of health helpers in the community	Appreciating the work of health helpers in the community (2)

TABLE

SUMMARY CHART FOR

(Denver

Areas	Developmental Characteristics	Health Needs
	Characteristics significant to more than one area of health Concern about health in general, not as it relates to individuals Curiosity about how things function, interest in physical world Constant increase in weight and height—girls overtake boys in height and weight Desire for skill in athletic activities Variety and instability of interests—11 and 12 years	
Keeping Fit		Strengthening of habits of personal cleanliness Caring for eyes, ears, and nose Taking physical examinations and building on the results
Group Health	Little concern for public health—9 and 10 years Growing consciousness of community and world affairs—11 years Initial participation in social service activities—11 and 12 years	Participating in the control of contagious diseases Strengthening habits of sanitary practices
Cause of Disease	Greater immunity to disease	Knowing about germs and where they are found Understanding the cause of disease and sharing in its prevention
Protection from Disease		Being protected by vaccination Preventing colds, skin diseases, and other infections
Structure and Function of the Body		Knowing the structure of the body

** A summary of developmental characteristics, health needs, and health interests of pupils in intermediate grades (ages 9, 10, 11), together with recommendations for health instruction.

XVI—*Cont'd.*

INTERMEDIATE GRADES **

Public Schools)

Health Interests	Aspects of Health Education Listed at Grade Levels Where Greatest Emphasis Might Best Be Placed
Notes to the Reader Numbers in parenthesis refer to grade level at which most interest was shown When more than one grade is indicated, the grade at which there is greater interest is shown in bold type Where a topic is repeated at other grade levels, the reader should be aware of different emphases which might be given at each level ** Indicates pupil interest above 90th percentile * Indicates pupil interest at 75th to 90th percentile	
** Strengthening habits of personal cleanliness (4, 5, **6**) ** Caring for eyes and ears (4, 5, **6**) Taking physical examinations and building on the results (5)	Strengthening habits of personal cleanliness (4, 6) Caring for eyes and ears and nose (6) Taking physical examinations and building on the results (5)
Participating in the control of contagious diseases (6) Strengthening habits of sanitary practice (**4**, 5) Knowing about purification of water and milk (4)	Participating in the control of contagious diseases (6) Strengthening habits of sanitary practice (**4**, 5) Knowing about purification of water and milk (4)
* Appreciating the conquest of disease (6) Knowing about germs and where they are found (**5**, 6)	Appreciating the conquest of disease (6) Knowing about germs and where they are found (**5**, 6)
Being protected by vaccination (**4**, 5, 6) * Preventing colds, skin diseases, and other infections (5, **6**)	Being protected by vaccination (4) Preventing colds, skin diseases, and other infections (5)
Knowing how the body is made (6) Knowing how the body works (5)	

TABLE

SUMMARY CHART FOR

(Denver

Areas	Developmental Characteristics	Health Needs
Dental Health	Appearance of 12 year molars	Caring for teeth Understanding the development of teeth Having dental examinations
Good Eating Habits	Frequent digestive disturbances Security sought through over-eating and overactivity Interest among girls in home-making activities	Observing a regular time for eating Chewing and eating slowly Having sufficient rest and quiet to aid digestion Observing cleanliness in eating
Selection and Composition of Foods	Poor choice of diet	Choosing foods wisely Knowing some of the basic food requirements of the body Understanding the effects of food on the body
Stimulants and Narcotics		Understanding the effects of tobacco and alcohol Understanding the effects of headache remedies and anaesthetics
Rest and Relaxation	Increased resistance to fatigue, but extensive need for rest and relaxation	Learning how to relax Resting through change of activity Relaxing through hobbies and recreation Getting the right amount of sleep
Personal Appearance	Indifference to personal appearance	Improving posture Selecting suitable and attractive clothing Wearing suitable clothing Practicing good grooming
Personality Development	Struggle to impress others Adjustment of some children by bullying, adjustment of others by retiring Timidity in presence of opposite sex—Awareness of self—11, 12, 13 years Desire for identification with crowd—11, 12, 13 years	Developing self-confidence and poise Getting along with own group Getting along with adults

XVI—*Cont'd.*

INTERMEDIATE GRADES—*Cont'd.*

Public Schools)

Health Interests	Aspects of Health Education Listed at Grade Levels Where Greatest Emphasis Might Best Be Placed
** Caring for teeth and gums (4) Understanding the development of teeth (4, **5**) Having dental examinations (4, **6**) Knowing the cause of defects and bringing about their correction (**4**, 6) Understanding the structure and function of teeth (**4**, 5)	Caring for teeth and gums (4) Understanding the development of teeth (5) Having dental examinations (4, 5, **6**) Knowing the cause of defects and bringing about their correction (**4**, 6) Understanding the structure and function of teeth (**4**, 5)
Observing a regular time for eating (6) Chewing and eating slowly (5) Having sufficient rest and quiet to aid digestion (4, 5, **6**) Observing cleanliness in eating (4, 5)	Observing a regular time for eating (6) Chewing and eating slowly (**5**, 6) Having sufficient rest and quiet to aid digestion (6) Observing cleanliness in eating (4)
** Choosing foods wisely (**4**, 5, 6)	Choosing foods wisely (**4**, 5, 6)
* Understanding how tea and coffee may affect the body (6)	Choosing foods wisely (**4**, 5, 6)
* Learning how to relax (4) * Scheduling time to lessen fatigue (6) * Getting the right amount of sleep (**4**, 5)	Learning how to relax (4) Scheduling time to lessen fatigue (6) Getting the right amount of sleep (**4**, 5)
* Improving posture (5, **6**)	
** Getting along with adults (6)	Getting along with adults (6)

TABLE
(Denver
SUMMARY CHART FOR

Areas	Developmental Characteristics	Health Needs
Social Health	Interest in all living organisms and processes related to sex—11 and 12 years	
First Aid		Knowing how to care for simple injuries
Home Nursing	Interest among girls in home-making activities	
Safety	Interest in school affairs Readiness among boys to take daring chances to get group approval—12 years	Developing habits of safety on way to and from school, at school, at play, and at home Preventing fires Riding a bicycle safely
Vocations		

children rather than competition or rivalry; by having the child compete against his own record rather than competing with others; by encouraging self-inspection and self-checking up to the limits of the children's ability rather than teacher inspection or the inspection by one another; by dealing individually and privately with individual children's problems, rather than discussing them before the class.

Pupils should only be asked to report on what the teacher can herself see. This is true at all ages. There should be no continuous required reporting of home behavior, such as amount of sleep, number of baths, food habits, and so forth. Such reporting is often inaccurate at best and puts a premium on the "good story" rather than actual performance. All such checking should be done directly with the home. Here is another opportunity for close coöperation between home and school.

A few materials on hand have been found by teachers to be of great assistance. A mirror in the room is a great reminder and helps in self-checking. A box of paper handkerchiefs may be used to supply forgetful children and to motivate a better memory. One group even had their own shoe-shining box.

XVI—*Cont'd.*

INTERMEDIATE GRADES—*Cont'd.*

Public Schools)

Health Interests	Aspects of Health Education Listed at Grade Levels Where Greatest Emphasis Might Best Be Placed
	Developing wholesome attitudes toward curiosities as they arise (4, 5, 6)
** Knowing how to care for simple injuries (5, **6**)	Knowing how to care for simple injuries (6)
* Preparing food for a sick person (4, **6**) ** Taking temperature and pulse (**4**, 6) * Taking care of simple illnesses (6)	
Developing habits of safety on way to and from school (**4**, 5), at school (4, **5**, 6), at play, and at home (**5**, 6) Preventing fires (4, **5**, 6) Riding a bicycle safely (4, **5**, 6) Playing in water safely (5, **6**)	Developing habits of safety on way to and from school (4), at school (5), at play, and at home (5) Preventing fires (5) Riding a bicycle safely (5) Playing in water safely (5, **6**)
Studying health helpers in the community (5)	

Besides these, schools must furnish clean, adequate (not minimum) facilities, such as lavatories with warm water (at least in cold weather), soap, paper towels, mirrors, toilet facilities, and drinking fountains as well as generally good clean physical surroundings.

At the primary level health work should be limited largely to the morning inspection, continual observation, incidental teaching when it is pertinent, and occasional short discussion periods. If mid-morning lunches are given, this furnishes a good opportunity for developing correct habits and attitudes. If there is a school lunch-room or cafeteria, there is a further opportunity which will be discussed later. The emphasis here is almost entirely on habits and attitudes. Every opportunity for giving pupils a chance to *do* the desirable thing, must be made the most of.

Short units may be developed either for health education directly or in connection with some other phase of the pupils' activities. Here as elsewhere the objectives are mainly to develop attitudes and establish habits. Information and health knowledge should be given only when and to the extent that it will be understood and be a definite contribution

in establishing desirable conduct by forming a basis for attitudes and habits.

The same principle holds here as in any other phase of education, that only such information should be given as can really be understood. The amount naturally increases through the grades. As children develop and their ability to understand increases, they may be given more and more of the factual basis of healthful living. As is true in any other field, this knowledge is more functional if presented in an active learning situation. If the pupils develop or recognize their need for certain information and set about obtaining it, it will be more vital to them and more functional.[22]

School lunches. One of the best instances of a good learning situation occurs in schools having cafeterias. Food and food habits are one of the most fundamental of the health education topics. The cafeteria furnishes a life situation under teacher supervision. The conditions for learning are ideal. Eating is a universal need and interest. Discussion of the situation and basic information can be given beforehand. Then the situation is a real and not an artificial one, which can be followed by discussion and evaluation.

Health examinations. One learning situation which is pregnant with possibilities is the health examination. For some time before the actual examination, it may be discussed as to its purpose, what it may discover, and how it will be done. During the time that the examinations are being given, those who have been examined will have many questions that are vital to them. This is a most valuable situation, and the teacher should take advantage of it to the full extent. After the examinations are over, there will be many problems that can be the energizing point for considerable discussion.

Problems of under- and overweight and malnutrition will lead to discussion of food and food habits. Eye difficulties show the need for eye hygiene, particularly the lighting problem. Decayed teeth again brings up the problem of food as well as dental hygiene. And so on down the list. Care must be taken that no personal examples be used unless the child himself volunteers the information. Then it should only be used to introduce or add to the study of the general problem, never emphasized or used to the embarrassment or glorification of the child.

Demonstrations and discussions. The learning experiences of value are demonstrations, visual education, and the working out of problems based on specific conditions. It is valuable to correlate health concepts with those of other fields around a common problem when the relationship is vital and purposeful and an addition to the meaningfulness of both situations. When there is no natural connection, such correlation is meaningless. The use of devices such as songs, posters, special lecturers, and the

[22] For additional teaching suggestions see in the bibliography Grout, Chapter VI; *Health Education,* Chapters X-XII; Oberteuffer, Chapters III-VII; and Turner, Chapters VII-IX.

like has little value unless it comes as the result of a felt need and desire on the part of the pupils.

Audio-visual resources are many in the field of health. Numerous films and film strips are applicable. Exhibits, models, and charts are plentiful. Posters and flat pictures are available from many sources. Professional associations and industrial firms publish much that is of value.[23]

In carrying on any discussion or problem in the field of health, it is particularly important that the whole trend be positive rather than negative. How we keep well rather than the study of sickness and disease should be the main point of emphasis. An understanding of healthful good living and a proper knowledge and attitude toward doctors are aims rather than the development of an overconsciousness of ill health and possibly hypochondria.

Also information should be presented calmly and unemotionally. Many topics in health education are liable to bring forth a very emotional reaction from many people. No matter how one *feels* on the subject, a teacher must never allow the pupils to become aware of any but a calm and impartial presentation of the problem.

Criteria for learning experiences. The most helpful criteria for the selecting and presenting of learning experiences in health education have been discussed by Oberteuffer. The criteria presented are adapted from two sources. He points out that: [24]

1. All health teaching must be focused directly at the impact it makes on a given person.
2. Experiences must be identical with the needs and interests of the learner.
3. Daily problems of living present the most favorable media for effective learning about health.
4. "Health" itself is not a good motivating factor; (a) health is a means to other ends and (b) overstress on health involves the danger of making hypochondriacs out of people.
5. Experiences and teaching should be provided which furnish the pupil data to help him make good choices where health decisions are involved.
6. The order of thought presentation should be from the particular to the general, each new principle or generalization being developed through intimate, concrete individual experience before reaching its final form.
7. The content material must be scientifically accurate throughout and in thorough accord with the best available knowledge in the biological sciences.
8. The experiences should foster the concept of health as a qualitative result of the interdependent functioning of all the vital systems, involving the mental and social aspects of living as well as the physical.
9. The experiences should constantly interpret health from a social point of view, explaining health in terms of its social uses.

[23] For sources consult Grout, Chapter VIII; *Health Education,* Chapters XVI and XVII; Oberteuffer, pp. 171-173 in the bibliography.

[24] Items 1-6 are adapted from Oberteuffer, *op. cit.,* Chapter III, where he discusses the implications of each. Items 7-16 are from a longer list given in Delbert Oberteuffer, "Preliminary Study of Criteria for the Selection and Organization of Learning Experience in Health Instruction," *Research Quarterly* of the American Physical Education Association, Vol. 6, October, 1935, pp. 63-65.

10. The experiences should be arranged on an activity basis, giving constant opportunity for healthful practice, and aimed more at the development of conduct than at the acquisition of knowledge.

11. There should be an abundance of material of varying difficulty so as to admit of choice suited to the needs of the individuals who differ in capacity and experience.

12. The experiences selected should be progressively graded so as to provide for continuous growth in healthful living, and, if possible, reliable instruments of measurement should be applied to note the progress of each learner.

13. The general tone of the experiences with respect to all controversial issues should be one of discreet judgment, free from prejudice or inaccurate content. The learnings should never be colored with emotional bias for want of scientific data.

14. The experiences should require a mastery of a minimum of scientific terminology, enough to handle the ordinary health processes intelligently.

15. The experiences should provide frequent and specific opportunity for correlation with other areas in the curriculum and with other parts of the health education program.

16. The activities of the course should lead to coöperation and understanding between the school and the home and community.

Sex education. Much can be done in the elementary school to help youngsters understand themselves and each other better. Much more can be done than usually is done. That parents are interested in the school doing more is clear from the parents who have seen the film *Human Growth*. Ninety-seven per cent of them want their children to see it.

A helpful characterization of children's interest in areas of sex is: [25]

"In the first of these stages, which covers the ages of about four and five years, the child's natural curiosity is very active, his interest is spontaneous, his questions direct. He wants to know about his own body, about the origin of babies, about the differences between sexes. Interest in these facts is as matter of fact to him as is his interest in other phases of life. This is the time for helping him to establish objective attitudes toward the body and for giving him simple, accurate answers to his questions. In these years is laid the foundation on which he will build in later years.

The second stage, which covers the age period from about six to nine years, is a latent period so far as interest in sex is concerned. If the child's early curiosity has been satisfied in a direct, unemotional, and unembarrassed manner, he will seek little additional information during these years.

The third period comes at approximately ages ten and eleven, when the physical and emotional changes of puberty begin. The body develops, the social interests change, the child begins his transition to adulthood. He needs to understand what is happening to him and he needs assistance in making the social adjustments which his new outlook demands. This is the time for him to begin to work out the ideals and standards he will follow in his association with members of the other sex.

The fourth stage is the adolescent age, the years from about twelve to twenty-two. Interest in sex is now full blown. Dating, love, choosing a mate, marriage, reproduction, and family relationships are of great interest and importance to both boys and girls."

[25] Lillian L. Biester, William Griffiths, and N. O. Pearce, *Units in Personal Health and Human Relations* (Minneapolis, University of Minnesota Press, 1947), pp. 1-2.

Guides in the development of sex aspects of health education have been listed as follows: [26]

1. Sex education—good or bad—really begins at home, long before the child starts to school.
2. Sex education in schools should be integrated with the total health education program at all grade levels. It should not be singled out for separate or undue emphasis.
3. Example on the part of parents and teachers is far more effective than precept.
4. Sex education should be couched in terms easily understood by the child and should make use of examples within his experience.
5. Sex information should not be forced upon the uninterested child but should be adapted to his maturity level at each stage of growth.
6. Sex should be presented in a dignified vocabulary.
7. Sex should be taught positively by showing its nobility in terms of creative drive and family happiness rather than negatively through the enumeration of horrible examples of immorality.
8. Sex anatomy and physiology should be considered as just another body system; due allowance must be made for modesty.
9. Reliable source materials for further study and information should be furnished; books should be left on open shelves.
10. Sex needs to be taught as a life-function that is normal, clean, respectable, and admirable.

Biester and others [27] give suggestions for teaching in situations that arise during kindergarten and first grade. They also give an excellent unit on "How do Living Forms Reproduce?" for grades six to eight. Such films as *Human Growth* [28] can be used at about sixth grade level naturally when studying the various phases of the human body. It is advisable to arrange parental showing before and discuss the purposes and intent of the teaching.[29]

In the Winnetka schools special courses are taught at the fifth and seventh grade levels. In the fifth grade the children have an interest in their bodies and elementary physiology is explored at that level. The text *My Body and How It Works* by Dorothy Baruch and Oscar Russ [30] is used along with educational films. There is a chapter on reproductive

[26] The authors have selected the ones most applicable to the elementary school from a complete listing in Joint Committee on Education of the National Education Association and the American Medical Association, *Health Education,* 3rd ed. (Washington, D. C., National Education Association, 1948), pp. 57-58.

[27] *Op. cit.,* pp. 7-16.

[28] E. C. Brown Trust, University of Oregon Medical School, Portland.

[29] For additional discussions see in the bibliography Lamkin, Chapter IX; Oberteuffer, pp. 137-149; Grout, Chapter VI; *Health Education,* pp. 57-58, 141, 144. For primary teachers James L. Hymes, *How to Tell Your Child About Sex,* Public Affairs Pamphlet No. 149 (New York, Public Affairs Committee, 22 East 38th Street, 1949) is most useful. One should be familiar with the approach through family life education. See bibliography *Education for Family Life* and Stevenson. It is obvious that we have little understanding of the sex attitudes of the various social cultural levels as pointed out in Alfred C. Kinsey, *Sexual Behavior in the Human Male* (Philadelphia, W. B. Saunders Company, 1948).

[30] Harper and Brothers, 1934.

organs. The seventh grade "Biology" course consists of a general survey, likenesses and differences in people, human physiology including a section on reproduction. In the eighth grade, work in human relations is developed. Observation in a nursery school is used to supplement the work.

Safety education. Almost all safety teaching in the schools is related to safety in crossing streets and other phases of going to and from school. Traffic deaths are played up in newspapers, organized and summarized until they assume undue importance. Not that less attention should be given to bettering these conditions, but other sources of danger must have more attention. A recent bulletin [31] makes these statements:

Accidents are the leading cause of death among young people.

Accidents in 1946 in the five to fourteen age group caused five times as many deaths as heart disease, six times as many as pneumonia.

In 1947, 6,300 children (five to fourteen) were killed by accidents.

One out of three of these deaths was the result of a motor-vehicle accident.

Slightly over half of all student accidents reported occurred either on school premises or going to and from school.

Burns are the chief cause of accident fatalities to children (five to fourteen) in the home, with firearms second; fourteen and nine per cent of all accidents in this age group.

Drownings caused nineteen per cent of the deaths in the age group five to fourteen.

On the bright side:

The decrease in accidental deaths to children (five to fourteen) since 1922 (to 1947) was 32 per cent.

Out of 100,000 children between ages of five to fourteen in 1930 and 1946, deaths were due to

1930	1946	
36	29	Accidents
19	5	Pneumonia and influenza
12	4	Tuberculosis
13	2	Appendicitis
12	5	Heart disease

Sources of accidents. The child pedestrian is most likely to get killed or injured when (1) crossing between intersections, (2) crossing at corners where no signals exist, (3) walking in roadway (walking with traffic), and (4) crossing where signals operate.[32] The late fall, when short days bring darkness during the traffic peak, is a most hazardous period. These data show that safe rules for pedestrians must be taught. Even though signals are operating, the child must be taught to look carefully.

Accidents in school vary with age. For the young child the danger spots are in the classroom, running falls, and on the slides, teeters, swings, and

[31] National Safety Council, *Accident Facts, 1948 Edition* (Chicago, National Safety Council, 1948).

[32] *Ibid.*, p. 48.

bars. For the sixth grade child the gymnasium, baseball, running, and stairs have become danger spots. Home accidents decrease with age, though in the sixth grade they are 20% of all accidents. Motor vehicle accidents decrease through the seventh and eighth grades, then begin to increase. Unorganized activities account for slightly more accidents than do organized activities in the sixth grade.[33]

Injuries on apparatus occur most frequently on the following in the order mentioned: swings, teeters, slides, turning poles, ladders, rings, and bars.

In the classroom, injuries on furniture account for a large part of the accidents, with injuries on construction work coming next; and then in the order mentioned, miscellaneous injuries, falling down, injuries by pen or pencil, injuries by another child, injuries on doors, and burns from radiators.

Accidents in the buildings, not in the classrooms, were caused largely by falls on stairs and injuries on doors, and about equally by injuries at fountains, burns on radiators, falling in halls, collisions, injuries on lockers, and miscellaneous.

It is the responsibility of the school to attempt to lower this tremendous accident rate. First, they must analyze and inspect their plant and surroundings to minimize dangerous situations. This has been discussed further in the section on the school environment. The second way is the classroom teaching of safety in all the various situations, and the third is supervision and instruction in the situations where accidents are likely to occur. Material is available which is valuable in both these instances.[34]

Let it be mentioned here, and urged emphatically, that when a certain situation involves danger, to say that that situation should be avoided is all wrong. It becomes ludicrous when one says that one should avoid taking baths because he is likely to slip in the tub. In many other situations, however, some parents and teachers preach the idea that "you must not do that, you might get hurt." In some instances, of course, this is desirable, but usually the better approach, psychologically as well as from the point of view of safety, is, "Do it this way, it is much safer." Or, "This is the way we do it."

Classroom teaching of safety. Too much dependence should not be put on the effectiveness of classroom teaching of safety. The general problem can be presented, the most serious sources of accidents discussed; and ways of preventing them enumerated. This, as is true of all teaching, is more effective when the pupils do the investigating and draw their own conclusions. Presentations should be vivid and meaningful. Dramatization, demonstration, and visual aids are very effective. A very valuable project for the upper grades is to conduct a survey in their school, the homes in their community, or the streets of their city, to discover where

[33] *Ibid.*, pp. 92-93.

[34] *Safety Education, op. cit.*, Chapters X and XI.

the majority of accidents occur, what are their causes, and how the situation may be bettered.

Fire safety. Did you know that fires destroy many schools each year? That school fire loss would build eight million-dollar elementary schools a year? Were you ever in a $1,000,000 elementary school? A wonderful school can be constructed for that money. Each school needs to have a program of fire safety beginning with the kindergarten. It should include dangers from matches and playing with fire, what to do in case of fire in school, in the home, and in cars. In the later grades it should deal with hazards in the home, farm (in rural areas), in motor vehicles, and in the forest. In all grades holiday and seasonal hazards should be stressed, such as Christmas trees, fireworks, and bonfires. Prevention and what to do in case of fire in various situations should be stressed.[35]

Teaching through actual situations. Attitudes and facts may be developed in the classroom, but habits must be formed in actual situations. After all, on right habits depends most of our hope for safe living. School people cannot say, as with many things, that they have no control over the actual life situation of the child, for over half of the accidents occur in school buildings or grounds and in going to or from school. The school has direct jurisdiction over those occurring in school buildings or grounds and partial jurisdiction over going to and from school, and in certain situations over some of the other areas of accident.

Whenever the school does have jurisdiction, there should be intelligent and constructive supervision. Positive suggestions of "Do it this way," "This is the best way to use this apparatus," "Keep your eye on the ball when you're playing," "Lay the bat down—don't throw it," "Put the stick in the trash can so you won't stumble on it," etc., develop patterns of action which in turn become habits of safety. The physical-education period is one in which to develop habits and attitudes of safe playing.

Excursions provide an excellent opportunity for training. Every phase of the trip may be discussed, demonstrated, and dramatized—keeping together, crossing the street, getting in and out of automobiles or street-cars, and all other phases of the journey.

Some accidents occur because of the immaturity of development and lack of complete coördination of the body. Young children and children who seem to lack this muscular control should be trained to take extra precautions. They should hold the stair rail in going up and down stairs; they should not run in the halls (not because of some disturbance, but because most halls are somewhat slippery and the floor is apt to be very hard). They should never carry a pen or pencil around with them in their hands, and they should be led to take other similar precautions.

Safety patrols. Another very effective means of education and control is the organization of safety clubs or patrols. Only very reliable and capable

[35] For detailed suggestions see U. S. Office of Education, *A Curriculum Guide to Fire Safety,* Bulletin, No. 8 (Washington, D. C., U. S. Office of Education, 1946), 31 pp.

students in the upper grades may belong. Membership may be by room election, supplemented by faculty selection, and usually is a much coveted honor. The members of this group are assigned patrol duty at all crossings surrounding the school and at all reasonably close and dangerous crossings. They have no direct control over traffic, but the pupils who are crossing are to obey the patrol and wait until he says it is safe to cross. His very presence is a reminder to drivers, and many stop who would not otherwise. Of course, there must be fairly close supervision of these patrols to see that they are dependable, "on the job," and that the amount of authority invested in them is not too much for their own good. Most children who are selected respond very nicely, and it is an excellent educative experience for them.

The large number of pupils riding school buses requires the teaching of safety in regard to waiting, entering, leaving, and behavior on the bus. It is recommended that each bus have a bus patrol of two pupils, who live near the end of the route. They function at each stop and while the bus is on the road.

Safety education as far as motor-vehicle accidents are concerned has been extremely effective. If safety education has been so effective in this field, why should it not be equally effective in others?

Objectives of safety education. As with health education the child must build his own program of safe practices. The objectives for safety education have been well stated as follows: [36]

1. To help children recognize situations involving hazards.
2. To develop habits of conduct which will enable children to meet situations of daily life with as little danger as possible to themselves and others.
3. To develop habits of carefulness and obedience to safety rules at home, on the streets, in school, or at play.
4. To teach children to read, understand, and obey safety rules and regulations.
5. To teach children safe conduct in the use of streetcars, private automobiles, and buses.
6. To develop habits of orderliness and carefulness in the use of playthings, tools, common articles of the home and school, and in the use of fire.
7. To develop alertness, agility, and muscular control through rhythmic exercise, play, games, and other physical activities.
8. To teach children to coöperate to prevent accidents and the taking of unnecessary risks involving physical dangers.
9. To develop wholesome attitudes concerning (a) law and law enforcement officers, (b) the safety of themselves and others, and (c) organized efforts to assure safety for all.
10. To give children actual experiences in desirable safety practices.

The actual program can be incorporated in social science units, science, and health; and developed through language, numerical, and creative experiences.

[36] *Safety Education, op. cit.*, p. 67.

Physical education. Physical education in the elementary school is characterized by two things: It is informal, and it is largely non-competitive. When first introduced in the schools, physical training largely consisted of formal drills and callisthenics. The trend has changed, and now the work is practically all in the form of games and informal activities, dancing and rhythms, and self-testing activities. The only competition now looked on with favor is that of a child with his own record. Intramural contests are stimulating and if well-controlled do no harm. Competitive racing, swimming, etc., is likely to overstrain the child physically, as he is motivated to exert himself beyond what is best for him.

Aims. Chenoweth and Selkirk[37] give four aims of physical education:

1. Development of the organic powers of children, i.e., the actual improvement in health by improvement of the various organs of the body
2. Development of neuromuscular skills, i.e., skill in athletics and grace in movements
3. Development of interest in play and recreation, i.e., the ability to gain pleasure from games and physical activity
4. Development of social and moral standards, such as good sportsmanship, faithfulness to duty, devotion to serious tasks, team work, and numerous other qualities.

The two first mentioned aims are a case of physical development of certain parts of the body through use and activity. These may be developed by a carefully planned informal program of games and dances, when special consideration is given to the muscles and body structures used in each. The third aim is that of gaining pleasure from games and physical activity, and may surely only be acquired through the playing of such games and the carrying on of such activity under informal conditions with the predominant purpose that of gaining pleasure.

The last mentioned aim has been used as an argument for retaining physical education in the curriculum, and by many has been considered the main advantage. Much of this has been theorizing and wishful thinking. Not that these characteristics may not be developed under these conditions, but in most cases they will not appear spontaneously. Like anything else they must be taught; and like any other personality characteristic, they are best taught indirectly. This means that the teacher of physical education must be conscious of the traits she wishes to develop and of ways whereby the child will be led naturally to respond in certain desired fashions. Then, just as in any other situation, character training should be continually and consciously planned for by the teacher so that the pupils will continually and unconsciously respond in ways that are consistent with the aim established.[38]

[37] Laurence B. Chenoweth and Theodore K. Selkirk, *School Health Problems* (New York, Appleton-Century-Crofts, Inc., 1937), p. 308. See also 1947 edition.

[38] See Goodwin B. Watson, "Personality Growth through Athletics," *Journal of Health and Physical Education*, Vol. 9, September, 1938, pp. 408-410.

Bases for organizing physical education. O'Keefe and Fahey[39] discuss the development of children of various ages in relation to the physical education program:

> Children in the primary grades are usually interested in casual competition with themselves or with one other person rather than in team competition. A child will comment that he climbed a rope higher than he did the preceding time or that he jumped the rope more times than his friend jumped the rope. Children of the age group six, seven, and eight years will play a simple game, cheer vociferously every time a teammate scores a point, and then forget to ask the final score when the playtime is over.
>
> Beginning in the fourth grade and continuing thereafter, interest in competitive activities is more pronounced than in the earlier grades. Eleven-, twelve-, and thirteen-year-old children enjoy organized games of soccer, volleyball, and softball with other groups. This is the time when one group enjoys challenging another group within the school. If teachers and adults do not place too much importance on winning, this type of competition is excellent. Care needs to be taken that no child becomes overfatigued or that only the few superior skilled performers comprise the room team.
>
> Children eleven, twelve, and thirteen years old, in passing through the period of rapid body growth with the consequent bodily weaknesses, emotional stresses, and physiological readjustment, should not be encouraged to participate in interschool competition because of its strenuousness and its possible harm.

There is some further evidence based on experience and the knowledge of the child's growth which is valuable in planning a physical-education program.[40]

> By the age of five years, according to experimental findings, the basic pattern or rivalry in accomplishment has been established. By nine or ten, according to the limited available findings, the average child is ready to join in organized team work and to bend individual activities to fixed reflexes and the common purpose of members of a team.

The period from the fifth to the sixth birthday seems to be the time that children are ready to learn to swim of their own accord.[41] It is a much-to-be-desired situation when every school has access to a swimming pool, and swimming is a part of the regular school activities from the kindergarten on. It has not only safety and health value but is most important recreationally.

Motor skills are highly specific. Children need a wide variety of experience in various activities. Children should have some direction in their free play to increase the range of activities and to insure their attempts in those things in which they can have a moderate degree of success. It is a definite influence on personality, whether or not children have success in attempting physical activities. Failure sets up fears, whereas success

[39] Ruth Pattric O'Keefe and Helen Fahey, *Education Through Physical Activities* (St. Louis, C. V. Mosby, 1949), pp. 20-21.

[40] National Society for the Study of Education, *Child Development and the Curriculum, Thirty-Eighth Yearbook,* Part I (Bloomington, Ill., Public School Publishing Co., 1939), p. 71. See also O'Keefe and Fahey, *op. cit.,* pp. 22-25.

[41] *Thirty-Eighth Yearbook, op. cit.,* pp. 71-75.

brings self-confidence more readily and surely than in any other area. Their abilities here may include or exclude them from the social group.

As far as the specifics of physical education are concerned, a good reference is the *Physical Education Curriculum* by William Ralph LaPorte.[42] It is a report climaxing nine years of research in this field. Suggestions from it are given in Section V.

There are several excellent sources for games and activities.[43] O'Keefe and Fahey describe a great many activities classified as indoor and outdoor, and include a number of self-testing activities.

Recreation. The worthy use of leisure time is one of the seven cardinal principles of education. Healthful living has a peculiar relationship to leisure time, particularly to recreation. Health gives more zest to play, and healthful active play increases one's health. Schools have a twofold responsibility here: that of giving pupils opportunity to become skillful in activities which will aid recreation all through their lives, and second, that of providing space and equipment for the use of children at the present time. Here also the community has the responsibility of providing space and equipment for all who wish to use it. In the case of the schools this means school playgrounds, gymnasiums, tennis courts, swimming pools, golf courses, and the like.

The school's responsibility. The school should build up attitudes favorable to active healthful recreation. Physical education has a peculiarly important position in this respect. Through it can be developed a very large portion of the activities that constitute the recreation of many people. The fact that more people do not turn to physical activities for their recreation may be laid to the failure of the program of their time to enable these people to enjoy and succeed at such activities.

Many times only a few games or sports are taught which are usable in later life. Few have the opportunity to participate in group games such as baseball, basketball, soccer, or football. High schools are doing considerable work with tennis and some with swimming. Many are providing both social and square dancing.

Activities for recreation. The elementary program should include badminton, swimming, rhythms, and dancing (which makes the way much easier for social dancing in high school), roller skating, ice skating, skiing, playing ping pong, horseshoes, and hiking. All these activities may be carried on quite readily in the years after school and will furnish as well wide experience and enjoyable exercise on the elementary level. Swimming is the only one that offers much difficulty in the way of equipment if the program is on an informal basis where children are not all doing the same thing at the same time.

[42] William R. LaPorte, *The Physical Education Curriculum* (Los Angeles, University of Southern California Press, 1942).

[43] See the following references in the bibliography, Broady and French, Hughes, O'Keefe and Fahey, Sehon and others, and Shaefer.

School as community center. According to many, the school has the further responsibility of becoming the center of the community's recreational life. The community must furnish recreational facilities for its people. If the school and community funds can be pooled so there will be no unnecessary duplication, both school and community will benefit by having better facilities. There are often petty problems of responsibility which appear, but by taking a common sense point of view, and planning and organizing at the outset there is no reason why there should be any difficulty. This arrangement should give the schools much more playroom and gymnasium equipment, a swimming pool, and many other advantages.

Whatever the arrangements, the school must do all in its power to build attitudes and abilities for the enjoyment of participation in games of physical activity which may carry on through life.

Relations with parents. The primary purpose of health education is the establishment of health habits. Closer coöperation is needed between parents and school. A number of schools are meeting with parents to discuss the health habits of children. Others are sending information to parents which list the habits and other suggestions for health.[44] The most complete publication is *Denver Serves Its Children.*[45] It includes detailed information on who helps children when they are sick, when maladjusted, when handicapped, and deals with welfare provisions, recreational, cultural, and job opportunities. It has a concluding section on how parents and teachers can work more closely together.

V. TYPES OF PROGRAMS

There are several ways of setting up programs in the area of health and physical education. The usual plan sets up aims, specific objectives, and problems or subject-matter for each grade in health, safety, and physical education. The teaching of the first two is usually incidental in the primary grades with physical education taken care of by games. In the upper grades the approach is much more definite, and textbooks are used to supplement the informal activities.

Recently a number of states have published comprehensive bulletins on health providing rather thorough discussions of health instruction, services, and environment.[46]

[44] Typical of such are Tacoma City Schools, *Your Child Goes to School* (Tacoma, Washington, 1948), p. 8.

[45] Denver Public Schools (Denver, Colorado, 1948), 48 pp.

[46] Examples are State of Illinois, *A Basic Plan for Health Education and the School Health Program* (Springfield, Illinois, Department of Public Instruction, 1944).

Department of Education, *Healthful Living in School and Community,* Bulletin No. 3 (Montgomery, Alabama, The Department, 1946).

A Guide to the Teaching of Health in the Elementary School (Albany, New York, University of the State of New York, Bulletin No. 1328, November 1, 1946).

The duplication of much material which exists in easily available sources might be questioned in terms of professional time as well as money.

Resource units. Certain courses, instead of suggesting specifics for each grade, outline resource units. Illustrations of these are the New York State course and Madison, Wisconsin. The areas covered in each are:

New York State [47]	*Madison, Wisconsin* [48]
Foods and eating practices	Food and health
Cleanliness and health protection	Keeping clean
The physical environment	Making a healthful community
Care of the mouth and teeth	Care of the body
Care of the eyes and lighting	Getting along with others
Hearing and the care of the ears	Living a well-rounded life
Sleep and rest	Happy family living
Growing up socially and emotionally	Safety-prevention of accidents
Stimulants and narcotics	Simple first aid
	Simple ways of controlling disease
	Health heroes

Each resource unit in the Madison course gives a brief statement concerning the significance of the topic, knowledges to be gained, attitudes and understandings to be developed, habits to hope for, suggested activities, suggested evaluations, and sources of material.

Safety education. As one of the newer topics, safety education is under discussion as to the area in which it should be presented. There are those who argue that it should be a part of the social-studies program areas, whereas in most schools it is included in health and physical education. It seems logical that it should be largely considered in this field, as there are so many natural opportunities here. However, the answer to all arguments is that safety education, just as any other area, should not be considered as a water-tight compartment, but should be a part of any situation where it is pertinent and has value.

Safety education is often integrated in other units. The separate bulletins usually list a series of separate units. An example of separate listing is the Illinois Guide.[49]

PRIMARY GRADES (1-2-3)

Unit I.	Safety On The Way To And From School
Unit II.	Fire Prevention
Unit III.	Safety at School
Unit IV.	Safety at Play
Unit V.	Safety at Home
Unit VI.	Safe Play in Winter
Unit VII.	The Treatment of Injuries
Unit VIII.	Safety in Public Places
Unit IX.	Safety During Vacation

[47] New York State Bulletin No. 1328, *op. cit.*

[48] Madison City Schools, *A Guide to Health Education for Elementary Schools* (Madison, Wisconsin, 1947).

[49] State Department of Public Instruction, *A Teachers' Guide in Safety Education* (Springfield, Illinois, The Department, 1948).

INTERMEDIATE GRADES (4-5-6)

Unit I.	How the Community Helps Protect Life and Property in the Streets
Unit II.	How the Community Provides Protection From Fires
Unit III.	How Safe Is Your Home?
Unit IV.	First Aid
Unit V.	Your School
Unit VI.	Community Recreational Facilities
Unit VII.	Vacation Activities

Health experiences in large units. In the newer type of program, units in other areas are analyzed for opportunities for health, safety, and physical-education teaching. Possibilities have been outlined as an aid to the teacher; but these are only suggestive, as she should recognize and be guided by the needs of her group in selecting activities. In addition there will be need for direct health teaching, which should arise out of special needs or be the outcome of some school activity. The main idea of this type of program is that of taking advantage of situations already existing rather than creating health situations.

The Fort Worth Course of Study lists possibilities arising in social-studies experiences. Some of those in one unit for the first grade are as follows: [50]

HOW THE COMMUNITY HELPS THE FAMILY SECURE FOOD, CLOTHING, AND SHELTER

1. Plan excursions.
   a. Decide on suitable clothing to wear, such as shoes, wraps, hats.
   b. Discuss and demonstrate correct breathing and posture while walking.
   c. Discuss the value of sunshine and fresh air which we will get in making the excursion.
   d. Talk about the necessity of going to the toilet before starting on a trip.
   e. Discuss the following safety measures to be observed.
      (1) Cross streets only at corners and at right angles.
      (2) Keep to the right when walking through crowds, going up stairs, and going through doors.
      (3) Stay with group of children on school trips.
      (4) Keep hands off other people.
2. Make excursions to grocery stores, markets, bakeries, and dairies.
   a. Observe the provisions for preserving and keeping food sanitary.
      (1) Refrigerators
      (2) Covered containers
      (3) Screens
      (4) Sprays
   b. Find foods that help build sound teeth, such as milk, vegetables, oranges, and other fruits.
   c. Point out the foods that make a balanced breakfast, lunch, or dinner.
   d. See how many leafy vegetables you can find on the vegetable rack, and tell how often we should eat them.

[50] *Health and Physical Education,* Curriculum Bulletin No. 201 (Fort Worth, Texas, Fort Worth Public Schools, 1937), pp. 127-129.

e. Point out the foods that belong in the following groups:
(1) Fruits
(2) Vegetables
(3) Whole-grain cereals
(4) Milk products
f. Find a new vegetable you would like to ask your mother to prepare for you.
g. Point out the foods that aid in the elimination of waste.
h. Note and give reasons for
(1) Washing fruits and vegetables before eating
(2) Washing milk bottle before opening
(3) Refraining from handling food when making purchases
(4) Keeping flies away from food
i. Find foods that require vigorous mastication to build sound tee facial muscles.
j. Note the beverages that are good for growing children.

3. Make a scrap-book, using pictures which show:
a. Things that make us grow
b. A good breakfast, lunch, or dinner
c. Suitable clothing for various kinds of weather
4. Compose original stories, plays, and rhymes relating to health.
5. Plan a picnic or party.
a. Decide on a well-balanced menu.
b. Discuss the importance of such health measures as:
(1) Washing hands before eating
(2) Eating slowly
(3) Good table manners

Programs of physical education. The report of the comprehensive and long-time study by LaPorte in the field of physical education presents among other materials a suggested program for the primary and elementary levels together with the suggested time allotment in percentages.

Variety should be used in planning the daily program using three or four activities of different types each day, and each day during the week should differ from each other. LaPorte suggests the following as a week's program for the fourth grade: [51]

Monday	Children's Polka Bat Ball
Tuesday	Bears and Cattle Baseball Distance Throw Arch Ball Relay
Wednesday	Children's Polka Long Ball
Thursday	Circle Chase Head Stand Hopping Relay
Friday	Dutch Couple Dance End Ball

[51] LaPorte, *op. cit.*, p. 38.

TABLE XVII *

PROGRAM FOR THE PRIMARY LEVEL (GRADES 1-3)

Activity	*Time*
1. Rhythmical Activities "Farmer in the Dell," "Looby Loo," "Mulberry Bush," "Chimes of Dunkirk," "Old Roger Is Dead," "The Swing," "Carrousel," "Jolly Is the Miller," "Oats, Peas, Beans," etc.	25%
2. Fundamental Rhythms Walking, running, skipping, galloping, whirling, swaying—to accompaniment.	20
3. Hunting Games Cat and mice, Jack be nimble, squirrel in trees, cat and rat, hound and rabbit, midnight, lame fox and chickens, etc.	20
4. Relays Cross over relay, bean-bag passing relay, stoop and stretch relay, eraser relay, tag the wall relay, etc.	15
5. Stunts and Self-Testing Activities Duck walk, rabbit hop, human rocker, crab walk, forward roll, frog hand-stand, etc.	10
6. Athletic Games of Low Organization Boundary ball, dodge ball, hand polo, kick ball, bound ball, etc.	10
Total	100%

* William R. LaPorte, *The Physical Education Curriculum* (Los Angeles, University of Southern California Press, 1942), p. 26.

NOTE: Descriptions of above typical activities will be found in most game books and elementary school manuals, such as Neilson and Van Hagen, *Physical Education for Elementary Schools.*

The time allotments indicated in percentages are approximate, merely to indicate the relative importance. These will vary somewhat with grade, relays receiving emphasis from the second grade on, and athletic games from the third grade on. In many cases the activities included under the several headings will be selected from the subject-matter of a given unit of work or center of interest around which the entire program of a given grade may be centered. It is very important that the physical-education activities be integrated with the rest of the program of this level.

The same bulletin has [52] a Health and Physical Education Score-Card for Elementary Schools. This furnishes a basis for evaluating the program of activities, outdoor areas, indoor areas, organization and administration of class programs, and medical examination and health service.

Other courses stressing physical education are the North Carolina Course [53] and the Illinois Course.[54] Each has a description of games appropriate to the elementary school.

[52] *Ibid.*, pp. 64-70.

[53] State Department of Public Instruction, *Physical and Health Education for Elementary and Secondary Schools* (Raleigh, North Carolina, The Department, 1940).

[54] State Department of Public Instruction, *Health and Physical Education for the Elementary Schools of the State of Illinois* (Springfield, Ill., The Department, 1944), Circular Series A, No. 17.

TABLE XVIII *

PROGRAM FOR THE ELEMENTARY LEVEL (GRADES 4-6)

Activity	*Time*
1. Athletic Games of Low Organization Basket-ball type: captain ball, captain basket-ball, corner ball, line basket-ball, nine-court basket-ball, newcomb, six-court basket-ball, six-hole basketball, quadruple dodge ball. Playground ball type: bombardment, bat ball, circle strike, end ball, fongo, hit-pin baseball, long ball, one and two old cat, triangle ball, and work up. Soccer type: advancement, circle soccer, corner kick ball, field ball, kick ball, punt back, rotation soccer, simplified soccer, soccer dodge ball, and soccer keep away. Volley-ball type: bound ball, feather ball, net ball, schoolroom volley ball, and sponge ball.	25%
2. Rhythmical Activities (including fundamental rhythms, folk, square, and social dancing) Broom dance, Dutch couple dance, Pop Goes the Weasel, Bleking, Virginia Reel, Sellengers Round, Ace of Diamonds, Gustaf's Skoal, Seven Jumps, Norwegian Mountain March, Lottie Is Dead, etc.	30
3. Hunting Games Bears and cattle, circle chase, gathering sticks, two and three deep, catch of fish, last man, pom-pom pullaway, all stand, club snatch, cross tag, dare base, duck on a rock, prisoner's base, etc.	15
4. Individual Athletic Events (self-testing) Batting for accuracy, base running, baseball throw for accuracy, basketball pass for accuracy—for goal—for distance, pull up, push up, broad jump, high jump, soccer kick for goal—for distance, etc.	10
5. Relays Arch ball relay, hopping relay, stunt relays, all-up Indian club relay, over and under relay, shuttle relay, stride ball relay, skin the snake relay, etc.	10
6. Tumbling Stunts Head stand, forward roll, backward roll, cartwheel, heel click, wooden man, jump the stick, Indian wrestle, Eskimo roll, front foot flip, knee and toe wrestle, hand wrestle, knee spring, elephant walk, triple roll, etc.	10
Total	100%

* William R. LaPorte, *The Physical Education Curriculum* (Los Angeles, University of Southern California Press, 1942), p. 28.

NOTE: Descriptions of the above typical activities can be found in most game books and elementary school manuals.

The time allotments in percentages are approximate, to suggest relative importance. The selection of activities as in the primary level should be adapted closely to the center of interest or culture area being studied at the time in a given grade. It is suggested that the self-testing athletic events be practised as an integral part of the corresponding game of low organization and that many of the relays be composed of elements of the same game. Tumbling stunts should be kept very simple, and rhythmical activities should include good variety.

VI. HEALTH SERVICE

Health service was one of the earliest and is one of the commonest phases of health education in the schools. There is enormous variation in the amount and kind of health service given. It may vary from the mere checking by the school nurse in cases of contagious diseases to a complete physical examination of each child by a skilled pediatrician, with home conferences, suggested remedial program, and a follow-up until the next examination.

The school health service must be the basis of much of the constructive health work done in any situation and, as such, should be as complete as possible. Such a program need not be expensive. Often doctors in the community will give a certain amount of time to examinations. School nurses are a good investment to any community which obtains its operating funds on the basis of average daily attendance, for their services do much to keep children well and in school.

The health examination. The frequency and extent of the health examination has been a major point of difference. Many object to having an examination on the grounds that it is so superficial as to be of little value. In addition it gives the parents the impression that an examination has been given and no further investigation is needed. It is usually true that it is impossible to take the time to give each child a complete examination each year. The solution which is gaining more and more favor is that of giving an examination every three years, making it as complete as possible, and requiring the presence of at least one parent. By concentrating on only one-third of the pupils each year, it is possible to do a much more thorough job. Special cases, of course, should be taken care of as soon as possible.

Opinion and practice concerning the provisions of examination and health services are undergoing rapid change. Complete medical services supplied by some states to its "oldsters" and the number of physically unfit for World War II have made many concerned about basic health policies concerning children. If the present trend continues it will not be many years before all children are given adequate health examinations with necessary corrective and follow-up procedures undertaken. Whether this is to be done at all public expense or at a combination of public and private expense is not an argument for these pages. That it needs to be done no one can doubt.

At the present time definite recommendations have been made concerning the health examinations by the American Medical Association. The following represents the important points for the elementary school: [55]

[55] Adapted from *Health Appraisal of School Children.* A report of the Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association (Chicago, American Medical Association, 1948), pp. 8-10. The arrangement is ours, but the wording is from the reference.

1. Scheduled medical examinations are examinations given by physicians according to a predetermined schedule with the purpose of:

a. determining the growth and development level of individual pupils so as to provide information on this topic to each teacher.

b. finding pupils in need of medical or dental treatment and identifying pupils who have health problems requiring attention other than medical and dental treatment.

c. finding pupils with non-remedial defects who may be in need of special education programs, enrollment in a sight-saving class, adapted physical education, or other special services.

d. finding evidence of faulty health habits and suggesting the correction of these habits.

These examinations differ from "special medical examinations" in that they are general examinations, have definite educational objectives, and are not directed to any particular part or condition.

2. *"Summer Round-Up" Medical Examination* of all preschool children expecting to enter school in the fall is recommended. This examination may be given by the family physician or by the physician serving the school and will include a careful health history and a careful checking of immunizations, particularly against whooping cough, diphtheria, smallpox and others as recommended by the local health department. This examination should include as a minimum: the eyes and lids; the ears, canals, and drums; the nose; the teeth and gums; the throat and mouth; the lymph nodes and thyroid gland; the heart before and after exercise; the pulse rate before and after exercise; the lungs; nutrition; the scalp and skin; the bones and joints; posture; the inguinal and the umbilical region for hernia in males; the feet; the nervous system; speech.

3. *Scheduled Medical Examination by Family Physician* of every school child every two or three years is recommended as offering a real service to the health of the child.

4. It is recommended that the family physician provide the school with a medical examination record of the child at school entrance and at approximately three-year intervals during his school life and more frequently if necessary.

5. It is recommended that the physician use the examination record form in use in the schools in his area.

6. *Scheduled Medical Examination by the Physician Serving the School* is recommended for all pupils not being regularly subjected to medical examination by their family physician. It is recommended that so far as it is practicable, these examinations be spaced approximately as follows:

a. preliminary to entrance to kindergarten or first grade

b. at entrance to fourth grade

c. at entrance to seventh grade

d. at entrance to tenth grade

7. It is recommended that a minimum of fifteen to twenty minutes of the physician's time be scheduled for the examination of each pupil, including consultation with the pupil or his parents.

8. *Special Medical Examination by the Physician Serving the School* should be done upon referral by parents, teachers, or nurses in those instances where there is no family physician or where the deviation from normal is so slight as to make questionable the necessity of referring the matter to the family physician.

9. *Specialists' Examinations* should be made as needed by oculists, dentists, surgeons, otologists, orthopedists, cardiologists, psychiatrists, and others, upon referral of the child, through arrangements made by the family and the family physician.

These examinations are especially important in that it is upon them that the assignment of atypical children to modified physical education, to lip reading classes, sight saving classes, opportunity classes, other special classes, and schools for the handicapped or exceptional child is most frequently based.

10. *Health Inspections.* In order to conserve the time of doctors and dentists, it is essential that teachers, nurses and dental hygienists assume the responsibility for making certain health inspections for the purpose of finding those children in need of the physician's or dentist's services.

The morning health review should be carried on by every elementary classroom teacher and by the homeroom teacher at the secondary level. This review should be supplemented by continuous observation for signs of illness, excessive fatigue, or undue tension.

The purposes of the physical examination are many. In the first place it acts as a motivating force for establishing attitudes for healthful living. It locates physical difficulties which might otherwise go unnoticed until a serious condition developed. Then the school can give those children with hearing, vision, and other defects better and more adequate handling. The school may, if they interpret the records impartially, find that their program needs modification—more rest periods, hot lunches, or a pleasanter atmosphere.

It is well to have, if possible, one of the parents present at the examination, for it saves time and leads to a better coöperation between school and home. The examination should be made without clothing (except in those few states which do not permit it) as a great deal of the examination is worthless if made through clothing. One of the functions of the classroom teacher is to prepare the children for the examination. The children should come to understand the purpose of the examination and the things they may expect to find out from it. They must realize that the examiner is there to help them, and that questions and problems concerning their health which have not been answered to their satisfaction should be presented at this time. The general procedure should be discussed so that the pupils will know what to expect and be prepared for it. After a class has had its examinations these should be used as a basis for classroom discussions. This aspect has been discussed under that heading.

The functions of the teacher at the health examination have been definitely stated: [56]

1. Prepare the children for the experience of the examination.
2. Assist in recording the examination if necessary.
3. Be present beside the doctor and nurse.
4. Report previous observations of signs of ill health and habits or mannerisms of significance.

[56] Adapted from Clifford Lee Brownell, *Principles of Health Education Applied* (New York, McGraw-Hill Book Company, 1949), p. 158.

5. Obtain information from the examination which will help in understanding and meeting the needs of each child.
6. Obtain information from all examinations which will help to orient the program of health instruction.

Records. Complete health records should be made out and kept on file. These should include all the information discovered at the examination. They should be kept up to date by the recording of all follow-up procedures as well as the remedial treatment received and any further incidence of disease or physical difficulty. This health record [57] should include:

Health history
Height and weight
(This should be taken three times or more during the school year.)
Nutrition
Eyes (condition)
Vision
Ears (condition)
Hearing
Nasal passages
Adenoids
Mouth and gums
Teeth
Tonsils
Throat
Glands
Skin
Lungs
Heart
Blood
Abdomen
Bones
Muscles
Posture
Feet
Puberty
Nervous system
General condition
Vaccination
Diphtheria inoculation
Whooping-cough inoculation
Does the child complain of mental or physical illness?
Illness in other members of family?
Remarks:
Advice given:
Date of examination:
Examiner:
All records of follow-up and remedial care.

The records developed in the Astoria study by Nyswander include a pupil health card,[58] which lists symptoms to be observed by the teacher in each grade. Such a record is most helpful. The items are:

Source	*Symptoms*
Eyes	Styes or crusted lids
	Inflamed eyes
	Crossed eyes
	Frequent headaches
	Squinting at book or blackboard
Ears	Discharge from ears
	Earaches
	Failure to hear questions

[57] Jesse F. Williams and Fannie B. Shaw, *Methods and Materials of Health Education* (New York, Thomas Nelson and Sons, 1935), pp. 143-147, or *Health Inspection Form for Children* (Washington, D. C., National Education Association).

[58] See Nyswander, *op. cit.*, pp. 64-65 or *A Guide for the School Health Service Program* (Olympia, Washington, State Departments of Public Instruction and Health, 1947), p. 35.

Source	*Symptoms*
Nose and Throat	Persistent mouth breathing Frequent sore throat Recurrent colds
General Condition and Appearance	Very thin Very fat Does not appear well Tires easily Poor muscle coördination Bad posture
Behavior Symptoms	Emotional disturbances Speech defect Twitching movements Nervousness Undue restlessness Shyness Nailbiting Excessive use of lavatory
Health Habits	Poor sleep habits Poor food habits
Absences for Illness	Colds Stomach upset Others (specify)

When there is no possibility of receiving medical help with examinations, even by a nurse, the teacher must assume the responsibility. There are several references [59] which give teachers background. Even where assistance is available the teacher needs to recognize problems.

Weight. There must be considerable caution in the interpretation of a child's weight. Height-weight-age charts are only a rough guide. A child's bone structure and type of build must be considered. The overweight child needs attention just as much as the underweight. One reason for so much stress on weight is to prevent or correct malnutrition. This condition may exist either because of lack of food through poverty or improper attention to the child's diet, or because of the failure of the child's system to make proper use of the food eaten. The condition should be diagnosed by the physician; the reason must be determined and correction made through home coöperation. Economic level of the home does not determine the presence of malnutrition.

Malnutrition is a serious problem. It lowers the child's resistance to disease. It lowers his energy both for physical activity and for his participation in the activities of the schoolroom. Continued malnutrition may even cause a real and permanent decrease in the child's mental ability and certainly interferes with his success in everyday life.

[59] See bibliography, especially James Frederick Rogers, Nyswander, and publications of your state department.

The child's growth pattern physically is highly individual.[60] Height-weight records need to be interpreted in terms of changes in the individual record, not in comparison to so-called height and weight tables. Failure to gain or marked spurts in an individual's record should be occasions for concern and referral to the school nurse or doctor.

A very simple but very effective method of evaluating measurements of height, weight and age has been developed by Dr. Norman C. Wetzel and is known as the "Wetzel Grid." [61]

The grid provides for charting height and weight of a child directly. It is marked off in seven channels. The channel in which the dot falls provides an immediate indication of physical status according to the following classifications: obese, stocky, good, fair, borderline, and poor. For the child who is in the borderline or poor channels a health examination is indicated. Marked across the channels are certain developmental levels. The developmental level is then plotted on another chart in terms of the student's age. This gives an immediate reading of the child's development in terms of other children his age.

Subsequent measurements of height and weight are plotted on the same charts. If the child continues in the same channel, it represents normal progress for him. Changes in the channels need to be immediately interpreted in terms of possibilities for examination. Of course if special treatment has been given to an undernourished child and he changes to a channel indicating better nourishment, that would be expected. Established boy and girl deviations have been provided for in the chart. It is possible to determine whether or not a child is developing at a normal rate, also to estimate the maturation level of individual children.

By actual test, grid ratings of physical fitness on 2,093 school children have been compared with physicians' estimates. Agreement reached 94 per cent for all children except those in the B_2 (fair) channel, on whom the physicians find it difficult to agree among themselves. The grid, moreover, caught 94.5 per cent of the subjects called "poor" or "borderline" by the physicians. Today approximately 30 per cent of all children are in need of more than routine check-up. The screening and identification of these particular children are greatly facilitated and reliably performed by simple inspection of their grid records. But final judgment on their physical fitness rests with the physician, who can take both the grid and the clinical results into joint account.[62]

[60] Walter F. Dearborn and John W. M. Rothney, *Predicting the Child's Development* (Cambridge, Mass., Science Art Publishers, 1941), 360 pp.

Katharine Simmons, *The Brush Foundation Study of Child Growth and Development: II Physical Growth and Development,* Monograph of the Society for Research in Child Development, Vol. 9, No. 1 (Washington, D. C., The Society, National Research Council, 1943).

[61] Norman C. Wetzel, "Physical Fitness in Terms of Physical Development and Basal Metabolism," *Journal of the American Medical Association,* Vol. 116, March 22, 1941, pages 1187-1195.

See also editorial in the same issue, page 1123.

Norman C. Wetzel, *Instruction Manual in the Use of the Grid for Evaluating Physical Fitness* (Cleveland, Ohio, National Education Association Service, Inc., 1941).

[62] *Ibid.,* 1195.

One study[63] found that nervousness was definitely related to hunger and diet in more than half of the instances of children who impress their teachers as obviously nervous and who as yet are free from signs of malnutrition and organic disease processes. They found that special mid-morning feedings of milk brought some improvement to about one-half of the children. However, special feedings of a food concentrate to build up calcium metabolism as well as to offset hunger pangs brought a net improvement in the nervous condition of more than 13 per cent in the case of the average child. All but 15 per cent of the children improved under this regime. It should be remembered, however, that hunger is not the sole cause of nervousness.

Vision. The usual test of vision tests only for acuity of vision and leaves untouched eye-strain, muscular imbalance, and the extent to which one eye is forced to do the work of both. This test, usually the Snellen chart,[64] should be supplemented in cases where there are any signs of eye-strain, by the Keystone telebinocular, *Massachusetts Vision Test*,[65] or by examination by an oculist or an optometrist. One physician[66] found that one fifth of the severe vision defects were measured as normal on the Snellen chart. He recommends the use of the telebinocular. School systems make various reports as to its usefulness, depending, to some extent at least, on the way it is used.

In one community of about 16,000 the school decided to use the Keystone telebinocular for testing the vision of all pupils who were reported as having a possible eye difficulty. Before any child was tested, the machine was taken to the office of each oculist and optometrist. The workings of the machine and test were explained. It was made very clear that the school was not trying to diagnose eye difficulties but that this machine could locate pupils whose eyes varied from normal as to (1) acuity, (2) fusion, (3) imbalance, (4) stereopsis.

If any child seemed to have any difficulty on any of the types of tests, it was recommended that he have an examination by a specialist. After this explanation and discussion every one approached was glad to coöperate and there was not one case of trouble with those sent for examinations. In another community, however, no preliminary contacts were made. A large percentage of pupils referred for examinations were reported as having no difficulty. Not understanding the cause for referring the case,

[63] D. A. Laird, M. Levitan, and V. A. Wilson, "Nervousness in School Children as Related to Hunger and Diet," in S. L. Pressey and J. E. Janney, *Casebook of Research in Educational Psychology* (New York, Harper and Brothers, 1937), pp. 16-21.

[64] Procurable from National Society for the Prevention of Blindness, 1790 Broadway, New York 19, N. Y.

[65] The telebinocular is available from the Keystone View Company, Meadville, Pa. and the *Massachusetts Vision Test* from the Welch-Allyn Company, Auburn, New York.

[66] James Honloose, "The Reading Problem from the Viewpoint of a School Physician," *Journal of Health and Physical Education*, Vol. 8, May, 1937, pp. 279-282. He suggests that all pupils' vision should be tested in first, third, seventh, and eleventh grades.

physicians gave a routine examination, and those whose usual examinations were not comprehensive many times did not find the difficulty.

Hearing is usually checked by the ticking of a watch. This is quite unsatisfactory where there is any hearing difficulty. The ticking of various watches varies in intensity and when there is a hearing difficulty, they furnish no measure of the extent of the difficulty. The audiometer 4A is another means of testing hearing. This is a machine for group testing of hearing acuity. Pupils who give indication of difficulty should be retested and the better score used. Those still unsuccessful in obtaining an adequate score should be referred to a physician.

The most valuable test of hearing is the pure tone audiometer.[67] The proper use of this equipment requires some specialized training. This individual test can be given nearly as quickly to a class as the more inaccurate group tests.[68]

Dental care. There has been considerable progress recently in the care and prevention of decay. Some definite trends are available; however, there is a great deal of experimental work under way which should be watched carefully. The schools should keep informed through their state health associations or the American Dental Association on the latest progress in the field.

The following comments are taken from recommendations of the American Dental Association and can be considered authoritative up to the time of publication of this volume.[69]

With our present knowledge of cause and control, there is little reason for widespread tooth decay with the resulting loss of teeth. Although tooth decay cannot be prevented entirely and no single factor can control the disease completely, by use of present facilities for prevention and treatment it is possible to reduce the amount of decay and thereby prevent the loss of teeth. . . .

A program of prevention and treatment consists of five parts: early and frequent examination, early preventive measures, early treatment of cavities, home care of the mouth, and diet.

The *first step* in the control of dental caries is early and frequent examination. Because tooth decay usually begins at an early age and increases rapidly, children should begin to receive dental examinations not later than the third year of life. Thereafter, examinations should be made as frequently as the dentist recommends.

The *second step* in the control of dental caries is early preventive measures. An important part of prevention is the topical (local) application of sodium fluoride. As has been said before, tooth decay is caused primarily by acids which are formed on the tooth in the presence of fermentable carbohydrates, principally sugar. It is surmised that fluoride makes teeth more resistant to these acids. A series of four separate applications are given preferably at age intervals of 3, 7, 10 and 13 years so that all teeth will be treated soon after they appear.

[67] The Maico Company.

[68] For suggestions for testing write for Warren H. Gardner, *Instructions for Conducting Audiometer Tests* (Washington, D. C., American Hearing Society, 817 Fourteenth St. N. W.).

[69] Adapted from *Dental Caries: Prevention and Control* (Chicago, Illinois, American Dental Association, 1949).

The four applications should be given at time intervals of from two to seven days. Although topical application of sodium fluoride has reduced tooth decay as much as 40 per cent among many children, such benefits may not be obtained for every child. It must be emphasized that sodium fluoride is only a partial preventive and that results vary somewhat among individuals.

Studies are now in progress in a number of cities to determine whether the addition of small amounts of sodium fluoride to drinking water will succeed in preventing tooth decay without causing mottled enamel. It is too early at present to evaluate the results of these investigations. There is no conclusive evidence at present that preparations such as tablets, dentifrices, mouthwashes or chewing gum containing fluorides are effective in preventing dental decay. Because fluorine is a poison, self treatment is dangerous.

There is some evidence, based on inconclusive laboratory and clinical studies, that ammoniated dentifrices also may reduce the incidence of dental caries. Because the preliminary studies seem promising, ammoniated dentifrices are being recommended. However, the real value of these preparations will not be known until the tentative conclusions are substantiated by satisfactory clinical evidence. Other preparations, such as synthetic vitamin K and penicillin, also are being investigated, but their use is not recommended until more evidence is available.

The *third step* in the control of dental caries is early treatment. Dental attention to beginning cavities is possible when the preceding recommendation of early and frequent examination is followed.

The *fourth step* in the control of dental caries is proper mouth hygiene. Since cleanliness of the mouth may aid in the prevention or control of dental disease, it is now believed that brushing of the teeth is of value especially if carried out soon after eating. The purpose of tooth brushing as an aid in controlling dental caries is to remove fermentable food particles.

The *fifth step* in the control of dental caries is a well balanced diet for good nutrition. Although our knowledge of the relation of nutrition to tooth decay is incomplete, a well balanced diet during childhood is important for proper growth and development. Although a balanced diet may not influence the caries attack rate, nevertheless a reduction of the consumption of sugar to a normal amount will be of value.

The use of vitamins and minerals in amounts in excess of those required for a normal diet has not been shown to have any relation to dental caries. Vitamin D appears to be of value in the formation of hard dental structures including the teeth themselves. However, there is no conclusive evidence that this vitamin aids in the maintenance of the fully formed teeth or in the prevention or retardation of dental caries.

The remainder of the items on the physical check-up require a typical medical examination.

Follow-up. The follow-up is by far the most important phase of the examination. In fact, aside from developing attitudes and interests which are furthered by the examination, there is little or no value unless something is done about it.

The first step is to get the information to the interested people, the teacher and the parents, if they were not present at the time. Then they must decide on remedial measures that are necessary. Does the child need to go to his family physician for further diagnosis or medical care?

Does he need to go to the dentist? Does there need to be some adjustment made in school to ease a vision or hearing or cardiac condition? Some one must be responsible for checking on all cases who need further care, making home contacts, and seeing that the school situation is adequately modified. The school nurse, with help from the classroom teacher, is the logical one to take this responsibility.

But this follow-up *must be done.* Without it much valuable time and money have been spent to no avail. It may be that several conferences with parents are necessary. These must be conducted in a way so as to place home and school on a firmer basis of coöperation. The teacher or nurse is not a dictator but a guide. She does not say what must be done; she merely points out the conditions and circumstances found in the examination, the type of treatment that would help, and the possible results if no care is given.

As far as the school situation is concerned, however, it is the teacher's or nurse's responsibility to make whatever adjustments seem necessary or to see that they are made. The teacher should also be responsible for seeing that records are kept on each child's health card of medical care, of changes in school routine, and their effect on the child.

In spite of its great importance, the follow-up is too often very poorly carried out. This part of the program costs little or no money, only planning, organization, and effort. On the success of it lies almost the whole value of the health service.

A definite procedure was recommended as a result of the "Astoria Study." About three weeks after school begins in September a day is designated as "School Health Day," by which time the teacher is to have her health records complete. Definite follow-up is begun on this day and continued until satisfactory completion has been accomplished.

The following procedures to be followed by the teacher and nurse are recommended: [70]

A. TEACHER

a. Teeth. On School Health Day, all teachers should notify parents directly on a form mimeographed by the school. This notification should be in the form of a dental certificate which is to be taken to a dentist in September and again in February. It should provide space for the dentist's signature, and should be returned to the teacher upon completion of the dental work, for the purpose of recording these data in the appropriate spaces on the new Health Card.

b. Height and weight. An entry of the child's height and weight, in September, November, February, and May, should be made on the monthly report card, which is sent home to parents.

c. Vision. Vision cases *without* glasses, in need of treatment (20/40, 20/50, 20/70 *or worse*) should *not* be referred by teachers to parents, but rather should be referred to the school nurse, who will notify parents of the need for correction.

Vision cases *with* glasses, *not* restored to normal (20/20), may be in need of additional corrections. Such cases should be referred by teachers directly to

[70] Nyswander, *op. cit.*, pp. 339-340.

parents. If there is written evidence that no further correction, with new glasses is possible or advisable at the present time, the teacher should insert the symbol T alongside the fraction of acuity of vision with glasses, to indicate that the pupil is still under treatment for his vision defect.

d. Hearing. Pupils with audiometer records, indicating a loss of hearing (minus 9, 12, 15), should be referred to the school nurse who will notify parents of the need for further testing, examination, or special treatment to safeguard the pupil against further loss of hearing.

e. Nose and throat. Pupils with unmistakable symptoms of nose and throat disorders, such as chronic nasal discharge, persistent mouth breathing, frequent sore throat, or recurrent colds, should be referred to the nurse for confirmation of the teacher's findings and for the notification of parents.

f. General condition and appearance and behavior. Pupils whose general condition and appearance indicate they are below par and those whose behavior deviates from the normal should be referred to the nurse for confirmation of the teacher's findings and for the notification of parents.

g. Classroom follow-up. Pending action by parents in seeking the advice of physicians, teachers should begin their classroom follow-up by assigning pupils with defects of vision or hearing to seats where they can see or hear to the best advantage; by giving below-par pupils special classroom instruction in the more abundant use of milk, fresh fruits and vegetables, eggs and cod liver oil, or some good source of vitamin D, and in the value of sufficient rest, adequate amount of exercise, plenty of sleep, fresh air, and sunshine.

B. School Nurse

The school nurse will assume the responsibility, aided by the coöperative efforts of the class teacher, for notifying parents directly of the existence of physical defects and behavior symptoms not already followed up by teachers, and will take such steps as may be necessary to bring pupils under treatment leading to correction or cure.

This plan showed a marked increase in the treatment, correction, and cure which was effected.

Informal observation. This year-round task of teachers and nurses is of great importance if properly and consistently done. The inspection is for two purposes. There is the daily inspection of all children to locate any who might be coming down with some disease or illness and the examination of those children returning to school after being sick. The latter is done to prevent children returning too soon while there may still be some danger of contagion. In many places every child who is out three or four consecutive days must obtain a health permit before reëntering school. These may be obtained from their own physician, the city health office, or a school nurse.

Concerning daily inspection, there is great variation of practice but not of opinion. Children should be studied as they enter the room to detect any unusual conditions. In case of the prevalence of some communicable disease, careful attention should be given to those symptoms.[71]

[71] A brief list of symptoms is given in James Frederick Rogers, *What Every Teacher Should Know About the Physical Condition of Her Pupils,* Pamphlet No. 68, rev. ed. (Washington, D. C., U. S. Office of Education, 1945), pp. 15-16.

Continuous observation of the pupils should lead to the detection of many conditions that too often go unnoticed. The signs and symptoms which teachers can detect in their day-by-day contact with their pupils, which represent possible indications of specific physical defects, chronic illness, neurological defects, inadequate nutrition, or poor health habits are found in the following table.

TABLE XIX *

SIGNS AND SYMPTOMS OF PHYSICAL CONDITIONS IN CHILDREN

Point of Observation	*Physical Signs*	*Behavior*	*Complaints*
General appearance and behavior	Excessive thinness; excessive overweight; very small or very large in body build for age; pallor; weary expression; poor posture; dark circles or puffiness under eyes.	Acts tired or apathetic; is easily irritated; makes frequent trips to toilet; has persistent nervous habits, such as muscular twitching or biting of nails or lips; is subject to spasms (fits), fainting spells, or frequent nosebleeds; gets short of breath after mild exertion and climbing stairs; lacks appetite; vomits frequently.	Feels tired; doesn't want to play; has aches or pains; feels sick to stomach; feels dizzy.
Hair and scalp	Stringy, lusterless hair; small bald spots; crusty sores on scalp; nits in hair.	Scratches head frequently.	Head itches.
Ears	Discharge from ears; cotton in ear; tired, strained expression long before day is over; watchful, sometimes bewildered expression.	Is persistently inattentive; asks to have questions repeated; habitually fails to respond when questioned; mispronounces common words; cocks one ear toward speaker.	Has earache; has buzzing or ringing in ears; ears feel stuffy; hears noises in head.
Eyes	Inflamed or watery eyes; frequent styes; crusted lids; cross-eye.	Holds book too close to eyes; squints at book or blackboard; persistently rubs or blinks eyes; reads poorly.	Head aches; eyes ache or smart; cannot see well (blurred vision).
Mouth and teeth	Cavities in teeth; excessive tartar at necks of teeth; malocclusion (uneven bite); irregular teeth; bleeding or inflamed gums; swollen jaw; sores in mouth; cracking of lips and corners of mouth.	Acts depressed or resentful if many missing teeth or severe malocclusion subjects him to teasing or adverse comments from other children. This behavior is especially likely to occur in adolescence.	Has toothache; mouth or gums feel sore.

* George M. Wheatley and others, *What Teachers See* (New York, Metropolitan Life Insurance Co., 1946), p. 31. Reprinted by permission, from *What Teachers See*, Metropolitan Life Insurance Company.

TABLE XIX (*Continued*)

SIGNS AND SYMPTOMS OF PHYSICAL CONDITIONS IN CHILDREN

Point of Observation	*Physical Signs*	*Behavior*	*Complaints*
Nose and throat (upper respiratory tract)	Frequent or long-continued colds; persistent nasal discharge.	Is frequently absent from school because of a cold; constantly clears throat or has frequent coughing or sneezing spells; is always sniffling or blowing nose; breathes persistently through mouth.	Throat feels sore or scratchy; has difficulty in swallowing; nose feels stuffy or sore.
Skin	Rashes or inflamed skin areas; scales and crusts; persistent sores, pimples and blackheads on face; boils; hives; persistent warts; accidental injuries, such as cuts, scratches, bruises, burns.	Is always scratching himself; is subject to skin irritations (hives, eczema, puzzling rashes, etc.) which suggest sensitivity to one or more substances (allergic manifestations); is easily bruised.	Skin itches or burns; is concerned about pimples, blackheads, and other skin conditions which affect personal appearance.

Teachers should be very familiar with the usual signs or symptoms of communicable disease. Rogers[72] lists them as:

Flushed face without normal cause
Rash
Red and watery eyes
Swollen glands
Running nose
Listlessness
Vomiting
Frequent coughing
Sneezing
Sore throat
Fever
Chills
Headache
Eruption

Another problem encountered is the reaction of the home, when children who apparently are "well enough to be up and around" are sent home to prevent the spread of whatever illness may be developing. Many parents do not want to bother with the child at home or think he would be better off in school. They do not yet understand the theory of prevention of disease well enough to be willing to follow it when it involves their own inconvenience. One great step forward is parental education along this line, through the child and by direct contact with the home. There will be a great advance in disease prevention when all parents will keep their children at home if they are coming down with a cold. Many other diseases may start with the same symptoms as a cold. Another suggestion that might be tried out is to devote one room of the school to a type of "isolation ward" where the children who are well enough may continue their work without endangering the health of others. It would

[72] Rogers, *op. cit.*, p. 15.

be a rest and work room, and the number of cases would be small enough so that no extra teacher should be required.

Disease prevention is important for several reasons besides the obvious ones of discomfort, expense, and loss of time. Sickness nearly always leaves the child with lowered resistance. He is more apt to have a second illness following the first. Often his energy is low, and his school work suffers. Stratton found a definite connection between the incidence of disease and emotional development.[73]

> Persons who at any time have been subject to disease tend in later life to respond more intensely to anger situations, and probably also to fear situations than do persons who have always been free from serious disease.
>
> Of persons alike in having had disease, those who have had a greater range of diseases probably tend to respond more intensely to fear situations than do those who have had a lesser range. In case of anger, the probability that an incidence of more diseases tends to be connected with more intense emotional responses seems fairly high. The period of life at which our diseases occur is probably important for our emotions. With respect to fear, the indications are unclear; but such as they are, they point to a greater significance in diseases occurring in the period from 11-15 years inclusive than in either of the periods earlier. For anger, the evidence seems clear that persons subject to disease in the first six years of childhood tend to more intense emotion than do those whose diseases occurred in any of the later periods here considered.

First aid. Every school should be equipped with adequate first aid supplies. Every teacher and administrator should know enough first aid to know what should be done in case of illness or accidents. Accident procedure should be understood by all, listed in each teacher's handbook, and on the inside of the first aid cabinet. A family physician should be listed for each child and the telephone numbers immediately available. All emergency phone numbers should be posted by each phone. These are minimum precautions.

VII. EVALUATION AND APPRAISAL IN HEALTH AND PHYSICAL EDUCATION

Each school needs to be concerned with the progress that has been made in attaining its objectives in this field. Is the physical condition of each child improving? Do the pupils know what health and safety practices they should follow? Have they developed desirable attitudes and health habits as a result of this knowledge? Can the school environment be improved in regard to developing better emotional and physical health of pupils? Can the home and community environment be improved so as to increase their effectiveness in relation to the emotional and physical health of pupils?

[73] George M. Stratton, "Emotion and the Incidence of Disease· The Influence of the Number of Diseases and the Age at Which They Occur," in S. L. Pressey and J. E. Janney, *Casebook of Research in Educational Psychology* (New York, Harper and Brothers, 1937), pp. 7-12.

The answer to the first question is dependent upon the coöperation of the parent, teacher, and health services. The individual health record is not sufficient. It must be supplemented by a *continuous observation* on the part of the teacher and information from the home. Our "report card" system has only worked one way. Why should not parents be asked for information concerning the child's physical condition and his health habits?

Knowledge of health and safety practices can be measured as are other knowledges. The important consideration is whether the pupil *does* as well as he knows. Does he cross the street at the corner looking both ways? Does he eat a balanced meal? Does he get enough sleep? The answer to such questions requires observation by both parent and teacher and the pooling of such information.

The improvement of the home, school, and community environment is complicated, requiring continuous appraisal. In addition to physical factors usually considered, the emotional climate must also be evaluated. Chapter 3 is rich in suggestions in relation to planning an evaluation of the emotional environment.[74]

Evaluation needs to be made in terms of the purposes and objectives of the health program. The most detailed list of objectives with suggestions for evaluation has been given by Rugen and Nyswander.[75] Their work should be carefully studied by a faculty interested in this problem.

Instruments for pupil evaluation. The evaluation should be made in a situation as closely related to reality as possible. If the use and reading of a thermometer is to be tested, the testing should be done with a thermometer, if possible, and not with a pencil and paper test.

The most common evaluation instruments are: [76]

1. *Observations.* These may include teachers' observations of pupils' health behavior, of particular skills or events in the home or community.

2. *Surveys.* At periodic intervals surveys may be made of various health conditions or of parts of the program. Surveys are usually based on predetermined standards.

3. *Questionnaires and check lists.* Pupils, and sometimes parents, may be asked questions in regard to various health matters or invited to express their interest, or lack of interest, in different topics.

4. *Interviews.* Conferences with pupils, parents, teachers, school health personnel, and community workers may be conducted in the classroom, health office, or principal's office as well as during home visits.

[74] See pages 93 to 104.

[75] Mabel E. Rugen and Dorothy Nyswander, "The Measurement of Understanding in Health Education," Chapter XI in *The Measurement of Understanding, Forty-Fifth Yearbook,* Part I of the National Society for the Study of Education (Chicago, University of Chicago Press, 1946).

[76] The first ten items are from *Health Education, op. cit.,* p. 339. Item 11 from Ruth E. Grout, *Health Techniques in the Schools* (Philadelphia, W. B. Saunders Company, 1948), p. 235, and items 12 to 14 from Rugen and Nyswander, *op. cit.,* pp. 219-220. For a more complete discussion of the instruments see these three references and Oberteuffer, *op. cit.,* Chapters 9 and 10.

5. *Diaries and other autobiographical records kept by students.* These records give subjective accounts of the students' own accomplishments of opinions.

6. *Health records.* Findings of health and medical examinations, records of defects corrected or of immunizations performed, and vital statistics recorded by the health department provide objective evidence of needs and accomplishments.

7. *Records of other health conditions or improvements.* Here may be included such records as of the sale of protective foods in the cafeteria, of store sales, and of sanitary improvements in the school, in homes or in the community.

8. *Samples of students' work.* Examples of creative work which show students' ability to apply health principles would come in this category. These may be drawings, charts, models, other exhibits, reports and the like.

9. *Case studies.* Detailed study of an individual child may show changes in health behavior in relation to various other factors that influence his total life.

10. *Health tests.* Oral or written tests of health knowledge or understanding are among the most frequently used evaluation instruments.

11. *Photographs.* Pictures of significant points in a program may be taken periodically as a program develops.

12. *Self-appraisal.* Each pupil can periodically appraise himself in terms of standards agreed upon.

13. *Created situations.* Situations can be created within the classroom and school which give the pupils opportunity to apply voluntarily what they have learned.

14. *Expression of pupil opinion.* Group acceptance of certain behavior as "the thing to do" is a powerful force. Such expression and practice in regards to positive health and safety behaviors by the leaders of the school is important.

Evaluation of the health services and environment of home, school and community. In what way can the health services be more adequate? How can the environments affecting the pupils be improved? Many specific questions could be asked in these areas. A comprehensive evaluation is a long time process involving many agencies. Each year some phase of the problem can be tackled.[77] The weakest spot can be tackled first. The school health committee and the health coördinating committee of the community should be responsible for developing the appraisal program.[78] It is only from a continuous study and evaluation of present status and past development that progress can be made.

School, home, and community relationships should be distinguished by two characteristics: first, a definite understanding of the allocation of responsibility, and second, coöperation.

Where responsibility lies. In general, the school is responsible for health education, the home for health care, and the community for health promotion. The school should limit its activities to those which are educational. This eliminates remedial or curative treatment of children, except, of course, as first aid. It should be a part of the educational

[77] See Oberteuffer, *op. cit.*, p. 385 for a suggested five year schedule.

[78] Helpful suggestions can be found in Oberteuffer, *op. cit.*, Chapter XIX; *Health Education, op. cit.*, pp. 346-349; Nina S. Lamkin, *Health Education in Rural Schools and Communities* (New York, A. S. Barnes and Company, 1946), Chapter XIV; Grout, *op. cit.*, pp. 240-242, also the Check Sheet on School Sanitation, pp. 285-293.

program of the schools to educate the children and through them, their parents, to the necessity of home responsibility for dressing all wounds or sores, caring for all illnesses, or removing all remediable physical conditions in the home or under home jurisdiction. When parents are financially unable to pay for medical care, this should be reported to the community authorities and followed up to see that the necessary care is received.

The school should be responsible for knowing those children in need of relief feedings, such as free milk and free lunches. It is the place of the school to educate the child to make a proper selection of foods and to realize the necessity for milk, fruits, vegetables, and other foods in his diet. If possible, it is also the responsibility of the school to provide a situation of "learning by doing," of actual experience in selection of foods over a long period of time. This can be done as before described in the school cafeteria. Where he is unable to pay, the school should develop a plan, sometimes in coöperation with other community groups, where provision is made so that the child may buy his lunch with the rest, or some plan be developed to furnish it at school.

It is the responsibility of the home to see that the child gets a balanced diet, proper food, sufficient rest, and performs the necessary activities of personal hygiene. The knowledge concerning these things, the desire to do them, and the motivation may come from the home in some instances; but is a definite responsibility which the school must also assume.

Coöperation of school and community. Every community has its own Public Health Department. Every community has its own physicians and dentists who maintain their private practices. Most communities have auxiliary groups who are interested in advancing the health and general welfare of the community. It is a prime function of the school to coöperate with all of these.

There are certain legal factors to be considered. In most, if not all, situations, the public-health authorities are responsible for the control of contagious disease and the sanitation of public buildings. There are factors of professional ethics involved wherever physicians and dentists are concerned. These must be taken into consideration and a policy of mutual coöperation developed which will make for the greatest advancement of the work of all.

There have been marked advances in recent years in coöperatively working on the health problems of the school and community. Unless all groups interested in health are involved, too little is accomplished.

One state worthy of study, where much has been accomplished, is Washington. Excellent coöperation exists between the State Department of Public Instruction and the State Department of Health. Through joint endeavor many community health councils have been established. Related to these, school district health committees and school building committees have been developed. Many school districts have a health

coördinator. In-service and pre-service programs involving the teacher training institutions have been made more functional.

Building committee. Each school should have a building committee composed of the principal, some teachers, any teachers with special interest in health, the nurse, parents, students, custodial staff. They should study the health environment, services, and instructional program.

School district health committee. This committee should include the administration; health officer and/or school medical advisor; nurse; representative physical education, science, and home-economics teachers; guidance staff member, representatives from the building committees, custodial staff; P.T.A.; dentist; and representatives from other official and voluntary community health organizations.

Community health council. Such councils should be composed of all interested groups including the medical, nursing, and dental professions, welfare department, voluntary health agencies, service clubs, labor and management, and the school district health committees. With respect to the schools, the community health council would have responsibilities such as: [79]

1. Giving advice and counsel to the school administration in the development of a more adequate school health program as related to the total community health program.
2. Coördinating the various health agency activities with the school health program to provide a complete program for the school child by utilizing to the maximum community facilities and services.
3. Informing school administrators of the health services available in the community which can be utilized for the benefit of the school child.
4. Making all health services and facilities available to the schools for observation and work experiences.

The National Mental Health Act passed by Congress in 1946 affords communities opportunities in the development of mental health clinics and preventive mental health work. Coördinating councils should be aware of the development in their state in this regard.[80]

School health coördinator. The health coördinator has the responsibility of developing and coördinating the school health program. The coördinator has such responsibilities as follow: [81]

1. Presenting to the administrator for his consideration any measures which may be needed to bring the school health program up to currently accepted standards of adequacy and quality.

[79] *Guide for the School Health Service Program* (Olympia, Washington, State Department of Public Instruction and State Department of Health, 1917), p. 7. The suggested membership for the committees was adapted from this source.

[80] Consult your state department of health or the U. S. Public Health Service or the U. S. Office of Education.

[81] *Ibid.*, p. 8. Items 1 to 11. Items 12 to 17 are in addition to those suggested. Another list of duties can be found in *Health Education, op. cit.*, pp. 93-94.

2. Representing the school administrator at committee meetings in the school and at community meetings and functions having to do with health.
3. Representing the school on community health councils.
4. Helping to secure an integrated and functional program of health teaching suited to the needs of all children.
5. Working with committees and with individual teachers on revisions of health curriculum.
6. Securing background materials in health for use by teachers and students.
7. Securing audio-visual aids on health topics and assisting in their use.
8. Assisting in arranging for student field trips on health and for student participation in community health projects.
9. Securing speakers and community resource people in the health field for all teachers.
10. Assisting in the conducting of workshops in health education.
11. Working with the nurse in planning in-service training programs for teachers.
12. Surveying health needs of children.
13. Arranging for follow-up services in coöperation with the nurse and principal.
14. Arranging for necessary use of health services.
15. Arranging for or conducting periodic surveys of the school health environment.
16. Being responsible for continuing analysis of safety conditions.
17. Working with teachers so that they may become more effective at "screening" pupils. Nyswander[82] proved that teachers could effectively screen pupils.

Many women's clubs and service clubs as well as other organizations have funds which they use for providing specific help to those who need it and cannot obtain it otherwise. One organization may pay for eye examinations and glasses, another for medical care for chronic cases, another for milk for needy families. When these organizations are aware of definite needs they will often provide the necessary funds. Such contacts and the maintenance of goodwill must be the responsibility of the school.

The control of communicable disease is one in which all three agencies share responsibility, although of a different nature. The legal and hence the main responsibility lies with the community. The home must be educated to coöperate, for without such coöperation no community program can be effective. Regulations must be obeyed, and public opinion and the attitude of the home are the strongest factors in securing such obedience. But further, each individual person who has a communicable disease must feel the responsibility for having care, overcoming the disease, and using necessary precautions against spreading it. This is particularly true of venereal diseases, tuberculosis, and others which are not readily recognizable to the average observer. Here again the school has a part in developing in the children the attitude of responsibility which should carry over to the home.

[82] *Solving School Health Problems, op. cit.*

Community sanitation. Other responsibilities of the community are sanitation, water supply, and garbage and rubbish disposal. The control of these is legally delegated to community agencies, but it cannot be adequately carried out if the people in the community do not intelligently coöperate. Again, it is the responsibility of the school to educate the pupils and through them the parents so that there will be greater and more intelligent coöperation in the community.

There is no health factor in which the school does not have a responsibility, that of educating, giving information, and developing attitudes.

Suggested Learning Experiences

1. Take Strayer and Engelhardt's *Standards for Elementary School Buildings,* and check the room in which you are particularly interested. In what respects could the teacher improve these conditions?
2. Observe and check the general atmosphere of the room. In what respects did it lead to mental health? In what respects was it endangering mental health?
3. Analyze two series of health texts. What differences at the various grade levels are there in the concepts presented?
4. Analyze the complete health service and instructional program of a school system. At what points is it outstanding and at what points would you suggest improvements?
5. Rework or add health experiences suggested in the unit you prepared for Chapter 7 or 9.
6. Discuss the implications for practice of the basic principles suggested for the health program.
7. Develop a short unit which centers primarily on some phase of health.
8. Which of the games in Tables XVII and XVIII can you play? Some time might profitably be spent in pooling the knowledge of individuals as to how to play the various games.
9. If possible, some member of the group should arrange a demonstration of the telebinocular and audiometer. It would also be helpful if a nurse could talk on the signs of contagious diseases.
10. Investigate the way in which the schools of the community coöperate with relief agencies.
11. Collect health cards from several schools which have been filled out. What items on the card do you have difficulty in understanding?
12. Make a comparative analysis of several courses.

Selected References

A. *General References*

American Association of School Administrators, *Safety Education, Eighteenth Yearbook* (Washington, D. C., The Association, 1940), 544 pp. A comprehensive treatment of safety education. Still very valuable.

———, *Education for Family Life, Nineteenth Yearbook* (Washington, D. C., The Association, 1941), 365 pp. Useful in planning curriculum for better family living.

———, *Health in Schools, Twentieth Yearbook* (Washington, D. C., The Association, 1942), 542 pp. An orientation for the administration of the program of health education in the schools. Emphasizes community coöperation.

———, *American School Buildings, Twenty-Seventh Yearbook* (Washington, D. C., The Association, 1949), 525 pp. Excellent information on various phases of the healthful school plant.

American Physical Education Association, *Dancing in the Elementary Schools* (New York, A. S. Barnes and Company, 1933). A comprehensive and useful discussion of various phases and problems of dancing in the elementary school.

BENTLEY, John Edward, *Problem Children* (New York, W. W. Norton & Company, Inc., 1936). Discusses physical disabilities of problem children with a suggested health program for the school. Also considers the psychological, social, and educational approach.

BIESTER, Lillian L., GRIFFITHS, William, and PEARCE, N. O., *Units in Personal Health and Human Relations* (Minneapolis, University of Minnesota Press, 1947), 267 pp. Has a unit for kindergarten and one for grades 6-8 on "How do living forms reproduce?"

BROADY, Lois Pedersen, and FRENCH, Esther, *Health and Physical Education in Small Schools,* rev. ed. (Lincoln, University of Nebraska Press, 1946), 343 pp. Gives suggestions for playground supervision, and activities for the elementary school. Many specific games.

BROWNELL, Clifford Lee, *Principles of Health Education Applied* (New York, McGraw-Hill Book Company, Inc., 1949). A comprehensive treatment of health education.

CHENOWETH, Laurence B., and SELKIRK, Theodore K., *School Health Problems* (New York, Appleton-Century-Crofts, Inc., 1947). An excellent source of the more technical health knowledge as to the growth, physical examination, and special health problems of the school child. Contains an outline of school health administration.

CLARKE, H. Harrison, *The Application of Measurement to Health and Physical Education* (New York, Prentice-Hall, Inc., 1945), 415 pp. Primarily for secondary schools, but of some value for elementary.

Council on Dental Health, *Dental Health Program for Elementary and Secondary Schools* (Chicago, American Dental Association, 1948), 40 pp. A helpful, authoritative pamphlet outlining the dental program.

CROMWELL, Gertrude E., *The Health of the School Child* (Philadelphia, W. B. Saunders Company, 1946), 256 pp. A good general treatment. Has a good chapter on home-school relationship.

DOBBS, Alma A., *Teaching Wholesome Living in the Elementary Schools* (New York, A. S. Barnes and Co., 1939). Concerned with building curricula in which child growth is the primary concern.

EXTON, Bess, *Films in Health Education* (Washington, American Association for Health, Physical Education and Recreation, 1947), 16 pp. Annotated list of films for health.

GARDNER, Ella, *Handbook for Recreation Leaders,* Children's Bureau Publication No. 231 (Washington, D. C., Government Printing Office, 1936). Contains many group games—listed and indexed for various purposes with various groups and in various situations.

GROUT, Ruth E., *Health Teaching in Schools* (Philadelphia, W. B. Saunders Company, 1948), 320 pp. An excellent general treatment with helpful material on guides, audio-visual aids, and planning.

HUGHES, Dorothy T., *Rhythmic Games and Dances: Basic Activities for Elementary Grades* (New York, American Book Company, 1942). Gives rhythms and dances with musical score.

IRWIN, L. W., *The Curriculum in Health and Physical Education* (St. Louis, C. V. Mosby Co., 1944). A careful treatment of both health and physical education from kindergarten to grade twelve.

Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association, *Health Education,* 3rd ed. (Washington, D. C., National Education Association, 1948). A basic, comprehensive, and authoritative treatment of health education. Should be in the professional library of every elementary school.

Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association, *Health Appraisal of School Children* (Washington, D. C., National Education Association, 1948), 29 pp. Standards for determining the health status of children—through the coöperation of parents, teachers, physicians, nurses, and others.

LAMKIN, Nina B., *Health Education in Rural Schools and Communities* (New York, A. S. Barnes and Co., 1946), 209 pp. Of general value to teachers, especially rural ones.

LAPORTE, Wm. Ralph, *The Physical Education Curriculum*, 3rd ed. (Los Angeles, University of Southern California Press, 1942). A report of fourteen years of research by the committee on Curriculum Research of the College Physical Education Association. Excellent for major outline of program.

LASALLE, Dorothy, *Guidance of Children Through Physical Education* (New York, A. S. Barnes and Co., 1946). A most valuable contribution for the elementary school. Rich in suggested activities.

LEANDERSON, Robert, *Guide for Teaching Traffic Safety* (Washington, D. C., American Automobile Association, 1948), 28 pp. Helpful in developing and evaluating a traffic safety program.

MITCHELL, Elmer D., and MASON, Bernard S., *The Theory of Play*, rev. ed. (New York, A. S. Barnes and Co., 1948). Discusses the theory, need, and administration of play. Play and its relation to life.

MURRAY, Ruth, "The Dance in Physical Education," *Journal of Health and Physical Education*, Vol. 8, January, 1937, pp. 10-14. A basic and worth-while article on the dance and its possibilities for the first grade up.

National Committee on School Health Policies, "Suggested School Health Policies," *Journal of Health and Physical Education*, Vol. 17 (January, February and March, 1946), pp. 10-13, 40-44, 63-66, 104-113, 144-146, 184-186. A guide for all concerned with health in the schools.

National Safety Council, *Foundation for Safe Living: A Manual for Elementary School Teachers and Principals* (Chicago, National Safety Council, 1948), 82 pp. Asserts safety curriculum should be based on local needs, supplies a suggested survey of local needs. Sections on Safety in Science, Social Studies, health and language arts. Rules for playground equipment. A must for the professional library of a school.

National Society for the Study of Education, *Child Development and the Curriculum, Thirty-Eighth Yearbook* (Bloomington, Ill., Public School Publishing Co., 1939). Chapters II to IV discuss motor activities, health and safety education, and routine physical habits.

OBERTEUFFER, Delbert, *School Health Education* (New York, Harper and Brothers, 1949). Part I deals with foundations, II with curriculum and teaching, III with administration and activities. Readable and helpful.

O'KEEFE, Patric Ruth, and FAHEY, Helen, *Education Through Physical Activities* (St. Louis, C. V. Mosby Co., 1948). An excellent treatment of the problems of physical education in the elementary school.

O'NEILL, Florence C., *A Guide to the Teaching of Health in the Elementary School* (Albany, University of the State of New York Press, 1936). The result of study and experimentation. It is a guide to further work in the State of New York. Has sections on organization and administration, on building the curriculum, and on selecting health content. It is particularly valuable for its illustrative anecdotes.

On Guard Against Accidents, Instructors' Manual to accompany *Youth On Guard Against Accidents* (Washington, D. C., American Red Cross, 1947). A safety program for grades seven, eight, and nine using activities. Material is also available for grades one to six.

OTTO, Henry J., "The Composition of Elementary School Programs," *Educational Administration and Supervision*, Vol. 33, January, 1947, pp. 1-12. Gives definite suggestions for the use of the lunchroom as a laboratory for health instruction.

PANGBURN, Weaver Weddell, *Adventures in Recreation* (New York, A. S. Barnes and Co., 1936). Discusses recreation as a public function. Kinds of recreation, recreation in terms of human wishes. Includes a yardstick for evaluating community recreation. Valuable for schools in planning education for leisure time and their own recreational facilities.

PATTY, Willard W., *Teaching Health and Safety in Elementary Grades* (New York, Prentice-Hall, Inc., 1940), 371 pp. Contains many practical suggestions for teachers. Useful for both health units and suggestions for physical education.

Physical Defects—The Pathway to Correction (New York, American Child Health Asso-

ciation, 1934). Includes the study of various types of defects—their frequency—means of recognition, and prevention and control. Gives suggestions for practical organization of a school system for most effective work.

Public Health Service and Administration, White House Conference on Child Health and Protection (New York, Appleton-Century-Crofts, Inc., 1932). Vol. II-A discusses the provisions of the state, county and local authorities for taking care of public-health problems. Vol. II-B discusses prevalence and control of disease among children.

ROGERS, James Frederick, *What Every Teacher Should Know About the Physical Condition of Her Pupils,* Office of Education, Pamphlet No. 68 (Washington, D. C., Government Printing Office, revised, 1945). Presents and discusses the things a teacher can do in checking the health of her pupils.

ROSE, Mary Swartz, *Teaching Nutrition to Boys and Girls* (New York, The Macmillan Company, 1944). An excellent source book for material on nutrition.

RUGEN, Mabel E., and NYSWANDER, Dorothy, "The Measurement of Understanding in Health Education," *The Measurement of Understanding, Forty-Fifth Yearbook,* Part I (Chicago, Illinois, National Society for the Study of Education, University of Chicago Press, 1946), pp. 213-231. See also Chapter XII for Physical Education. Excellent statement of objectives and specific suggestions for measuring each.

SALT, E. B., FOX, Grace L., DOUTHELT, Elsie M., and STEVENS, B. K., *Teaching Physical Education in the Elementary School* (New York, A. S. Barnes and Co., 1942). Rich in games and activities.

SEHON, Elizabeth L., ANDERSON, Marion H., HODGINS, Winifred W., and VAN FOSSEN, Gladys R., *Physical Education Methods for the Elementary School* (Philadelphia, W. B. Saunders Company, 1948). Suggests sound programs for kindergarten through eighth grade.

SHAEFER, Mary S., *Rhythms for Children* (New York, A. S. Barnes and Co., 1938) Contains in one volume material previously included in several.

SHARMAN, Jackson R., *Introduction to Health Education* (New York, A. S. Barnes and Co., 1948). A good general treatment of health education.

SMILEY, Dean F., and HEIN, Fred V., eds., *Physicians and Schools* (Chicago, Illinois, American Medical Association, 1948), 32 pp. Lists twenty-five recommendations dealing with relations between physicians and schools.

STEVENSON, Elizabeth, *Home and Family Life Education in the Elementary School* (New York, John Wiley & Sons, Inc., 1946), 309 pp. Shows how family life education can be integrated into the elementary school.

STOLZ, Herbert R., "Growth Needs of Children in the Intermediate Grades," *Educational Method,* Vol. 17, January, 1938, pp. 157-162. Characteristics and needs for health instruction and care of this age group.

STRANG, Ruth, *An Introduction to Child Study* (New York, The Macmillan Company, 1938), pp. 291-299, 326-327, 383-389, 437-449. Discusses growth, development, health knowledges and practices in the primary and post-primary period.

———, and SMILEY, Dean F., *The Rôle of the Teacher in Health Education* (New York, The Macmillan Company, 1941), 359 pp. Some material of value for the elementary teacher, especially in evaluation and the program as a whole.

STRAYER, George D., and ENGELHARDT, N. L., *Standards for Elementary School Buildings* (New York, Teachers College, Columbia University, 1933). An authoritative basis for checking safety and health factors of school buildings.

The Teacher's Guidebook for a Program in Nutrition Education (Minneapolis, Minnesota, General Mills, Inc., 1946), 64 pp. Gives background information, how to study the child and pupil experiences for nutrition. Very helpful.

TURNER, C. E., *School Health and Health Education* (St. Louis, C. V. Mosby Co., 1947), 457 pp. A comprehensive treatment of the health program.

TYLER, Eunice I., *Building Toward a State Health Program* (New Haven, Conn., Yale University, 1946), 361 pp. A doctor's dissertation. Shows ways a community can build a health program.

WANAMAKER, Pearl A., and RINGLE, Arthur L., *Guide for the School Health Service Program* (Olympia, Washington, State Department of Public Instruction and State Department of Health, 1947), 43 pp. A brief, valuable presentation of the health

service, its educational aspects, emergencies, and standing orders; environmental sanitation and suggested forms.

WHEATLEY, George M., and others, *What Teachers See* (New York, Metropolitan Life Insurance Co., 1946). Excellent colored pictures of children with conditions in need of correction. The briefest and best help on observation of children.

WILLIAMS, Jesse F., and BROWNELL, Clifford L., *The Administration of Health and Physical Education,* 3rd ed. (Philadelphia, W. B. Saunders Company, 1946). A unified and comprehensive treatment with chapters on healthful school living. Health service and health instruction.

———, and ABERNATHY, Ruth, *Health Education in the Schools* (New York, The Ronald Press Company, 1949). Fine treatment of the problems of health education.

B. *Research and Summaries*

BYRD, Oliver E., *Health Instruction Yearbook* (Stanford University, Stanford University Press, Annual). Summarizes each year the source material on health.

FRANZEN, Raymond, *Influence of Social and Economic Factors on the Health of the School Child,* Health Research Monograph No. IV (New York, American Child Health Association, 1932). Presents research data which indicate the extent to which socio-economic factors influence results.

GUTHE, Carl E., chairman, *Manual for the Study of Food Habits,* Report of the Committee on Food Habits, Bulletin No. 111 (Washington, D. C., National Research Council, 1945), 142 pp. Suggests various methods of studying food habits. A bibliography of 682 references.

HARDY, Martha Crumpton, and HOEFER, Carolyn H., *Healthy Growth* (Chicago, University of Chicago Press, 1946). The report of a study extending over twelve years designed to determine (1) the extent to which participation in a broad health-education program during childhood tends to influence rate of growth and development, (2) the effectiveness of present methods of health education as a means of improving health condition, and (3) the importance of positive health as a factor in the course of growth during the last twelve years of the developmental period (eight to twenty).

LEWIN, Kurt, "Forces Behind Food Habits and Methods of Change," Report of the Committee on Food Habits, Bulletin No. 108 (Washington, D. C., National Research Council, 1943), pp. 35-65. Group decision proved to be a more effective method of changing food habits than lecture or request.

LEWIS, Arthur J., chairman, *Health Interests of Children* (Denver, Colorado, Denver Public Schools, 1947), 121 pp. The most comprehensive study of health interests of children from kindergarten through grade twelve. Recommends a program of health education.

"Mental and Physical Health," *Review of Educational Research,* Vol. 10 (December, 1940), Vol. 13 (December, 1943), Vol. 16 (December, 1946), Vol. 19 (December, 1949). Excellent summaries of the research for the three years between each issue.

National Facilities Conference, *A Guide for Planning Facilities for Athletics, Recreation, Physical and Health Education* (Chicago, The Athletic Institute, 1947). Comprehensive plans for various size schools and for various purposes. A must for school planning.

NYSWANDER, Dorothy B., *Solving School Health Policies* (New York, The Commonwealth Fund, 1942). The report of a four-year intensive study of school health service in New York City. Many excellent recommendations of value elsewhere. Proves the teacher can detect difficulties.

PHELAN, Annette M., *A Study of School Health Standards,* Teachers College, Columbia dissertation (Menasha, Wis., George Banta Publishing Co., 1934). Contains some 242 tentative standards for a school health program and the median ratings given

PRESTON, Everett C., *Principles and Statutory Provisions Relating to Recreational, Medical and Social Welfare Services of the Public Schools,* Contribution to Education, No. 661 (New York, Teachers College, Columbia University, 1935). A survey of the statutory provisions in the forty-eight states and analysis of principles involved.

each item by students and by specialists. The body of the study contains a discussion of the more important of these items.

RODGERS, Elizabeth G., *An Experimental Investigation of the Teaching of Team Games,* Contributions to Education, No. 680 (New York, Teachers College, Columbia University, 1936). Found that games learned by practising techniques while playing and according to felt need are most effective.

'School Plant and Equipment," *Review of Educational Research,* Vol. 7 (April, 1942), Vol. 15 (February, 1945), Vol. 18 (February, 1948). Summaries of latest research on various phases of the school plant. Published every three years.

SCHWENDENER, N., *Games Preferences of 10,000 Fourth-Grade Children* (New York, Teachers College, Columbia University, 1931). Lists games with preference rating and grades where learned.

14

Creative Experiences: Providing Opportunity for Creative Expression

I. CHARACTERISTICS OF CREATIVE EXPERIENCES

What is creative? Creative activity may take place at any time or place or with any materials. It is not another "subject" or area or even a separate approach. It is treated here separately merely to give emphasis to the attitude and atmosphere which should be present in every phase of school life. Not all school activity either is or should be creative. Rather, every phase of school life should give a greater or lesser amount of opportunity for it.

Some say that all thinking is creative. That is true only by definition. It is only too true, that most of what is called thinking in the adult as well as the school world is anything but creative. It is reminiscence, repetition of our own and others' thoughts or comments, or an habitual and unthinking disagreement with them. There must be a seeing of new relationships, a new interpretation of some fact, familiar or not, an approach that gives new meaning before thinking can be creative.

Again, some say that all learning is creative. This cannot be accepted, either. However, those who have held this interpretation have made a significant contribution by calling attention to the fact that individuals learn things, each in his own individual way.

The individual does and should make an individual contribution when he learns, an individual contribution to what is learned. To call this creative, however, is to overlook the processes of discovery. Learning should never be the blind acceptance of imposed understandings, attitudes, or skills. Valid research shows that even in the acquisition of more or less fixed skills through functional practice, the methods and insight which the individual contributes are important in producing learning. But note that it is a socially recognized skill that is being acquired. The acquisition of ancient routines and skills and of socially approved understandings and attitudes cannot be called truly creative. The processes of discovery, but discovery with full place for individual methods, questions, suggestions, even modifications, seem to account fully for the matter.

The learner at all levels in good learning situations, in or out of school, will discover facts, standards, rules, social conventions, social inventions, personality traits, relationships, processes without number. He does not *create* them, but he will *discover how to create* others, or to improve creatively those existing. Children and adults *discover* untold amounts of knowledge which they did not

and could not *create*. In other words, the modern school is designed to introduce the learner to the world and to culture in such a way that he discovers this world and does not have it thrust upon him unready and unwilling.... The individual discovers not only the organized society in which he lives but discovers how it evolved. He discovers, even more important, how each succeeding generation improved both the social structure and understanding of the physical world. He *discovers* finally the methods by which he may continue the *creative* process.

The above quotations are from Burton.[1]

Who is capable of creative expression? Practically every one is. There is confusion in the minds of many on this point, for they feel that only the person with special talent or the genius can express creatively. They may be the only ones whose contributions reach a world-wide audience. The standards of excellence of their work may be higher but no more truly creative than their neighbor's.

The ordinary child and the average citizen who clearly do not possess special talent are nevertheless continuously original and creative in little ways in everyday affairs. Adaptations of tools and machinery, ingenious repairs and temporary makeshifts, homely labor-saving devices, special adaptations of materials, quick repartee and keen argument, clear discriminating judgment in confused situations are all partly original and creative. They are clearly akin to the behaviors of special talent; the difference is in degree. The observer, blinded by his conception of creativity as special talent, dismisses the everyday lower-level illustrations with such comment as, "clever," "not bad," "mother wit," "the boy has a head on him," "he has gumption, hasn't he?" "old trigger brain," and many others. The creativity of the ordinary illustrations is obscured; but these are all cases of acumen, sagacity, penetrating insight, perspicacity, all of which involve departure from the accepted, the known, the routine.

This is true also when we turn to fields long associated with creativity—namely, the graphic and plastic arts, prose and poetry writing, dramatization, rhythm and the dance. Genuinely creative products are secured from any and all kinds of children in the modern school. Many underprivileged children living under most unfavorable conditions and coming from the poorest social levels will produce acceptable results when placed in favorable learning situations.... The creative productions of the ordinary individual will take no prizes and will be placed in no museums, but they do contribute measurably to the growth and development of the individual himself.

An error opposite to that of emphasizing genius, rarity, and inherent ability is to forget all standards and regard as creative anything whatever produced by a child.... Any messing of colors on paper or "any flubdub in written composition can pass as creative self-expression." Caution is necessary, however. Children's representations of their own ideas in primary grades will not meet and must not be judged by adult standards. The children can not only explain what they are doing and why, but other children are often able to recognize what their classmates are symbolizing even though the adult cannot. Form, detail, technique, and skill come with maturity and experience. Form and desirable standards are differentiated out of continuous experience under sympathetic guidance.[2]

[1] William H. Burton, *The Guidance of Major Specialized Learning Activities Within the Total Learning Activity* (Cambridge, Mass., the Author, 1944), pp. 102-103.

[2] *Ibid.*, pp. 106-108.

Values. "When arts are pushed into a minor place, it is the emotional side of human life which suffers. Arts cannot be intellectualized without being denatured. Music must be put ahead of musicology, practice and enjoyment of painting ahead of its history, the direct encouragement of poetry ahead of its use as an adjunct to social studies." [3]

The value to the child of creative learning and expression has been the keystone of modern education. It is the spark which vitalizes learning and develops the child. There are many personal values which may be derived from creative activity. Some of them are:

Self-discovery.[4] The encouragement of creative activity gives the child opportunity of discovering what he is capable of doing. Formal teaching only permitted him to repeat what was said or written, or copy what he and the group saw. Any initiative was likely to be suppressed as being "incorrect." Under the freer program the child is encouraged to be original, different, and by these efforts discovers his real abilities.

Self-reliance. When the child is no longer expected to do just what every one else does, to depend on the teacher's specific directions, he begins to depend on himself. This may be slow at first; but as he gradually succeeds at it, his self-reliance rapidly increases.

Persistence. In creative work the child sees the goal and some of the steps necessary to attaining it. His purpose is to reach that goal, and a very real and vital purpose it is. It makes work on the problem a most desirable activity, thus causing and developing a persistence of effort.

Enthusiasm. Creative effort is meaningful, interesting, and purposeful. By definition it is within his understanding and so may be successfully accomplished. Because he is expressing himself meaningfully and successfully, he cannot help but be enthusiastic.

Intellectual honesty. Too much of the work in schools the child does because the teacher wants him to do it, to get her approval, to get a good mark. Yet, very few of the children admit even to themselves the main purpose in their effort. When work is creative, a child does it for its own sake, recognizes his purpose, and honestly and openly works toward the accomplishment of it.

Intellectual adventurousness. Creative activity claims this asset as peculiarly its own. It was almost wholly lacking in the formal school. Under modern teaching there is no avenue of thought, no path of reflection, no field of speculation that may not be investigated. The only criteria are that the work should be according to the child's own plan and that, if he is to continue with it, what he finds there must be worth while for him.

[3] James L. Mursell, "The Arts in American Education," *Teachers College Record,* Vol. 46, February, 1945, pp. 285-292.

[4] The following headings are taken from John A. Hockett and E. W. Jacobsen, *Modern Practices in the Elementary School* (Boston, Ginn and Company, 1938), pp. 167-168, but the discussion is the authors'.

Constructive use of leisure. Leisure activity to-day is fast becoming commercialized. We pay to be entertained. It is much more profitable for us from many standpoints if we make our own happiness. No activity can have more all-around value for the individual than frequent adventuring into creative fields.

Appreciation. As the child accomplishes things that to him seem worth while, he is building appreciations of similar things created by others. The wider such experience that the child has, the wider and deeper will be those appreciations.

Means of expression. Creative thinking and learning may be in terms of any concepts and material. It constitutes the seeing of a new relationship, the recognition of a new meaning, or the making of a new interpretation. Likewise, the expression of creative ideas may be through any of the various media of expression. It may be spoken or written, in prose or in verse; sung or played on a musical instrument; pictured through any of the wide variety of art media; expressed through bodily activity, as rhythms, the dance, or pantomime, or through combinations of these as in dramatization. All of these and perhaps others may be used in the elementary school. They will be discussed in this chapter.

The excellence of the final product is not the criterion of evaluation for these means of expression. Rather they should be judged as to the extent to which they express the child's own ideas in his own way.

Influence of various factors. Various factors in the child's environment affect the extent of his creative activity. They particularly affect his means of expression. Children vary in their creative ability as in all other factors. However, the variation in the creativity of the same child in different situations is very great.

Background. Creative expression cannot take place without ideas and thoughts to express. Since one cannot create something out of nothing, it goes without saying that the wider and richer the background, the greater the creative possibilities. The reorganization of experience requires experience to reorganize. Thus, the wider the experience, and the greater the wealth of facts and concepts, the greater may be the creative activity.

Setting. A rich background alone is not sufficient. The situation must not only permit but encourage self-expression. There must be time set aside particularly for it. This should not be too definitely programmed, but with a group the size of most classes, a general plan or schedule is necessary. This, of course, should be flexible. The initiating of a project comes most naturally immediately after instigating experience. A child's drawing of his interpretation of Indian life comes more naturally after an enthusiastic discussion of it than after an arithmetic class. Certainly a period of the day should not be scheduled as a "creative period."

The materials with which to express himself must be at hand. The child usually has access to pencil and paper, quite often in the lower grades to an easel and paints, occasionally to the blackboard, crayons, drawing

paper, clay, glue, scissors, and the like. This is usually the limit unless some special project is in progress. In too many situations pencil and paper are the only materials and stolen time the only time for creative expression, except for the art period once a week and the music period perhaps every other day.

A third factor is that the situation itself must be such as to stimulate such expression. The room should be neat, orderly, and as attractive as the small funds available and the ingenuity of the teacher and class can make it. Good pictures which the children can appreciate should be hung, a few at a time. The children's work should be displayed. There should be color and light and at least the effect of sunshine. There should be curtains at the windows and an attractive library corner and, if at all possible, flowers. A bird is a pleasant addition, and even gold-fish help.

A fourth requisite in the situation is that the child's efforts have the sincere respect of the group. He must be certain that however his effort "turns out" the group will accept it or evaluate it honestly and frankly, that they will not laugh at it or deride it. There is nothing so killing to original activity.

Teacher. The teacher is of course the most important factor. Besides being largely responsible for the background and setting, she can by her attitude and approach arouse or smother the child's creative spirit. In the first place, her teaching must be such that the child's thinking and learning will be as creative as possible instead of routine repetition. She must arrange the situation so that there is opportunity. She must stimulate him to action by showing him what has already been done, and when necessary at first, even by suggesting possibilities.

The teacher can help the child to see beauty in all things. All things that are fine and true and useful have a beauty. Nowhere yet, even in the most disheartening slums, has there been found a place totally devoid of beauty. On the dreariest day may be heard the music of the rain or the wind. Time taken to see the beauty of the shadows the sun makes on the snow, or the first green leaves budding on a tree, the bright cheer of flowers, even of the golden dandelions on the lawn, or to hear the music of the lark or the robin, the patter of rain drops on the window or the distant church bells, may be by far the most worth-while experience the child could have.

After she has encouraged the children to try their abilities and express their own ideas in their own way, she has an even more important responsibility. She must see that his beginnings in the field of self-expression are not suppressed. She must give the child self-confidence. In viewing his work she must look at it from the child's own point of view. She must try to see his meaning. To evaluate it on adult standards or in terms of what she had expected or had in mind is to lose far more than she has gained. On the other hand, to praise a product beyond its worth is also detrimental. There must be discriminating approval; somewhere there will be

something, either the idea or concept, or some phase of the finished result that truly merits praise. Criticism should always be in terms of the child's own purpose. A few tactful suggestions may be offered, but never ridicule!

The teacher's own standards must be right. She needs a sufficiently rich background of her own so that she can sense the true and the valuable when sincerely expressed even if in unconventional garb. This whole problem is one of the most difficult and the most challenging the teacher has to meet.

Purposes. There are three major purposes in creative expression which may be realized. Those planning and those carrying it out must all be aware of the possibilities in all these three purposes, if they are to be accomplished.

Self-expression. The general values of self-expression have been discussed. The arts develop personality just as any other successful shared experience into which the child enters whole-heartedly. Besides this there is the special value in particular cases of furnishing the means for adjustment. The literature is full of instances of "problem cases" who found a satisfactory and satisfying means of expression through the creative arts. Drawing, painting, and modeling have so far proved most helpful in these cases, but with adequate teaching there is no reason why other creative activities should not be valuable.

When the creative arts are taught for the purpose of self-expression, the situation is somewhat different from when other ends are desired. The child is going to be actually handling the media, doing and making. However, he is not going to be a "producer"—that is, he is going to be producing for his own pleasure and satisfaction but not for profit nor necessarily for the pleasure of others.

To do this the child must be able to use the techniques up to a point. This technical training is less than that which the schools have often thought necessary. This will be discussed in greater detail in relation to each of the arts. One pertinent observation is this: if a child only acquires techniques as and when he needs them, always of course seeing the possibilities of the next step ahead, that will be sufficient to satisfy him. If he develops interest in that particular means of expression, his needs will grow until he has increased his technique way beyond what one might expect. When the creative arts are used for the purpose of self-expression, the child only needs ability and skill enough to enable him to express his ideas to his own satisfaction.

When a child meets a problem of how to express his idea, it is the teacher's responsibility to make it possible for him to reach a solution. She may supply the necessary technique or a new medium. Another helpful way is by presenting really good examples of how others have solved the same or similar problems. Showing one example encourages copying, but a variety gives a wealth of suggestion, and from the combination the child will create his own solution.

The teacher must have a wide background and a deep understanding to be able to do this and do it successfully. The teacher must also sense when she may be helpful and when she must not intrude. Even sympathetic comment or suggestion at too early a stage, before the idea has taken definite form and has been really "captured," may cause the loss of it all.

However, the free child in a rich environment is not sufficient. The teacher is needed, not to dictate and judge and exhort. Rather, it is her place to provide the opportunity to open up ever widening goals and to stand ready with suggestions and help when needed.

Appreciation. The sole purpose of appreciation is enjoyment. Because so many of our teachers have forgotten this, much of our appreciation work has failed tragically. We have tried to find what experiences, what knowledges and skills would increase the child's enjoyment of the arts. So far so good. Then we have proceeded to teach these with all the rigor and insistence and much the same methods we used to teach the fundamental skills. Facts were presented for memorization; tests were given in which children were passed or failed. When they listened to or looked at the treasures of the past or present, it was to analyze them according to previously set standards and for the purpose of answering questions about them. The whole approach was wrong!

The enjoyment of that which is truly beautiful, of that which has for its main purpose the increase of one's appreciations and pleasures, is one of the most valuable and integrative experiences one can have. What is more, it is completely beyond the understanding of one who has not experienced it. Such a person is very apt to deny its existence. One cannot be told about it. One must feel the thrill, the heart-warming, or the peace which comes from the true enjoyment of the arts.

The utilitarian machine age in which we live has demanded that all be evaluated in terms of "practical" aspects. To prove that an experience is worth while, we must be able to show that it increases our present or future earning power, makes us more useful, more efficient. That it makes us happier seems to be beside the point, except as that happiness directly increases our efficiency. Now that leisure is being enforced upon the world, the people are largely at a loss. They have no concept of the possibilities which might enrich their lives immeasurably.

The story of the life of one woman may be the best illustration of the point. As a child she lived in a home of culture. She learned to love music and art and good literature. She lived on a ranch and, led by the deep and true appreciations of her parents, she learned to see beauty all around her. There was little money to spend, but ways were devised to get full benefit of all available resources.

To-day, this is the picture. She is past fifty. Neither she nor her husband are well. They have barely enough to live on, more than once actually going hungry. But—she has a grand piano which she saved and worked

to buy. She has a lovely collection of beautiful pictures, largely reproductions except for gifts of friends, a large library of good literature. She has more friends than any one I know. One goes to her house and finds it a beautiful place, made so by her love of beauty and ability to see it in the most common things. An hour with her and one feels the abiding peace, the quickening of the love of living, an enrichment that comes from her deep and true enjoyment and appreciation of all that is beautiful. If one must choose between them, her gift is worth far more than all the power and wealth and efficiency one might have.

If all the children in schools could be given the basis for enjoyment that she had as a child, it would do more for the peace and harmony in the world than all else: this over and above the individual pleasure that would be gained.

How can we achieve this? First of all our teachers must have this vital source of happiness. If they truly know the meaning of an appreciation of the beautiful, they transmit it constantly. Not to do so would be beyond their powers. Let it be said right here that the beautiful is not the "pretty." Rather it is all that is true and right and understanding.

The second important factor in achieving this appreciation is in the methods of teaching or the experience by which it is to be obtained. We come back to the thesis—the sole purpose of appreciation is enjoyment. This should be the guide. Good music should be listened to, good pictures seen, and good literature read and heard. Pupils and teachers may share their feelings, their thoughts, the moods evoked. There is no one right reaction to any work of art. The interpretation to be real must be in terms of the person's own background. If pupils are encouraged to express their own thoughts, it will be helpful to them and also a stimulation to others. Occasionally, however, one prefers not to express his feelings. They may be too personal, or too fragile, or too intangible to be paraded in public.

Where there are interesting stories connected, or a few simple facts or incidents which may make the experience more meaningful, they should be simply told. They are not facts to be learned for reproduction any more than are the arts themselves. Often just to hear a familiar and well-loved piece of music, to say over again a poem one has known, or to see a beloved picture on the wall gives one the happiness and security of meeting an old and very dear friend.

The child's experience in self-expression through the arts gives a solid basis for appreciation. He, too, has created in similar media. He has met and solved some of the same problems, though undoubtedly not as well. But, this very fact increases his admiration and understanding of the artist's work. With such experiences as a background, he may pick out the parts played by various instruments in an ensemble or orchestra and their contribution to the whole. He may see the effect of certain colors or lines or ways of composition. He may note the feeling given by the use of certain words or groups of words. But, the child's comments on all these

must be spontaneous and voluntary. He must not be required to make such analyses, nor must he be made to feel that he should. If such reactions are not easily forthcoming, a few sincere expressions of the teacher's own feelings should be all the stimulation necessary. And if such feelings are not present in the child, insisting that he express them only leads to hypocrisy.

Understanding. All true art should be an interpretation of some phase or fact of life. As one gradually learns to understand it better in any or all of its forms, one comes to understand the world about him. The creative arts, particularly music and art, are an excellent aid to international understanding. Though there are differences in technique and ways of expression between nations, they nevertheless form an excellent basis for mutual recognition of values.[5]

There is a great difference of opinion as to the best means of learning to read the meanings interpreted by art. The answer may lie in the combination of self-expression through the arts and a deep and real appreciation of them. As the child strives to interpret his impressions of the world about him, he does two things. He gains a deeper insight into his immediate problem and by his own experience learns to understand better the interpretations of others. On the other hand, as the child becomes friends with the best in all the arts of all times, he cannot help but come to understand them better.

We can live with the bare necessities of life—or education. We may even achieve "success," be honored in some particular field of endeavor. Regardless of such wealth or honor, our lives are bare and cold and meager if they do not have the enriching influence of the arts. For, art in all its branches gives new and fuller meaning to this world in which we live.

The program. Mursell gives a point of view which is fundamental in developing any program in the arts. "The people in music, in the visual arts, in the theater arts, in poetry, in the dance, should arrive at a common conception and move toward the elaboration of a common policy which would liberate, inform, cultivate, and guide the emotional side of living. This is the common and basic function of the arts that these workers serve." [6]

Out of this point of view he has developed a three point program:

1. Promote individual artistic creative activities on the part of the pupils on the most ambitious scale possible. Unless the arts are possessed as personal possessions they instantly lose their power, and the individual creative endeavor is an avenue to the personal possession of the arts for which there is no adequate substitute.

2. Promote activities in the way of artistic participation. The experience of

[5] National Society for the Study of Education, *International Understanding through the Public School Curriculum, Thirty-Sixth Yearbook,* Part II (Bloomington, Ill., Public School Publishing Co., 1937), Chs. XXIV-XXVII.

[6] Mursell, *op. cit.,* p. 288.

actually projecting works of art, in one's own proper person and through one's endeavors, is another essential means of getting hold of the arts as personal and intimate possessions.

The point will not be simply to produce expert performance in the upper high school years at any cost, and more particularly at the cost of eliminating the majority of pupils for the sake of a few quasi-virtuosi. Make activities æsthetically satisfying and culturally and educationally significant experiences all up and down the line and make them available for all.

3. Promote appreciative experiences on the most comprehensive scale possible, another essential avenue to possession.[7]

II. GUIDING CREATIVE EXPERIENCES IN MUSIC

Music has the possibilities for becoming an important part in the life of every individual. It is one of the media by which a person gains wide and varied experience. Most important of these perhaps is the emotional and aesthetic experience, those values not to be measured in terms of marks or grades or dollars and cents. It may be more true with music even than with the other arts, that its appeal is emotional rather than intellectual. On hearing some music, the listener has an almost irresistible impulse to laugh and dance and sing. Other music creates a very real feeling of sadness and pensiveness, whereas still other rests and relaxes. It has been suggested, and with good reason, that music be interspersed throughout the daily program. When children are tired and restless, they might sing a happy, jolly, rollicking song. Or perhaps, after a particularly active or exciting experience, they might listen to quiet and peaceful music on the phonograph. It can act as an everready means of unification of the group.

Mursell in his *Human Values in Music Education* [8] suggests three other broad purposes. One is the social. Every music program should influence the musical side of the social life of the school groups and also of the out-of-school activities. Performing and listening to music are both definitely social as well as personal. Another value is that music is an agency for growth. Among other phases of mental growth, it increases the breadth of apprehension and outlook and contributes to personal release. Music may be a moral force through creative social self-expression. It may also have this same effect through the maintenance of honest standards. The results to be obtained are objective and obvious, and the evaluation of the child's progress can be made nearly as easily by him as by the teacher. These values, as expressed by Mursell, are in considerable measure dependent upon methods of presentation which he discusses.

As a leisure-time activity music has untold potentialities. These may be planned activities, such as listening to concerts, operas and the like; singing in groups such as clubs and choruses; or individual study and prac-

[7] *Ibid.*, pp. 288-289.

[8] James L. Mursell, *Human Values in Music Education* (New York, Silver Burdett Company, 1934), Chs. II-V.

tice. Besides this, or in place of it, is the large part played by casual music, the possibilities of the radio program enjoyed while doing some quiet work, and greatest of all may be our own singing as we go about our daily tasks.

All nations since the dawn of history, and perhaps before, have had their folk music. Singing and playing have been a large factor in their work and in their play. This has been true up until quite recent times in our own country. Now music is largely limited to the radio and paid performances. Is it merely coincidental that when music was put in the schools it so largely went out of the lives of the people? Hong [9] found that pupils in the grades she investigated—fifth, sixth, seventh, and tenth—preferred the songs learned out of school to those learned in school. They sang more out-of-school songs than school songs, and music courses of study contained a small percentage of the pupils' favorites.

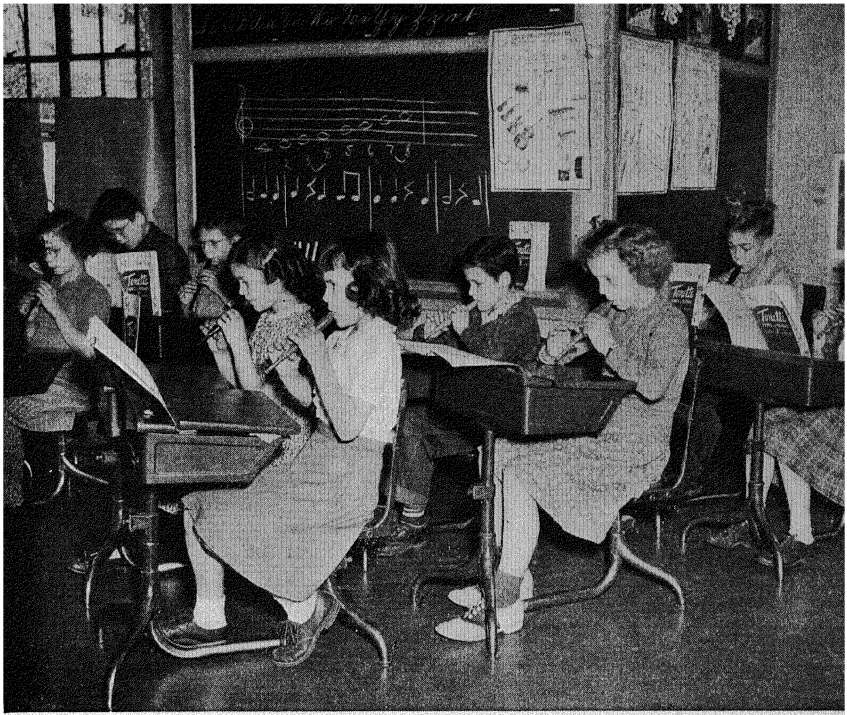
One day a ninth-grade boy heard a certain ballad over the radio. He stopped what he was doing, his face lit up with a smile and, with a voice that lacked much in technical perfection but nothing in whole-hearted enjoyment, he joined in. When the song was done, he said, "Do you know it took me the longest time at scout camp to learn to like that song. We had had it in school, you know." Could there be any more damning criticism! Similar conditions reported from numerous sources lead to the obvious conclusion that much of the music teaching is not vital, does not meet the interests and needs of the pupil, and is alienating him from good music in its attempt to "make him like it."

Listening. Listening to music should be a part of every person's life every day. Listening may be passive or active, and both have their place. In passive listening we hear and feel and enjoy without effort. In active listening we listen for certain things that we may understand and interpret. Not every person can sing or play an instrument, but there is no one who cannot learn to listen, both actively and passively, and get enjoyment out of it. Both composing and producing music give pleasure of their own but the ultimate purpose of both is listening either to ourselves or to others. "We thus come to realize the surprising truth that the composer only commences, the interpreter only continues, what the listener alone can complete." [10]

Each child should be allowed to make his own interpretations, get his own meanings, and when he wishes, share them with the group. In the beginning the teacher will need to suggest what to listen for. This suggestion must be only enough to stimulate the child's interest and feeling. It must never be prescriptive. A child's interpretation of what he hears may be as adequate as the teacher's or even more so. He may tell of what

[9] Reported in Archie N. Jones and Claude L. Nemzek, "Children's Interests in Music," *School Music*, Vol. 33, November, December, 1933, p. 6.

[10] Daniel Gregory Mason, *The Quartets of Beethoven* (New York, Oxford University Press, 1947), 294 pp.

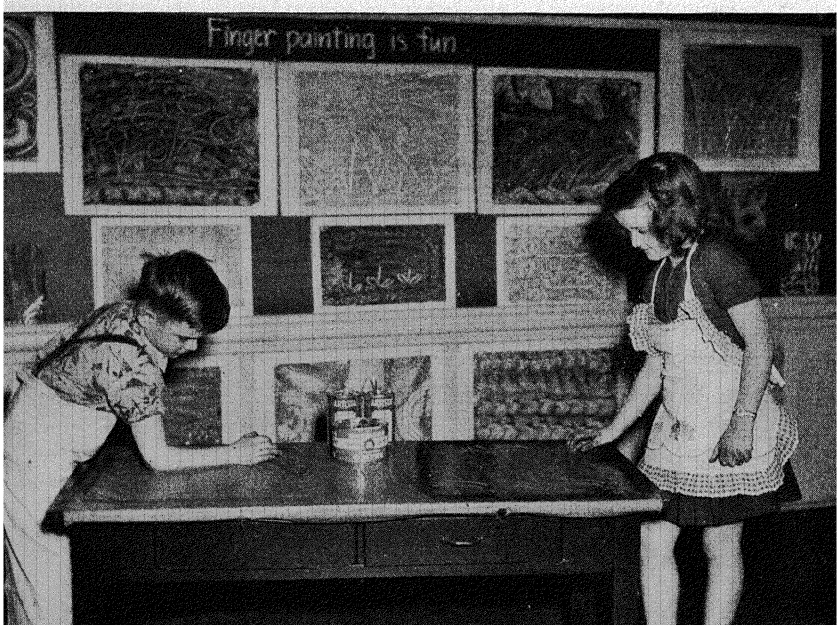


We can all play

Music and pictures tell the story

A kiln-finish for creative work

Personality patterns—boldness and primness



it reminds him. He may listen for a new tune or a new instrument entering in. His expression to the group should be encouraged, as it crystallizes his own thoughts to put them into words. He should not be pressed for ideas, for, not having any at the moment or not wishing to expose some very personal feeling, he may make up something or copy something already expressed. This has a very undesirable effect.

There should be no "musts" in learning to listen to music. The work should be as informal as possible. The lesson plan comes from the music, rather than music being fitted into a lesson plan. There should be no required learning of facts and names. Meaningful learnings occur naturally in a meaningful and enjoyable situation.

There are various times and purposes for quiet listening. It may be that the children are going to accompany the piece with their band or orchestra. First they must listen, quietly, for rhythm, tempo, meaning, different tunes, and other aspects. As they learn to get pleasure out of this listening phase just for itself, they will listen to other music solely for the purpose of enjoyment and understanding.

There are various lists of suggested music particularly valuable for listening.[11] The first criterion is that it shall be "good" music. It must clearly express the thing for which the children are listening. The children may or may not be aware of the thing for which they are listening, but the teacher must have a general plan in mind.

To repeat, listening is more than hearing. It is the active thinking or feeling. The child must be listening for something, know for what he is listening, and recognize it when it appears.

Aims for developing music appreciation in the intermediate grades have been expressed as follows: [12]

1. To develop musical taste through an ever increasing delight in singing and listening to good music
2. To become familiar with the orchestra as a whole and with the individual instruments
3. To understand and appreciate the difference between pure and descriptive music, including major and minor modes
4. To recognize by style the march, waltz, minuet, and gavotte, and to recognize the different movements in the suite, sonata, and symphony
5. To understand the principles of simple form, developed from the recognition of a single theme to three-part song form, rondo, and theme with variations
6. To become acquainted with some of the most famous composers through familiarity with their music and through interesting appropriate biographical incidents
7. To become acquainted with national characteristics of various countries as expressed in their folk music

[11] References which contain good lists are *Teachers' Guide to Child Development in the Intermediate Grades*, pp. 419-422, and the Pasadena Course of Study.

[12] *Teachers' Guide to Child Development in the Intermediate Grades* (Sacramento, California, State Department of Education, 1936), p. 417.

Baldwin discusses "musicianly listening" and sends her music teachers out with these "marching orders": [13]

> Know your music. Never attempt to present a piece until you are familiar with its mood, background, musical beauties, and teaching opportunities.
>
> Know your child, his mood or attitude, his background, social and musical, and the points at which he will be vulnerable to the various elements of the musical experience.
>
> Then, with a single purpose, and that the enjoyment of music, fit your selection to your listener. No music is too good for children. The greatest masterpiece, properly presented, is often surprisingly acceptable to the least listener.
>
> Never lay down the law; in matters of taste there is no law. Forget the teacher-pupil relationship and be the child's companion on a splendid adventure. You have been over the road before, which should make you a desirable fellow-traveler. The child is having his first-time thrill; it is your privilege to share it. Let him make some discoveries himself. Listen to him as well as to the music for he may be able to show you things not mentioned in your well-thumbed guide-book.
>
> Do not expect to measure your results, for appreciation is many years a-growing and is often keenest in the most silent, undemonstrative child. Yours is an inconspicuous service and for that reason you need not hope to be a person of importance to taxpayers, administrators, or fellow-teachers. They are more interested in bands on the football field, in contests and money-making operettas, in choruses of hundreds dressed in white. But when you feel discouraged, remember that the intangibles and unshowables for which you have worked, the joy, the good taste, and the culture that come with the appreciation of music, will be functioning in the life of the individual and the community when school days are long, long past.

Radio. The radio has made an enormous change in the contacts people have with music. Many bewail the fact that children hear so much "bad" music. But there are many points on the other side. In the first place, little of the music is "bad." It is written and played for the large group of people who have never progressed beyond the elementary stages of music appreciation. For them it must have rhythm, and the story must be plainly told in words. Anything calling for deeper study and interpretation is beyond their level. A little of such music may even be said to be desirable. It readily engenders feeling and usually calls for an active response. It helps us understand much of the world about us who know little more in music. Besides, it is usually well played except perhaps from some of the small local stations.

Then, besides this popular music, there is a wealth of other types. There are programs of folk music from the various countries. There are programs of various combinations of instruments. There is the better music of the dance and many other types including even the opera and the symphony. One cannot listen to the radio very much without, perhaps inadvertently, hearing some of this better music.

[13] Lillian L. Baldwin, "Listening," *Thirty-Fifth Yearbook* of the National Society for the Study of Education (Bloomington, Ill., Public School Publishing Co., 1936), p. 98. Quoted by permission of the Society.

The school's responsibility lies in several directions. Especially good programs during school hours should be prepared for and listened to as a group. Valuable programs outside of school hours should be called to the pupils' attention and discussed the following day. The school should develop taste for the better music. Teachers should not ignore or refuse to consider the popular type music, if it is the favorite of the group. Rather, they should bring it into the classroom and place it in juxtaposition with good music which is especially appealing to children. Do not force an opinion, but soon children will see that the popular music is only one type, and, though it has its place, there is other music which is worth listening to, which has other values and which they may also enjoy.

An evaluation of the public's taste in music appeared in *Fortune*.[14] They found through their quarterly survey some very interesting facts, some of which they summarize as follows:

Which kind of music do you prefer?	Popular	42.5%
	Classical	21.5
	Both	31.3
	Neither	4.7
Have you ever heard of Arturo Toscanini?	Yes	39.9%
	No	60.1

Of those who said they had heard of Toscanini, 71 per cent identified him correctly as a symphony leader.

Briefly these figures mean: (1) more than half of those questioned liked to listen to classical music, and (2) more than a fourth of them could identify Toscanini.

The Broadcasting Yearbook [15] analyzes the distribution of "nationally" sponsored network time and found in 1948 that 10.9% of the programs were musical variety shows, 9.3% popular and dance music, and 6.9% concert music. These were once-a-week evening programs of twenty-five minutes or more. Thus 27.1% of this time was devoted to some type of music. The local stations carry a larger percentage of music, mostly recordings. The popularity of radio is still increasing, for over a million radio and television sets were sold in 1948. Not only that, but the number listening at each set and the amount of time the radios were turned on were greater according to the Hooper analysis. In 1948 the average home listened to the radio five hours a day.

Children as producers. In the kindergarten and first grade children are given opportunity to learn to sing songs by rote. Beginning in the second grade, teachers in most situations have been introducing the *sol-fa* syllables and the reading of music. Beyond the primary grades the rote learning of a song was an exception.

[14] "Toscanini on the Air," *Fortune*, Vol. 17, January, 1938, pp. 62-63. Reprinted by permission of the Editors of *Fortune Magazine*.

[15] *Broadcasting*, 1949 Yearbook Number (Washington, D. C., Broadcasting Publications, Inc., 1949), pp. 18 and 20.

Shall children learn to read music? A move to change this procedure has now become rather widespread. Some say all song learning should be by rote through the first three grades, some say even through the first six grades. Kwalwasser [16] believes that no sight reading should be attempted until grade four, and from that point on used sparingly, and at no time in the elementary school should it be demanded of all pupils. In the first place, many pupils are not interested in it, cannot use it with any satisfaction, and will never again need to know it. In the second place, as he so aptly points out, even when it is "demanded" of the entire group, only a few are actually reading the music. The rest are following these leader voices.

Dykema asks a very pertinent question here:

> "May we not justly maintain that the test of the adequacy of our reading instruction is to be found in the extent to which our program will make the reading of music so attractive to children by means of the right experiences and the right kind of printed or written material that the child will grow steadily in his desire to learn new songs or review old ones by himself?" [17]

In the survey of a school system, Kwalwasser found that the standards of the Music Supervisor's Council which were described as easily attainable were beyond the reach of the children.[18]

Fullerton [19] reports results of twenty-five years' work in rural one-room schools. Having little equipment and teaching with scanty musical training and ability, he introduced the use of the phonograph as a means of teaching rote songs. He says, "They sing unison songs and two part songs with beautiful tone quality; accurate pitch; light, floating rhythm; and fine interpretation. The success of these children in learning new songs forced us to raise the question as to the necessity for teaching children to read vocal music note-by-note in the schools."

Then Fullerton decided to find out from teachers how many thought of the individual names for the notes when they, themselves, were learning a new song. They found that "for every one of them that thought of the names of notes while learning a song there were forty-nine that did not." Is it not somewhat the same situation as the child's learning to read? Until quite recently it was thought necessary for the child to "know his alphabet" before he could learn to read. Now we know it was worse than a waste of time.

One proposal has been made which at present seems quite radical but theoretically seems to hold much promise. This is to learn to read directly

[16] Jacob Kwalwasser, *Problems in Public School Music* (New York, M. Witmark and Sons, 1932), Ch. VIII.

[17] Peter W. Dykema, "Some Fundamental Questions about Music Reading," *Music Educators Journal*, Vol. 35, September, 1948, pp. 24-26.

[18] Kwalwasser, *op. cit.*, p. 107.

[19] C. Fullerton, "Vitalizing and Standardizing School Music," *Journal of the National Education Association*, Vol. 27, December, 1938, pp. 282-283.

from the staff with the aid, perhaps, of the piano. In this way children learn the tone value of each position on the staff, modified by sharp or flat. This may be done by reading the music of a song they already know well. Here all the techniques take on meaning in terms of what they already know. They may omit, without loss, much of the dreary, difficult, formal technique now thought necessary. Many relatively experienced singers say that they learned to read music by simply following the score as they were singing a song they already knew or singing with a group.

Whatever technique is decided essential and valuable should probably be based on this criterion. Only such material should be taught as seems necessary to the children for continuing the work they wish to do at that particular time. No technique should be made a subject of drill. It should come from planned, incidental learning. It should receive direct, concentrated attention only when the children themselves feel the need for it. This criterion is being set up largely for other more fundamental skills. Should it not be all the more applicable to a subject whose main purpose is to furnish enjoyment?

The "unmusical child." A word should be said for the so-called unmusical child, the child without a singing voice. In reality there is almost no such thing. Kwalwasser says that "monotones are inexperienced singers found in considerable numbers in the early grades."[20] Occasionally, there is a child with a hearing difficulty such that he cannot distinguish pitch, or a throat difficulty so that he cannot control his voice to any extent. These need medical assistance. Very largely, however, the child is a monotone because of lack of experience in listening and in singing. The thing he needs is practice. He should be encouraged to sing or attempt to sing with the group.

The method being used in many places, notably Pasadena, California,[21] is to plan special work for out-of-tune singers. Here they suggest grouping the class into three sections: those who have flexible voices and can sing on key, those with flexible voices but who yet lack the ability to sing on key, and those who have not yet discovered the difference between the singing voice and the speaking voice. The children should not be made aware of this grouping. No group sits and waits while others sing. Instead, the in-tones sing the phrases requiring most control, while the next group sing alternate, easier phrases. By careful choice of songs this works out very well. The third group needs help in matching tones. This need not be an exercise but an answer to the teacher's call, or a sort of game in which the same measure of two tones is repeated again and again. This gradually increases and varies as the child gains skill. Most cases should make definite progress and should not need much over a half year to be able to join the next group.

[20] *Op. cit.*, p. 54.

[21] Pasadena City Schools, *Suggestions to Teachers in Guiding Pupil Experiences* (California, 1936), pp. 115-119.

Range of voices. Experimentation has shown the range of children's voices. A report of this range in children from two to ten years is discussed by Jersild in the *Thirty-Eighth Yearbook.* At six years the range is from A below middle C to G above high C. At five years the high point was D and at ten the low point was F for 48% of the children. The boys' range was F below middle C to G above high C while the girls' range was G to A, one step higher at either end of the scale.[22] However, these ranges may not apply to any particular child.

Experiencing rhythm. Another vital and essential experience in music is rhythm. By this is meant, not the finger-tapping insisted upon by many teachers, but the response of the whole body of the child. It is only through such whole-hearted, unself-conscious response that a child can sense the full beauty of music. Besides this it is one of the most integrating experiences a child can have. Every phase of the child, his thoughts, his feelings, his physical body are all responding to the same moving force and directed toward fulfilling the same purpose.

Jacques-Dalcroze is the most important pioneer in this field. Since he presented his ideas [23] much work along this line has been done in nursery schools and kindergarten. A little of it is used in the first and perhaps the second grade, and from then on it is unusual and sporadic. There should be a continuous plan from the time the child enters school until the end of high school. It must be well planned and suited to the development of the various age groups.

In studying the child up through the first grade, Christianson [24] gives many illustrations both of individual and group reactions in bodily rhythmic response to music. She also gives a list of well-selected music to be used for this purpose. One hundred instrumental selections and fifty songs were judged by seven experts as to their value for "children's growth needs from the standpoint of expression through bodily rhythmic movement." [25] These are included in the appendix of the book together with the nationality (in case of folk music) or the composer, the number of specialists giving each of four ratings, the compiler, edition, copyright date, and publisher.

Two albums of folk dance records have been put on the market: one for the lower grades and one for the intermediate groups. Their special feature is that the instruction for each step of the dance is on each record and eliminates the difficulty of timing the steps to the music. During the

[22] National Society for the Study of Education, *Child Development and the Curriculum, Thirty-Eighth Yearbook,* Part I (Bloomington, Ill., Public School Publishing Co., 1939), p. 143.

[23] Émil Jacques-Dalcroze, *Rhythm, Music, and Education* (New York, G. P. Putnam's Sons, 1921).

[24] Helen Christianson, *Bodily Rhythmic Movements of Young Children in Relation to Rhythm in Music,* Contributions to Education, No. 736 (New York, Teachers College, Columbia University, 1938).

[25] *Ibid.,* p. 142.

instructional part, the music is played slowly. In the second part, the music is played for desirable folk dance timing.[26]

Glenn[27] suggests rhythmic experiences for elementary- and high-school pupils. In her suggestions for elementary pupils she proposes four experiences. The first is best expressed in her own words:[28]

> In the music of Bach, Mozart, Handel, Gluck, Corelli, Beethoven, and other great masters, and in numberless folk songs, can be found the best examples of lilting rhythms where. in passages of sixteen measures, are experienced moods that can be easily caught by the young child. There is a variety of music that runs, another that marches in dignified fashion; there is music that skips, and music that gallops; there is music that sways, and music that sends fairies walking on tiptoe.... Allow small children to be alone with this music, eyes closed, so that their neighbors' reactions will not confuse their own. Soon a majority of the children will express the mood and swing of the music, and one can tell by the expressions on their faces that sensing the mood through rhythm has brought them pleasure.

The second experience is in the sensing of the phrase. This must be a feeling that is developed and not a formal exercise. The third experience is the recognition of the rhythm of the measure and its accent. Here again it is by catching the swing rather than by restricted finger-tapping with an arithmetical basis. Through this the meaning of the upper figure in the signature is discovered. The fourth experience comes through the rhythmic stepping of the tunes, the run, the walk, and the very slow walk. This gives meaning to the notes of different values, and they sense the rhythmic pattern and understand the lower figure in the signature. The main purpose in all this is for the child to feel this rhythm, the understanding it gives to written music is an incidental outcome.

When sight reading, either vocally or instrumentally, is to be done, the child should first read and feel the rhythm either through stepping or clapping. When this is really established, a great many of the difficulties have been solved.

The rhythm band and toy orchestra. The child's interest in rhythm finds another outlet in kindergarten in the rhythm band. This is simply a group of children, each with a percussion instrument. With these they beat out the rhythm which they feel in a certain piece of music. This, as all other work in music, should be spontaneous and purely for enjoyment. As soon as it is something he is told to do or that must be done, much of the value is lost.

The toy orchestra may be attempted after half a year of rhythm-band

[26] *Folk Dance Records,* arranged and recorded by Joseph Burns, Ruth Evans, and Edith Wheeler. Albums of four double-faced records obtainable from Joseph U. Burns, 573 Connecticut Avenue, Bridgeport 7, Connecticut, or Ruth Evans, 326 Forest Park Avenue, Springfield, Massachusetts.

[27] Mabelle Glenn, "Rhythm," *Music Education, Thirty-Fifth Yearbook* of the National Society for the Study of Education, Part II (Bloomington, Ill., Public School Publishing Co., 1936), pp. 53-56.

[28] *Ibid.,* p. 53. Quoted by permission of the Society.

work in kindergarten, if the group is ready for it. While in the rhythm band, all the children played at once; now only those instruments that "belong" or that express the correct meaning are used. In the band all children had turns playing all instruments, whereas in the orchestra each child uses only one instrument for each selection.

The music, piano or phonograph record, is played. Marches and folksongs in simple time are usually the most successful. The children plan together which instruments they should play for the various parts of it. As a child "hears" perhaps the castanets, he is invited to play them, as he feels they are needed. As with all other rhythmic response to music, the greatest value lies in the child's following out his own interpretations and feelings. To have any of it dictated makes it lose most of the value.

Instruments. There is the question of instruments. In the rhythm band they are usually wood blocks, rhythm sticks, drums, and perhaps a triangle and bells. One first grade started in to make instruments and continued until they had a rhythm band composed of drums, rhythm sticks, jingle clogs, castanets, tambourines, jingle bells, sand blocks, cymbals, and a xylophone. The teacher not only describes how these were made but tells how the children composed words and music to several songs about the band.[29]

For the toy orchestra Fox gives a very good list, with prices and suggestions for making them where possible.

SUGGESTED INSTRUMENTS FOR A TOY ORCHESTRA [30]

1. Small cymbals—good quality with enough cup to give resonance	$1.00
2. Two or three Chinese wood blocks, each of different pitch	.75 ea.
3. Six or more jingle bells of substantial make and good tone	.40 ea.
4. One maple bar xylophone [31]	1.75 and up
5. One or two tambourines	1.50 ea.
6. One pair of castanets *on a handle*	1.50
7. One or more small triangles	.50 and up
8. Small chime pipes or xylophones tuned up the scale or standard orchestra bells	2.75 and up
9. Drums [32]	
10. Rhythm stick [33]	
11. Sand blocks [34]	
12. Rattles.	

[29] Grace K. Blackstone, "A Rhythm Band," *Creative Schools, Twenty-third Yearbook* of the Department of Elementary Principals (Washington, D. C., National Education Association, 1944), pp. 46-52.

[30] Lillian Mohr Fox and Thomas Hopkins, *Creative School Music* (New York, Silver Burdett Company, 1936), p. 161. Further discussion of instruments appears in Beatrice Colby Hyman, "Primary Rhythm Bands and Eurythmics," *Fourteenth Yearbook* of the Department of Elementary School Principals (Washington, D. C., National Education Association, 1935), pp. 373-377.

[31] Suggestions for making perfectly tuned xylophones may be found in Satis Coleman, *Creative Music for Children* (New York, G. P. Putnam's Sons, 1922).

[32] The regular snare drum and the Chinese tomtom which are so often used in toy orchestras are not recommended if musical effects are desired. Neither are oatmeal boxes

There are many values in this type of orchestra. It gives the child added acquaintance with much music of various types. It gives him another medium for creative expression. It makes him feel that he is doing something of real importance. In many cases it carries over as an out-of-school activity. It very often becomes a part of a school program. When this is the case, the program should constitute only the daily work of the group and should not be a "show" for which the children have been drilled to perfection.

So far, only kindergarten has been mentioned. This work should definitely be carried over into first grade and should have a place in all elementary-school music. At the present time almost nothing of this kind is done above the primary level. There are many possibilities in using it, however, in the upper grades, especially in connection with plays or the working out of a unit where some phase of music is included. By the third or fourth grade one or more of the advanced instruments, such as the violin or cornet, may be added. Some child more advanced musically will have taken private lessons, or may be taught at school. Gradually more and more instruments are added, and the rhythm band of the kindergarten has developed into a real band by the sixth grade.

Real bands and orchestras. The movement has been gaining ground for some years to organize bands on the elementary level. At first children had to furnish their own instruments. Now the idea is growing that this is as vital as other phases of public education and so should be as free. Schools are buying instruments which they rent to the children at nominal rates. Children are taught in groups and then as the entire band or orchestra. Some pupils from the fourth grade join, but usually the group is composed of fifth- and sixth-graders. Of course, only those interested become a part of the band. The others gain much as listeners. Mattern and Church [35] give many suggestions for solving the problems that arise in the organizing of instrumental music.

There are many values to be gained from school band work. Many

---

good musically. The most satisfactory drum for general immediate purposes (unless authentic types are desired in connection with a study of ancient and modern civilizations) is a piece of inner tubing from an automobile tire stretched tightly over one or both ends of a large tin can or small nail keg. The tones of these drums are subdued but resonant, and the player can expel a great amount of surplus energy on these drums without in the least marring the music. From one to fifteen or more drums may be possessed by any class. In fact, a drum chorus is always effective, especially as suggested in the unit on the North American Indian. The size of these drums will vary from the number 2 sized tomato can to one which takes the entire width of the inner tube after it is cut open. The inner tube should be fastened on with several tight rubber bands of the same material. Lacing or sewing pulls out of the rubber. Drums of different sizes give different pitches, and may be played like the kettledrums in the symphony orchestra.

[33] Three-sixteenth inch doweling cut in nine-inch lengths gives a light musical click.

[34] Sand blocks and rattles may be made quickly and easily by children.

[35] David Mattern and Norval L. Church, "Instrumental Activities," *Thirty-Fifth Yearbook* of the National Society for the Study of Education, pp. 75-90.

children learn to play instruments so that they may make that a leisure-time activity. Children become well acquainted with a relatively large amount of music. They come to know the names, characteristics, and means of playing of many instruments and learn to identify them by sound. All this leads to a much broader basis for music appreciation.

Besides these values, Mursell[36] indicates some of the social values of group work where all are working together for the same goal. It may be as much a coöperative enterprise as the rhythm band. The teacher should stress these elements rather than putting the emphasis on the finished product as on the professional level.

Since the music can be an addition to many community functions, the children have many opportunities for coöperation. Their music has a use. Any program should grow out of the normal work and be a part of it.

In order to insure that the playing may become a leisure-time activity, Mursell makes three other suggestions. Each child's playing should be built to the level where he can gain pleasure from its use. Each child should have experience on more than one instrument. Opportunity should be provided for continued use in a group by community enterprises and organizations.

Creative music. There are several different interpretations of what is meant by creative music. In the broad interpretation of the term, a great deal of children's response to music is creative. That is as it should be. The other phase is the writing of music, the original conception of melodies with as much of the accompaniment as is desired.

This writing of music may begin as soon as a child enters school and continue through life. With young children, the children may sing their songs, and the teacher will write them down as she does with their stories and verses. As the language of music is more difficult and less used than the verbal language, children will need help in writing down their songs for a longer period. This very desire to be able to write their own music may be a motivation to learn the written language of music. Whenever this desire is real and spontaneous, advantage should be taken of it. In music and all the other creative arts as well, capable children should be given every opportunity and every encouragement to develop their ability as rapidly as they wish.

How shall we get pupils to create music? Where the situation is sufficiently informal, which is usually true only in nursery school or kindergarten, children may naturally express themselves rhythmically and melodiously. A phrase, a thought, will be chanted and the teacher must be alert to catch and encourage such expression. Where the situation is more

[36] James L. Mursell, "The Educational Value of the School Band," *Yearbook* of the Music Educators National Conference (64 E. Jackson Blvd., Chicago, 1935), pp. 243-247. Other articles in this volume are of value when considering instrumental music, pp. 248-278.

formal and children more self-conscious, other procedures are necessary. One first step is to make the child realize that music is a language and that he can express his feelings through it. Unless there is a specific discussion of this, children feel that the writing of music is only done by a few talented adults and is entirely beyond them. The idea of expressing themselves through original music may never occur to them. Composing music as a group is a good first step. It inspires and opens possibilities. Many teachers use this procedure to a considerable extent throughout the grades.

The next requirement is a richness of experience from which pupils derive feelings which they wish to express. This point can not be too greatly emphasized. It is only when the child is experiencing fully, mentally, emotionally, physically, that he has the unconquerable desire to express these feelings. Then, if the medium of music comes to mind and he has had some experience with it, it is likely that he may express himself through it.

This expression must come at the time of the inspiration or feeling. It cannot fit into a program, be regulated by the clock. There can be no period set aside in which each child is expected to create music. Rather, the teacher must be alive to the signs and take advantage of a child's feelings at the time he wishes to express them. The teacher, however, may have in mind setting up a situation which would likely result in creative musical expression.

Techniques. The writing down of this spontaneous music must first be entirely the teacher's responsibility. Later the group as a whole takes part, perhaps by the fourth grade, depending on the children's interest and desire to learn the techniques. Beyond this group participation in notation of their music, comes the writing of his own music by the individual child. This may or may not occur in elementary school, depending entirely on the interests and abilities of the pupils.

The creating of music often stimulates creativeness in other fields. Words are given to make a song of music, usually at the same time, though sometimes before and sometimes after. Often art is brought in as the children illustrate the thoughts and feelings they have expressed in words and music.

Any teacher who has not had successful experiences in leading her group in creative music should do considerable reading before attempting it. Several valuable references [37] will be found in the bibliography at the end of the chapter.

The direction in which music education has traveled in recent years and the directions in which it might well proceed in the near future have

[37] Particularly *Teachers' Guide to Child Development in the Intermediate Grades*, pp. 422-432; *Thirty-Fifth Yearbook* of the National Society for the Study of Education, Part II, Chapter XIII; Fox and Hopkins, *op. cit.*

been expressed by leadership in that field. The 1948 Convention report [38] of the Music Educators Conference lists several advances that have been made.

Folk music—folk songs, group singing and elaboration of traditional idiom for choral expression—has achieved a new place of prominence. The first formal presentation of folk music at a Music Educators Conference was in 1942.

The audio-visual has been more closely linked with music teaching. This includes records, films, and radio.

Creative music with its problems and opportunities is becoming a basic part of our music education program.

School and community are finding more and more opportunities for planning and working and enjoying music together.

Instruction on strings has had a much needed increased emphasis. A place has been found in the daily program for opera repertory.

There has been a closer relation between musicology and music education.

International relations has had a greatly increased interest.

To point the way to further advances needed emphases have been listed.[39] One of the greatest needs perhaps is more small-group musical activity, both vocal and instrumental. The desire seems to be all for as large bands or orchestras as possible, and group singing is all for choruses. Instead, small groups such as string trios or other natural groups of two, three, and four performers should play together, for this is so much more likely to be the way they will play in out-of-school situations. They should form vocal trios, quartets, or sextets, just singing together, or learning to harmonize or "barber shop." In too many cases the students have not learned how to just "have fun with music." Much of the time the whole music class should be given over to singing representative music literature. Youngsters should learn to participate in musical activity in their social life. Here is the place for the ukelele, accompanying with its chords the singing of groups.

Another needed emphasis suggested was more opportunities for creative expression in music activities.

> They . . . are far too few in the majority of our schools. One reason for this deficiency in our curricula is the emphasis which we have placed on technical proficiency. . . . The solution requires two changes. First of all students must be given a workable knowledge of the theory of music instead of an academic perusal of the structure of music. There is but one practical approach to the study of the theory of music—that of creative writing. The student must be made to feel that he needs to know music theory in order to apply this creative talent,

[38] "Music Education Marks Another Advance," 1948 Convention Report, *Music Educators Journal*, Vol. 34, April, 1948, pp. 18-21.

[39] Kenneth N. Cuthbert, "Needed Emphases in Music Education," *Music Educators Journal*, Vol. 35, September-October, 1948, pp. 21-22.

starting with crude beginnings. The student should be guided toward intelligent and refined results.[40]

Two of the groups of Consultants in the Music Educators organization have presented suggestions which are worth considering. The Southern Consultants suggested the following proposals for in-service training of music teachers:

1. Establishing workshops in individual school units in city, county, or other areas where such services are not now available.
2. Taking key teachers to smaller groups within those larger units to share activities, techniques, procedures; sharing performance groups with each other.
3. Using the decentralized festivals in areas where the assembling of large groups of children is not feasible, thus making each school responsible for utilizing the community resources at its disposal.
4. Inter-class visitation within cities, counties, or schools within a unit.
5. Helping coördinate the existing music interests of each community, thereby strengthening all music groups or interests in the community.
6. Setting up educational forums. In these groups the administrators should be invited to share with us their problems, wishes, and desires, while the music folk in turn share their aspirations with administrators.
7. Coöperating with the teacher-training institutions in our areas concerning the chance of getting music in all of our workshops as a part of the background for any teacher. This work should receive credit.
8. Offering our state educational magazines one article at least every two months. Such articles should give specific help on materials, procedures or philosophy underlying our whole program.
9. Stimulating the special teachers who are already on the job to share more with the community in which such teachers work.
10. Getting all music teachers affiliated with the professional organizations, with the feeling of belonging.
11. Asking administrators to include in every faculty someone who can teach music.[41]

The North Central Consultants group made the following recommendations:

I. LISTENING

(1) More stress should be put upon quiet listening as a means of developing emotional stability.

(2) Because of the need for quiet listening on radio programs in and out of school time, it is recommended that requests be made by educational authorities for periods of sustaining programs suitable for such listening.

(3) Institutions of higher learning should recognize the need for specific training in this field.

(4) The importance of having necessary aids to develop a listening program should be recognized. These aids include records, radio, films, and any other suitable material.

(5) Discriminating listening should be encouraged as a hobby.

[40] *Ibid.*, p. 22.

[41] "Music in the Elementary Schools," 1945 Consultant's Councils' Report, *Music Educators Journal*, Vol. 31, May-June, 1945, p. 24.

II. SINGING

(1) Stress should be put upon the singing of folk songs of various nations to further understanding among peoples in a united world.

(2) More auditorium sings should be encouraged for maximum school interest and unification.

(3) Teachers should be made cognizant of, and make use of, the wealth of new material available.

(4) More stress should be placed upon the music reading-readiness program.

(5) Interest in music reading should be expanded upon the basis of many musical experiences.

III. PLAYING

(1) It is recommended that melody, percussion, and keyboard instruments of the preparatory type be used as a part of the complete musical experience to stimulate interest, social activity, and reading, as well as to discover talent.

(2) The piano should be considered the basic instrument for the musical development of every child.

(3) Piano class instruction should be a part of the regular school curriculum.

(4) Particular emphasis should be placed upon class instruction in violin and cello, and the pupils should be started as early as possible.

(5) Class instruction in string, percussion, and wind instruments should also be a part of the regular elementary school curriculum.[42]

III. GUIDING CREATIVE EXPERIENCES IN GRAPHIC ART

Graphic art here is meant to include drawing, painting (with all the various media), modeling, sculpturing, constructing (with paper or more durable materials), making the surroundings more attractive, and gaining a true appreciation of all these when done beautifully by others.

The place of art education. "The trend in outstanding schools is to relate education to the actual needs of all pupils as individuals and as members of contemporary society, and to meet existing problems in real life-situations. Art in education must follow this example more than it has to date and provide *all* pupils—not only the talented few—with opportunities to make art function as a vital part of everyday life. This is the challenge to art education raised by the current interest in general education." [43]

There has been a gradually changing emphasis in art education through the years. One of the earliest was "art for art's sake," which resulted in training in skills and techniques. The reaction from this produced the emphasis on appreciation. This came in the era of education which put the emphasis on the learning of facts and figures, so that it naturally partook of these formal techniques and developed very little real appreciation. The next movement was creative self-expression which

[42] *Ibid.*, pp. 24-25.

[43] Robert S. Hilpert, "Changing Emphasis in School Arts Programs," *Fortieth Yearbook* of N.S.S.E. (Bloomington, Ill., Public School Publishing Co., 1941), pp. 447-448.

has been accepted as a major objective by most schools. Few teachers are yet quite sure what is meant by "creative" and what may be regarded as "expression." Appreciation is being approached through the child's own participation. There is need for many more concrete suggestions to help the children develop this creative self-expression. Some of these are given toward the end of this section.

There was an attempt made to correlate the arts with other subject areas. This furnished added purpose to art education, but too often it was dragged in by the heels. The program was often impoverished, for only those phases were considered which fitted in with some other part of classroom activity. The integrated curriculum followed, which is breaking down the artificial boundaries between subjects. In the ideal program each phase of life, of which art is one, is given its own rightful place in the total. However, unless there is careful planning the proper emphasis on art as well as on other areas may be lost. This does not mean that integration does not have possibilities of great educational value. Rather it provides the framework into which a real and vital art education can best find its place.[44]

A guiding philosophy. Every course of study sets forth its guiding philosophy, but perhaps this one, which was built to emphasize the importance of individual thinking and planning, is as helpful as any:

> This art program accepts art in its broader interpretation: its forms, including articles familiar and useful in everyday living; the books we read and the clothes we wear; its materials, ranging from wood to embroidery woolens; its tools, from chisel to needles; its processes, varying from stage lighting to linoleum cutting and printing; its styles, symbolic, abstract, realistic, or fanciful; and its avenues of experiencing, including enjoyment, research, creation, and evaluation.
>
> Variations in ability and interest are expected and provision made for them. There will be headdresses for a Hallowe'en party; costumes and programs for a class play; trips to parks, shops, and other classrooms; gifts and toys for others to enjoy; arrangement of exhibits for visiting friends and relatives; a wall-hanging to enhance a classroom, library, or corridor; a book of painted interpretations of trips and stories; table decorations for a party; colors to be mixed for scenery; dyes for costumes; mats and frames for paintings and drawings; explanatory notes for displayed collections and exhibits; controls for marionettes; lettering for a class book; and many other significant experiences. There is much for all.[45]

The Delaware Curriculum Bulletin in Art, which is based on this philosophy, is one of the most helpful. In their material no year levels are indicated, since most of the material is applicable at all levels; but a simple progression will be seen in each section. The following is illustrative of the basic plan of organization and material included:

[44] This section has been partially based on Robert S. Hilpert, *op. cit.*, pp. 448-451.

[45] Edith L. Mitchell, "Basic Concepts. Art Education—How Art Contributes to our Daily Living" (A Bulletin for the Guidance of Teachers, Grades 1-6. Preliminary Draft for Evaluation Only. Delaware, June, 1940).

Knowledges

Materials and Tools. Knowledge of art tools and materials, processes, and techniques aids in planning for their use. Experimenting with these is a good way to start. One experience with an art medium does not exhaust its possibilities for future enjoyment and participation.

Nature of Art and Its Sources. There are many kinds of art (known as 'art forms'), such as a rug, a book, a poster, a textile, or a clay dish. All fine art has a plan. Plans vary because of material and function. The things you know best are the things best to use. Ideas can be used to show how you feel as well as what you see.

Processes and Work Habits. Talking and reading about art help to clarify its nature technically and appreciatively. Measurement of achievement in art should be considered in terms of individual improvement over past performance. Performance does not necessarily mean actual making of something. It may be interpreted as meaning any type of art experiencing, such as research, selection and arrangement of forms and colors, or planning art activities and evaluating them upon their completion.

Composition and Design Elements. There are no fixed laws of design and composition. There are, however, common basic principles that can function in all art. Some of these are referred to as balance, rhythm, transition, opposition, emphasis, variety, and contrast. Order is related to art and is a part of it. Order can be achieved by putting things together that are somewhat alike and by the use of grouping. Using too many things alike will be orderly but tiresome. Interesting variations can be had by the use of a few elements that are different in size, color, form, or texture.

Motivating Sources. Religion, work, and play experiences of people have been powerful motivating factors in the production of art. Science has contributed much toward the achievements of art through the ages.

Relationships. Meanings should be attached to learnings in relation to the study of art of other peoples and times. Reasons for their art forms, materials, and techniques as well as their ideas and interpretations. An understanding of the uses made of such art. Familiarity with some of the industrial practices related to forms, materials, and processes experienced in school.

Skills and Habits

Materials and Tools. Increased power and diversity in their use.

Procedures. Noting techniques and information to be gained. Getting information and guidance when needed to maintain a high standard of work. Seeing with a purpose and an informed and inquiring mind. Seeing with conscious recognition esthetic elements in nature and art.

Applications. Continued use of art not only as a means of expression but also as it helps serve practical needs inside and outside of school.

Growth and Evaluation. Awareness of personal strengths and weaknesses in art through self-appraisal and attention to the constructive opinions of others.

Appreciations and Attitudes

Creation, Enjoyment, and Evaluation. Art may serve different people in different ways. To some, it becomes relaxation; to others, intense concentration and industry. Its enjoyment and participation help to establish a sort of balance in living. Realization that standards of taste are outgrowths of experience and

education, and that borrowed ones are more of a handicap than a help. Art is like other areas of school learning in that reading, research, experimentation, review, and evaluation are essential to its fullest realization. It is unlike some in that there are no hard and fast rules. Expecting rather than resisting, changes in personal taste and preferences in art. Interest in new developments in art rather than opposition and distrust.[46]

The various methods, materials and areas to be covered were discussed by Meier and he gave the following suggestions:

Meier reported that (a) in the period from the nursery school through Grade III the training procedure is mainly that of providing suitable material—finger painting, soft chalk, and clay—and favorable working conditions; (b) creative imagination is furthered by exposure to subject matter likely to enlarge the child's experience; (c) the teacher can also supply ideas for the solution of technical difficulties when the child seeks help, although his rôle is primarily one of guidance; (d) the teacher can supervise activities such as class trips to the bakery, to a farm, or to a fire station, in a way to enlarge the child's experiences with life and provide suggestions for subject matter for his artistic activities; (e) the central aim is always to make it possible for the child to initiate and project his own expressive activity and to permit him the satisfaction of being a cause of his own achievement; (f) in the period from Grade IV through Grade VIII the school should offer a varied program in art in order to offset the facts that during this period the child is likely to be aware of limitations in technique, that art interest suffers somewhat from the competition of other activities, and that the choice of subject matter will be complicated by the child's cognizance of a multitude of new objects and new interests; (g) in order to forestall the drop in interest in art that appears to come to the typical child at the beginning of junior high school, the curriculum should be revised in such a way that the number and variety of art activities are sufficient to enable individual pupils to find some activities in which they may have particular interest and facility; (h) since every child will be a consumer of art, instruction should tend to promote a constantly deepening interest in the art aspects of life; (i) the art activities should more closely approximate the pupils' interests and the community's interests; (j) attention should be called to the art factor in many matters that usually escape the textbooks, such as design of automobiles, public buildings, manufactured articles of all kinds, as well as in caricature and other media of social control, movies, and advertising.[47]

Seeing. The impressions on the nerve endings in the retina of the eye are meaningless and valueless unless we can interpret them. It is only that which is perceived which has any meaning. By wide experience with our environment we learn to interpret the things about us. The same may be true of art.

Art is the interpretation of feeling and experience. We must have sufficient contact with it so that we may learn to "see" the interpretation and the experience or feeling which the artist was trying to express. In too many cases, art is judged as to the faithfulness with which it reflects the

[46] E. L. Mitchell, "Curriculum Experiences for Elementary Schools," *Delaware Curriculum No. 1,* September, 1940.

[47] N. C. Meier, "The Graphic and Allied Arts," *Thirty-Eighth Yearbook,* Part I, of this Society, 1939, pp. 175-184.

subject, rather than the expertness with which it interprets meaning. Again, art may be judged as to the extent it follows out set rules for composition, line, and color. The extent to which these three have been adequately utilized to express the idea or feeling which prompted the art is of far more importance for appreciation than the extent to which certain formal rules have been met.

In the beginning grades children are not mature enough for real appreciation of art. The story told in the picture is the extent to which they can interpret it. This does not prevent their becoming familiar with good pictures, however. Tannahill[48] says, "As soon as children begin to notice colors that the artists use and their *ways* of expressing their feelings and telling stories, art appreciation in pictures has begun." The time when this happens depends on the child and his previous experiences with pictures.

How improve the seeing? In helping children to see pictures, they must have experience with "good" ones. These should portray ideas that are simple enough for the child to grasp and within his own experience. True-to-lifeness as the children see it seems to be a definite factor in determining which pictures they like.[49] Occasional comment by the teacher determines the direction which their "seeing" will take. Questions will stimulate thinking. A few carefully chosen facts concerning the background of the picture, the author, and other information so often brought into art-appreciation lessons, may be valuable. But, they must be few and such as to stimulate the child's thinking and not block it off. Many commentaries are simply an imposition of one person's interpretation, in which case they are worse than nothing.

It has been found that if we are to develop appreciative capacities, we must not depend solely upon the repeated exposure of a picture or a poem without comment, criticism, or study by the children. Undirected observation does not necessarily produce an appreciation of the content, style, color, rhythm, or other elements of art or literary materials. Neither will this narrow method provoke or direct a continuing and growing taste for meritorious paintings or poems.[50]

The term *pictures* has been used here only to simplify discussion, in as much as pictures do comprise the largest part of art-appreciation material in the elementary school. It was not meant to exclude modeling and the like, which are coming to have a very important part, particularly in the creative phase.

Some creative experience of the child's own is of great assistance in

[48] Sallie B. Tannahill, *Fine Arts for Public School Administrators* (New York, Teachers College, Columbia University, 1932), p. 61.

[49] Bonnie E. Mellinger, *Children's Interests in Pictures,* Contributions to Education, No. 516 (New York, Teachers College, Columbia University, 1932).

[50] James E. Mendenhall and Marcia E. Mendenhall, *The Influence of Familiarity Upon Children's Preferences for Pictures and Poems* (New York, Teachers College, Columbia University, 1933), p. 70.

appreciating what he sees. After he has striven to express some feeling he more readily interprets the feeling expressed by someone else.

Another way in which the child should learn to "see," is to see beauty and want beauty in all that surrounds him. This depends very largely on the teacher's habits and attitudes. She must make the room as attractive as possible. Neatness and order are the first requisites. There must be color and light. It must not be barren, nor yet congested. One or two good pictures suited to the age of her pupils should be on the walls and exchanged after a period of time for others equally valuable. A plan may be worked out so that all the pictures suitable to a certain age level may be exchanged within the school system. The teacher herself should always be dressed in good taste, for her grooming and general appearance often become somewhat of a model or ideal.

It should be kept in mind that art appreciation is closely related to art consumption, since one must be able to understand and evaluate art products if one is to select and use them efficiently. It is therefore essential that the needs of children as consumers of art products be given greater consideration in art teaching at all grade levels than obtains at the present time. Drawing and painting are not nearly so important in human life as most art course-of-study makers would have us believe. Architecture, both exterior and interior, furniture, costume, and numerous machine-made things and products of the handcrafts are of far more significance in the lives of most of us than are drawing and painting.[51]

Producing. Many will say that all graphic art is creative. To a certain extent it is true. There is much, however, of art work which cannot strictly be called creative. Creative work in art, as in all else, is the expression of a person's individual feeling, his own interpretation of impressions received through the senses. Besides this there is reproduction, illustration, and recording, all of which may at times be creative, but very often is and should properly be "copy work."

When art is used in connection with units of work to increase further the child's understanding of the topic, it should usually be accurate reproduction. Reproduction of scenes or conditions in some other time or place, if they are to be of value, must be accurate. Reproduction is used here in a broader sense than the strict copying of an entire picture, which is so prevalent in many classrooms. Illustrations to clarify meanings must be as true to reality as possible, although the amount of detail is optional. Otherwise, instead of increasing understanding and knowledge, they distort it.

However, during this same study, the children may wish to express their own idea or feeling about some phase of life or character. Here is opportunity for their creative work. Children must realize and learn to recognize this difference.

For instance, a group may be acquainting themselves with the way

[51] Leon L. Winslow, "Current Practices in School Art," *Fortieth Yearbook* of N.S.S.E., *op. cit.*, p. 474.

the Chinese children live to-day. They may make a model of a house and its furnishings. This should be done as accurately as possible. The information should be obtained from reliable sources and reproduced faithfully. Of course, the teacher must realize that the maturity of the children and the value of the resulting learning are the factors which need to be considered in determining to what extent detail will be considered. Dolls may be dressed in costume, and this, too, must be right.

However, certain children may wish to paint their impression of the Chinese boy at play. Providing the basic facts in the picture are correct, they may be really creative in expressing their own ideas. In studying the art of China, children should be encouraged to create in the spirit and with the general principles of Chinese art rather than actually copy it. Pupils may learn a valuable lesson here in honesty of thought, which many never learn: that they must recognize the difference between fact and their interpretation of fact.

The learning process here is the same as elsewhere. Children desire to make something in connection with a larger problem. They proceed, and as they recognize their needs, techniques are supplied. The more of the initiating and planning the child does himself, the greater is the growth. The more varied the child's experience, the richer becomes his background.

Creating. How can the atmosphere of the classroom be conducive to creative art work? In the first place, the children's experience must be rich. They must have ideas and feelings they wish to express. Then, the situation must be free. Materials should be easily accessible; such as quantities of large sheets of inexpensive paper on an easel or other convenient work place; colors, crayons, tempera paints, calcimine, finger-painting outfits, all with many colors to eliminate the necessity of mixing, except perhaps for the older and more proficient child; paste, scissors, and colored paper; and plasticene and clay. There should be a time for art, but there should also be freedom to take advantage of inspirations when they occur.

There should never be one picture or object which each of the children is supposed to duplicate. *In fact, children should not be allowed to copy.* Those who have no special problem in mind occasionally may all be working for a certain effect, or to express their conception of an incident or character. The doctrine of leaving the child with his materials completely alone and free is of only slightly more value than prescribing all he does. He needs the freedom, but he also needs stimulation and guidance. As the child feels the need of techniques, the teacher should help him work them out. However, the child does not always recognize his need. He may lose interest because he cannot produce results satisfactory to himself. The teacher should be aware of such situations.

An excellent account of a creative art experience and how the tech-

niques were supplied is told by Ames.[52] Briefly it may be summarized as follows: A child uses explosive red and calls it fire. As he goes on it becomes increasingly important to the young artist to show what is burning and if any one is near to see it. He wants to draw people, but he is looking down at the fire from the top of a tall building and the people would be fore-shortened. His attempts to draw them only result in failure. He forgets his fire in his inadequacy in drawing people. If time is taken here to teach the technique of fore-shortening he may not go back to the same vivid impulse. So instead the teacher holds a pencil upright on the floor near his feet and asks him what it looks like, could he draw it. After a moment he gets the idea and is back hard at work and confident. If a suggestion can thus come through his own experience the teacher can help him keep his painting as a whole and completely his own expression. This is a part of the process that goes through all creative work and is the point where a teacher or friend may interrupt fatally. By leading the child, so to speak, back to the scene of the fire and away from the thought that he is inadequate, half the battle is won. The figures "belong" because they are done out of the same mood as the rest of the painting. The next day the class could be given the problem of making figures as large as the whole paper with action taken from life around them.

In giving guidance, the teacher must never herself touch a child's work. She must never condemn. Instead she might ask how he thinks he could improve this or that. If he has no ideas, she may suggest possibilities. He may accept them, or they may suggest other solutions to him.

Perhaps most important of all the factors in developing creative work is the teacher herself. She, as an individual, should preferably have had experience in creative art. She should have had the feeling of expressing her own ideas without imposed restrictions, of knowing for herself that she has put into life and form and color, the thought or feeling she had in mind.

It is even more important that the teacher have so sure an appreciation that she will recognize all true art values in a child's work. Lack of appreciation or a discrediting of some particularly good thing of a child's may do untold harm. It should not even need to be mentioned that no one's work should be laughed at or derided.

No teacher can afford to make living through the arts difficult for anyone. Actually, artistic creative participation in the arts is natural and, under intelligent teaching, it is easy. Teachers who make art activities difficult disqualify themselves. They are lacking in understanding and ability to teach through the arts.[53]

[52] Polly Ames, "Children and the Teaching of Painting," *Progressive Education*, Vol. 16, December, 1939, p. 535.

[53] T. Earl Tilley, "The Reconstruction of Arts in Education," *Teachers College Record*, Vol. 49, April, 1948, pp. 466-467.

There is much of value written [54] in which teachers should read widely to acquire a point of view and many helpful suggestions in this teaching of creative art. They particularly need help of this sort, if they have not as yet attempted or successfully achieved such work in their classrooms.

Setting standards. Until recently the standards were set by grades. Each child was expected to have the same experience and was marked as to whether or not he achieved the standard set for that grade. In modern practice there is no such set standard. The aim is to help each child develop his perception and his ability to express it in line, form, or color. The standards by which this is judged must be children's standards and not adults'.

Unfortunately, adults have for many years expected mature performance and techniques from children. Such imposition of adult standards has resulted in inhibited and distasteful responses to art . . . early enthusiasms for manipulating art materials, joy in color, and uniqueness of expression fade into drabness, timidity, and dependence as children grow with their school experiences. . . .

This change has been generally accepted as physiological and inevitable; the child's increasing awareness of natural phenomena and his growing analytical powers have been allowed to stand in the way of his growth rather than being directed into expressive art channels. But need this be? May not this condition be due to weakness in teaching? May it not be caused by unfortunate emphasis upon literal, realistic interpretations? It may be that we, as teachers, have not helped the child fairly and honestly to estimate the worth of his own endeavors; that we have made *our* dissatisfactions his and in this way have instilled in him a superficial, self-conscious attitude toward himself. Seeing more art work of other children would help pupils to find new interest and greater confidence in their own art activities.[55]

Mutual evaluation raises the caliber of the work. This should not degenerate into a fault-finding contest. There should be an unwritten law that every comment should contain some positive and constructive suggestion.

It would be just as inappropriate to assign any medium to a particular grade level as it would be to assign an art principle or art element to a particular level. The time for teaching the use of a particular art medium is obviously when a problem arises that calls for its use. The art possibilities of pencil, crayon, charcoal, paint, clay, plaster of Paris, linoleum, wood, textiles, plastics, all are to be considered when occasion calls for their use in art expression and appreciation.

. . . The art teacher should not be dependent on art interests that children already have, but should often stimulate children to acquire new interests that without art instruction they might never develop at all. Of course, interests should not be introduced that are too mature for the child to comprehend.[56]

[54] Some of the more valuable references given in the bibliography at the end of the chapter are *Creative Expression,* pp. 13-66, various articles in the recent yearbooks, also *Art Education Today.*

[55] Edith L. Mitchell and Sallie B. Tannahill, "Art in the Elementary School," *Fortieth Yearbook* of the N.S.S.E., *op. cit.*, pp. 501-502.

[56] *Ibid.*, p. 474.

The California schools have set up some specific objectives in art. They are not allocated to certain grades, but should have been largely covered by the end of the sixth grade. They cover clothing, immediate surroundings, general environment, and fundamentals of art.[57] These should be considered each year to the extent that children understand, want, and need them.

In considering clothing, they discuss the effect of cleanliness and neatness on appearance, appreciation of lovely color, of simplicity and appropriateness, suitability of hair dressing, and appreciation of validity of applying design principles and art elements to personal appearance, stressing among other points the unity of effect of the total combination in color, type, and so on.

Under immediate surroundings they consider pride in appearance of their room, applying art principles to room arrangement, in fine color, and in general appropriateness.

Discussion of the general environment includes architecture, landscaping, and city planning. In addition there is the possibility of planning and beautifying their own school yard. This can usually be done with the coöperation of the school authorities.

In the fundamentals of art they consider the three following points: appreciation of beauty in line or space breaking, including emphasis, rhythm of movement, simplicity, and variety; appreciation of beauty in color, including among others the ability to make pleasing color combinations and produce desired effects; and the appreciation of beauty in dark and light pattern. There is also a list[58] of the skills that may be developed as they are needed, for painting, modeling, drawing, lettering, and construction.

Still more important, there are certain habits and attitudes which should be emphasized all through the grades. They include:[59]

1. Pride in original, honest work and finished products
2. Willingness and eagerness to experiment
3. Willingness and patience to repeat worth-while experiments until fine results are secured
4. Confidence in individual ability and in the value of individual ideas
5. Interest in, and tolerance, sympathy, and respect for, the work of other people, countries, and civilizations
6. Respect for materials and fine craftsmanship
7. Application of art principles to everything that is made; and realization that anything that is not beautifully made, well made, and suited to its use, is a waste of material and time, and a source of constant irritation to those who must see and use it
8. Independence in working and in making his personal evaluation of his own work and the work of others

[57] *Teachers' Guide to Child Development in the Intermediate Grades, op. cit.,* pp. 486-489.

[58] *Ibid.,* pp. 489-491.

[59] *Ibid.,* pp. 484-485.

The belief in the importance of the child's development as an individual and growing personality requires the acceptance of standards such as these: *eagerness* to participate in art activity; *joy* that comes from individual satisfaction in art experiences; *confidence* that results from a self-revelation of powers of production; *sincerity* and *individuality*—expression consistent with personality and life; *courage* and *independence* in the selection and use of medium and subject matter; *discrimination*—informed and sensitized ability to determine art quality; *sympathy* and *tolerance*—an attitude toward art that aids, rather than checks, interest and appreciation; *realization* of the scope of art; and *respect* for its part in all of living.

If these standards for evaluating art education are accepted as adequate and if evidences of them are found in the productions, appreciations, and personalities of children, then surely art may be welcomed as an immeasurable force in education.[60]

Creative art and personality. The child's freedom to express himself in the creative arts has been recognized as a valuable factor in the adjustment of certain children. Perhaps the child was not making a satisfactory adjustment in his relations with others. He was probably having little success in his school work. For the first time he is given an opportunity for free expression in painting or in modeling. If he finds enjoyment and achieves a certain amount of success he may resolve some of his personality difficulties, renew his interest in other school work, and with his regained self-confidence continue to develop. A child who has not succeeded very well at anything in life desperately needs something in which he can gain recognition and satisfaction. As is often the case with any success, it colors all the rest of his life. However, there seem to be other factors involved in the integrating effect of creative art.

Zachry discusses the inter-relationship of personality and the arts: [61]

> The artist asks of the individual that he make an order out of chaos, that he take what he perceives in imagination and convey relationships of ordered form and content within some given medium. The mental hygienist asks of the individual that he make a related order out of the disintegrated experiences of which his life is composed, and through his action or behavior find the fulfillment of his growing experience. Both have the same struggle for coherence in an incoherent society. Both seek the same fulfillment.

She then offers some suggestions for the functioning of mental hygiene in the arts. "The concept of art must be broadened to include all individuals and all media of expression." Every child has a right to his experience in handling whatever art medium he has an interest in. Their success is of less importance than their experience in creative expression.

"An individual's needs as well as his potentialities determine the use of

[60] Mitchell and Tannahill, *op. cit.*, p. 502.

[61] Caroline B. Zachry, "The Rôle of Mental Hygiene in the Arts," *Art Education Today* (New York, Teachers College, Columbia University, 1937), p. 31.

art and what part it plays in his life." The personal needs may be many and diverse which the child brings to art. It should be his privilege and the teacher's responsibility that he gets the particular satisfaction from art which will fulfill his need.

"A work of art produced in a classroom should be evaluated in the light of the individual who produced it as well as in terms of its art quality." There must be considered, along with the technical skill exhibited, the expression of the child's own insight, originality, and wealth of ideas. "Training in techniques and skills should be introduced when the need of the student, not the success of his art product, demands it."

These factors for the use of mental hygiene in art when examined carefully are themselves major principles in all creative art. If, then, there are real opportunities in the classroom for free self-expression, the teacher has a powerful tool for integrating personality.

One of the greatest values here as in any creative activity is that there is no "right" way to do it. For once, the child may draw or paint or model or sketch as he wishes and no one can say, "no, that is not the way." It is his opportunity to be accepted as he is and his work as it is. There must never be condemnation or non-acceptance or destructive criticism. There can only be guidance to help the child do better what he himself wants to do. This, of course, should prevail through all teaching but at least this is one place where it *must* prevail.

IV. GUIDING CREATIVE EXPERIENCES IN LITERATURE

Appreciation. Appreciation of literature is fostered by reading good literature under conditions such that there is the greatest amount of enjoyment in it for the child. What are these conditions? The material must be well within his understanding both as to mechanics and meaning. It must suit his interests and tastes. He must have no unpleasant associations with it. That is, there should be no quizzing concerning it, no chance to fail in an answer, no condemnation of his choice of material. It should be enriched by the enjoyment of others.

This last point is the only one liable to much misunderstanding. In an effort to achieve something of this sort, many teachers have analyzed and discussed stories and poems until the life is entirely gone. This is obviously not what is meant. Instead, one child may find a paragraph, a page, a chapter, or a poem which he particularly enjoys. He may wish to read it to the group so that they may all enjoy it together. Usually little comment is necessary. Or, the teacher may read or tell of something she especially liked. Reading or listening to literature, instead of about it, seems to be the key-note. There may need to be only enough comment so that the children are aware of the point that is being made.

Actually there is no way to *teach* appreciation. It has been said that the most a teacher can do is to attempt to share with her listeners what

the adventure of reading poetry means to her. Appreciation must be caught or felt, for it is contagious.[62] The same, of course, is true of appreciation of prose.

In his reading of literature there are various aspects with which the child should come in contact and which he should learn to enjoy. They are: [63]

Enjoying action and suspense
Enjoying humor of various kinds
Enjoying the world of the senses
Exploring the social world
Enjoying fantasy and whimsy

There are many valuable lists of books available for children of various ages in which these various types of writing may be found.[64]

Verse-speaking choirs. Choral speaking goes back to biblical times and to the time of the Greek drama. Most primitive groups used group chants in their religious activities. The modern movement for choral speaking began in 1922 at the Glasgow Musical Festival. There were speaking choruses from Greek drama under Miss Marjorie Gullan. Miss Gullan has been the one person more responsible for the spread of the movement than anyone else. The schools of the Middle West were doing something with it in 1923, and a few years later there were evidences of it on the West Coast. However, little was done until Miss Gullan herself came to the United States in 1933.

The question is often asked, what is choral speaking? Gertrude Enfield gives the definition which she prefers.[65]

> A verse-speaking choir is a group of children (or grown-ups) speaking rhythmic prose or dramatic or lyric poetry in unison, or antiphonal rendering—speaking with force or charm or delicate precision of diction, with beautiful or convincing modulation of tone, in interpreting the words and messages of the poets.

Values. The values touch many fields. Discussions of the verse-speaking choir may be found under music where the emphasis is placed on the rhythm, under drama where the emphasis is placed on the interpretation, under speech where the emphasis is placed on the development of correct diction and other speech techniques and arts, and under literature where the emphasis is on the appreciation of poetry. There should be no argu-

[62] Clara Wilson and Clara Evans, "Enjoying Poetry with Children," *Elementary English*, Vol. 25, January, 1948, pp. 54-57.

[63] W. Wilbur Hatfield, chairman, National Council of the Teachers of English, *An Experience Curriculum in English*, English Monograph No. 4 (New York, Appleton-Century-Crofts, Inc., 1935), Ch. IV.

[64] Sources of bibliographies and suggestions for interesting children in reading are discussed in Chapter 10.

[65] Gertrude Enfield, "The Verse-Speaking Choir," *Fourteenth Yearbook* of the Department of Elementary School Principals (Washington, D. C., National Education Association, 1935), p. 367.

ment, for there is or may be undoubted values in all these fields. Another major value is that of socialization. As Gertrude Enfield says,[66]

> There is a subtle refining influence in the material of poetry, as well as the fun and joy of the jingles, ballads, and strongly marked rhythms. In this work, the children learn coöperation to a surprising degree. They achieve an understanding, a tolerance, and an appreciation of the poet and of each other. They learn to think together and feel together, and to work patiently together until all have succeeded.

How to develop a verse-speaking choir. When children find a poem they like, they will enjoy working out a choral speaking of it. It has been suggested that where the rhythm is marked, children clap in time to the teacher's reading to get the "feel" of it.[67] They must truly understand the meaning of the poem. Then particular parts may be assigned to the light voices, others to those with heavier voices and the whole blended in. It was found that the poems the children particularly liked were ballads, jingles, ditties, limericks, little poems that tell a story, create a mood, paint a picture, express an idea, or simply convey fanciful nonsense. The wider variety of types of poetry which children hear and enjoy the richer will be their experience. There can be "good" and "bad" poetry in all these types, but if it works out well for choral reading and satisfies the group, that in itself is a fairly good criterion.

Harvey[68] uses choral speaking for voice training. Using a poem they know and enjoy, they experiment by saying it loudly and softly, with a high pitch and a low pitch. They vary the accent and inflection to get the expression they want. They watch their enunciation and pronunciation, all for the purpose of interpretation, of putting added meaning into the poem.

Berry[69] suggests that there are three types of choral speaking suitable to the lower grades. The first is the refrain where one child speaks certain lines, then the rest of the group give the next. The second is the two part type, as when the boys have certain lines and the girls others or the high voices and the low voices. The third is the line-a-child type where each say a line and perhaps the final line is said by all.

The techniques of developing a choir of this sort are fairly new and unstandardized. No one should attempt it without reading several discussions concerning it.[70] As in all arts it is not so much what is done, but the way and the spirit in which it is done. It is more than a reading of poetry in concert. Several sources[71] give lists of appropriate materials.

[66] *Ibid.*, p. 368.

[67] Wilson and Evans, *op. cit.*

[68] Mary Lee Harvey, "Verse Speaking for Speech Improvement," *Elementary English Review*, Vol. 21, November, 1944, pp. 270-271.

[69] Katherine R. Berry, "Rhythms in the School Program," *Elementary English*, Vol. 25, April, 1948, pp. 221-227.

[70] See bibliography, particularly Mary Haldeman Armstrong's article.

[71] See bibliography, especially F. E. Pidge.

There are some cautions, however, which it will be well to note.[72]

1. Be sure there is no labored sing-song with every beat given equal stress.
2. Be sure the enunciation is clear. Avoid slurred speech and inaccurate rhythm.
3. Guard against imposition of the teacher's interpretation.
4. Do not work so long upon a poem that spontaneity is gone and the interpretation becomes mechanical.
5. Be sure to choose for unison work poems with fine rhythms and melodies and simple theme.
6. Be sure to assign lines appropriate to the quality and natural pitch of the voices.
7. Group the children according to the quality of voices.
8. All these poems should be at times spoken individually because choral speaking is a preparation for individual speech.

Composition. In one sense all writing that is not dictated or copied is creative. It is original, a new combination of words for that child. Many teachers feel that this is the only kind of creative writing that can be expected in the elementary school. One teacher discussing creative writing in the middle grades gives these as examples: [73]

> ... a guide book ... for people visiting the museum ... a history-geography guide book, giving points of interest to travelers to-day ... called for real creative writing ... posters and announcements of school events, of exhibits, of plays, invitations to parents and others to visit the school, and newspaper reports of such events, all call for purposeful writing. ...

Creative writing and purposeful writing have been confused. The examples just given are excellent ones for purposeful writing, but can hardly be called creative except in the broadest sense.

These illustrations, however, are a key-note to this problem of written English. They are purposeful; they grow out of the child's work; they are a unified part of a larger plan. He can and will attack such problems with interest and enthusiasm. Here, too, is the place for learning the techniques. Since there is to be a real use for his finished product (instead of its ending up in the teacher's drawer or waste-basket), he sees a reason for writing it as grammatically, as expressively, as adequately as possible.

Every unit of work offers excellent opportunities: letters of invitation, of request, of appreciation, of regret; writing up material they have located and summarized in language simple enough so that younger children may read and learn from it; or making an illustrated booklet of their experience and findings so that others at their own level or above may read and profit.

It is through avenues such as these that the techniques of usage, spell-

[72] State Department of Public Instruction, "Choral Verse-Speaking," Circular No. 57 (Des Moines, Iowa), p. 2.

[73] Mildred English, "Creative Writing in the Middle Grades," *Education*, Vol. 53, November, 1932, p. 136.

ing, and writing discussed in Chapter 10 may be made meaningful and operative.

Creative writing. Creative work in graphic arts and music is relatively new. It is still in the experimental stage. Artists and educators have not yet worked together to the point where they understand each other. Each is still to a certain extent talking in his own language, and often he is as little understood as if he were speaking a foreign tongue. Creative writing, however, has been used and experimented with until to-day there are several rather clear interpretations. Misunderstanding still exists, and many are hesitant or fearful of making the attempt. They find it difficult to be still and listen instead of "teach" and "require."

It is hard for some to learn that there is no "right" and "wrong" in creative writing. The essential element is that the child is saying something he feels the need and the urge to say, something that is the result of his own experience, his own thinking and feeling. This is the basis of the main therapeutic value; that in creative writing he isn't required to meet someone else's standards and requirements. He may for this short time really feel himself free. Even if the results would be judged as "very bad" by the technicians, if it is the result of the child's own sincere effort and expression, it is *good*. After this much is thoroughly established it is a relatively simple matter for the child to raise his own technical standard.

Difficulties. Creative writing is one of the most natural means of self-expression. Since babyhood the child has practised putting his feelings, ideas, and thoughts into words. There are three major limitations. First is lack of experience in original thought. This may come from a meager and barren environment, or it may be the result of a smothering in a situation where the child is so overprotected or controlled that he has never been allowed to think for himself and so of course does not know how.

The second difficulty is a limited oral expression. The way a child talks is largely the result of his own experience and the speech of those around him. Home background is a major influence, but much can be done to enrich the child's speaking in the kindergarten and primary grades.

The third inhibiting factor is the mechanical difficulty in putting words on paper. This is obviated in the lower grades by the teacher writing as the child talks. Where penmanship is a real difficulty, this procedure should be extended into the upper grades as far as seems helpful. Another solution used in a few places is for the child to compose on the typewriter. The time may never come when all pupils have access to one, but wherever possible teachers should take advantage of it.

What is creative writing? Hughes Mearns says,[74] "Literature is simply

[74] Hughes Mearns, "Childhood's Own Literature," *Creative Expression* (Milwaukee, Wis., E. M. Hale and Co., Republished 1939), p. 113.

unique self-expression; yet at the start we strive for conventional self-suppression and laugh away, or scold away, that individual utterance without which literature is not." Lawrence H. Conrad writes a chapter to define creative writing. The gist of it is: [75]

> Writing is not to be called *creative* because it indulges in flights of fancy, nor because it seeks to attain a "poetic" or a "literary" flavor of language. In what we here distinguish as creative writing, the source of the material is within the student's real or imaginative experience, and the writing is "free" in the sense that the student has chosen his own material and is seeking his own most adequate form of expression. Creative writing is not made simply out of words, and no amount of training in language manipulation will ever quite produce it. It is made out of the movement, the ebb and flow, of everything that is significant and arresting in the mind and the life of the person who produces it.

To get the "feel" of what creative writing may be, one should read all of Hughes Mearns' and Conrad's books (even though they are written primarily of secondary-school pupils), as well as much literature appearing in the periodicals that gives experiences and examples of creative writing.

Creative writing is essentially original, the child's own. He must not consciously imitate either in thought or style. If there are to be changes made during the process, they must be made by the child as he sees the need through skilful questioning. The real importance of the writing is in the organizing and putting in words the ideas and thoughts of the child. Only secondary is the value of communicating these ideas to others.

How to encourage creative writing? First, the situation must permit it. There must be a time when he has opportunity to express his thoughts orally or in writing. There must also be opportunity at any time when there is an especially strong urge to write. These are both more apt to be present under the newer program of the modern schools. There must also be means of expression. If it is too laborious a task for the child to write what he wants to say, the teacher should arrange opportunity for him to "talk" his thoughts and take them down, either openly or inconspicuously, depending on his reactions.

The situation must be such as to give him a feeling of freedom and security. His spontaneous expressions must have been accepted with respect and sincere interest. If any of his ideas or thoughts have been received with ridicule, or even perfunctory attention in a patronizing air, he is apt to close off the expression of his personal feelings and talk only in the general terms which gain approval.

There must be no interruptions of creative flow of words to correct grammar or pronunciation or sentence structure. After the thoughts are down on paper children can be led to correct any glaring and important

[75] Lawrence H. Conrad, *Teaching Creative Writing*, a publication of the Progressive Education Association (New York, Appleton-Century-Crofts, Inc., 1937), p. 17.

errors. Otherwise, the technical skill should be developed in the type of composition first discussed.

The teacher must have the confidence of her children, if they are going to express themselves creatively for her. She must show understanding of them and their problems. She must give evidence of appreciation of true expression and a happily expressed thought. She must be a friend and guide rather than a "school-ma'am."

The pupils need experience as the basis for their thoughts. The wider this experience and the more varied, the greater will be the possibilities of expression. Included in this experience should be that of hearing or reading good stories and poems. The work done in the appreciation of literature should make its contributions to creative writing. Just so, experience with creative writing is of great value for the appreciation of literature.

Suggestions. There are many ways to start the actual writing.[76] If children have been given opportunity, have been used to expressing their feelings about things orally, it is simple to get them to write them down as soon as the mechanics of writing are sufficiently mastered not to form a handicap.

Mutual discussion of the things they have written may be tactfully handled with emphasis on the positive and constructive criticism. In cases where improvement is needed there should be a questioning rather than a telling of the author. Mainly, particularly fine bits should be appreciated. If the teacher prefers, she may confine all group discussion to reading better things or better portions. This phase is important for it shows children possibilities and continually raises the standards they set for themselves.

Another means of showing possibilities is to read or show work done by other children of their grade at various times. Or, an even better method is to directly inspire writing by an appreciation of the beautiful in nature, in art, in music. After a rich appreciational experience, ask children if they would not like to write down what they were thinking and feeling. It need have nothing to do directly with the subject of their appreciation, but is, rather, their own personal reaction to it.

Children should never be forced to write creatively. That, in itself, is a contradiction in terms, because creative effort is that which the child puts forth to interpret first to himself and then to others the things he feels and wants to say. If there is real enthusiasm in the group for the things they are doing, it will be contagious. If there are some who seem never to have anything to write, a little skilful questioning about things they think about may help them to formulate an idea. Once they get to talking freely, they are ready to write.

Form should be subordinate to content. It will gradually develop, as

[76] One way is described by Mearns in *Creative Expression*, pp. 147-151.

skill is gained in other types of writing and through hearing the work of other children and comments as to the particularly excellent parts.

Poetry. Poetry may be produced with only slightly different procedure from prose. (The previous discussion refers to both.) Many children, when thinking creatively, think as naturally in poetry as in prose. If they have not had unfortunate experiences either with hearing, reading, or writing poetry, it will seem nearly as natural as prose. Much good poetry should be read, some with rhyme and some without. A child may start to write on his own initiative, or the teacher may suggest that those who wish may write their thoughts in poetry. A simple beginning may be stimulated by appreciation and interest until it spreads enthusiasm to the whole group. Some school systems are developing material to help their teachers with procedures.[77]

One teacher tried out five different methods of approaching creative writing which she found suggested in the literature. The first was just a deposit place for the children's productions, from which she would read the best to the class. She did not have much success with this. The second was a vehicle for teaching grammar (!) which she discarded immediately as totally out of line with the basic purposes. The third method was group writing. She tried reading much poetry as a stimulant but it "came back" in the same words and phrases. Then she tried asking, for instance, in what pretty way they could talk about the rain. From this she got some very nice things, but not much. Her fourth method was for the teacher to create, too. The teacher would start something and let the child finish it. This was all together too restrictive and accomplished nothing. Her fifth and final try was successful. In a quiet atmosphere she sat in a low chair and let the children come one at a time and dictate to her. This was after an enriching experience which all the children had shared. From her group she got fifty-six poems. One girl in telling her poem, broke off to say, "My poem doesn't 'bump'!" This led to a discussion of rhythm, and in getting their poems to "bump," the meter of many of the children's poems showed improvement. The children were started and as the author said, "You can't stop the steam roller of children's desire to write." [78]

One teacher gives a procedure which is an example of what *not* to do in initiating poetry writing. She says: [79]

> I put one of the stanzas of a Robert Louis Stevenson poem on the board, and, with colored chalk, show the children the difference between strong and weak syllables. I then have the children suggest provocative first lines for poems which have the same rhythmic pattern. After ten or a dozen acceptable suggestions

[77] Creative Writing Committee, *Creative Writing in the Elementary Grades* (Madison, Wisconsin, Madison Public Schools, 1944), 20 pp., mimeographed.

[78] Elnora L. Kidd, "A Digest of Approaches to Creative Writing with Primary Children," *Elementary English*, Vol. 25, January, 1948, pp. 48-53.

[79] Lucia Back, "Creative Writing, the Problem in Elementary School," *Education*, Vol. 59, November, 1938, p. 132.

have been made, we work out together a stanza using the same rhythmic pattern as the original. By that time the children are for the most part anxious to try one for themselves.... If necessary, the teacher should practically write the poetry for the child using as much as possible of his own words.... I have found that in practice the child learns much more quickly by watching the teacher manipulate his work.

In the first place, no work should directly be imitative, either of thought or form or meter. Thoughts should not be fitted to a meter, but a suitable meter chosen to express the thoughts. As in art, the teacher must never, herself, touch a child's work. She must get him to see the need, and to suggest the remedy. If further help is necessary, she may illustrate with a variety of other material until the child understands, but any creative work must be the child's alone. The learning which the children were doing so quickly was to imitate style and procedure, not to express their own thoughts and feelings in their own way. She was imposing her interpretations on the children. The development of creative ability is a growing process and cannot be forced or prescribed.

Creative writing and personality. Creative writing ranks high as a factor in resolving personality difficulties. Creative writing, as has been said before, is essentially the interpretation in words of thoughts and feelings in the child's mind. Usually they are only half-formed ideas, a general, vague impression. When a child is puzzled or bothered by a problem, his thoughts and feelings are largely centered directly or indirectly about it. As he puts his half-formed thoughts into words, it helps him to understand his problem better.

There are other ways in which creative writing helps personal integration. It may be the one way the child has of adequately expressing himself to his own satisfaction. It may be one of the few means of gaining success that the child has. This function of developing the personality of the child is by far the most important. Next in importance is to give the child a means and a facility in expressing his thoughts, "The major accomplishment is the organization within. The actual manuscript that is produced is merely a token of that triumph." [80]

Evaluating creative writing. The evaluation of creative work must be done on a very different basis from that of other work. It has been said that content was more important than form. The teacher must try to understand what the child was trying to express. The extent to which he succeeded in expressing it is a measure of the success of his writing.

Conrad [81] suggests four questions which may be used to assist in evaluating prose, and another four in reference to poetry. They are mainly for use on the high-school level, but have much value anywhere. These are for prose:

[80] Conrad, *op. cit.*, p. 11.

[81] For discussion of these points and actual evaluation of examples of children's work, see *Ibid.*, Chs. VII and VIII.

1. Is this student really involved in this material?
2. Is the student doing anything in this material?
3. Is this a good piece of writing?
4. Does this composition do what it undertakes to do?

His questions for poetry are:

1. Is there something authentic in it?
2. Is there something poetic in it?
3. Does it make progress toward achieving form?
4. Does it satisfy the expectation which it arouses?

V. GUIDING CREATIVE EXPERIENCES IN DRAMATIC PLAY

The key-note of this section lies in the fact that it is about play and not plays. The usual procedure, heretofore, has been the putting on of a play for a program. It was teacher initiated, selected, taught, directed, and evaluated. The result was a stilted, self-conscious performance with little meaning for the child. In some cases it was a really terrifying experience; in others, an opportunity to show off.

What it is. Dramatic play as understood in the modern school is something quite different. The emphasis is on the process of play, not on the finished result. It is not another subject added to the curriculum. Rather, it is another way of approach to the curriculum. There are no materials of drama that are worth while for children which may not also be materials already in the curriculum. It does furnish another and very vital approach.

Dramatic play is the living (so far as circumstances permit) of the child's interpretation of someone else's experience. When little children play, they feel that they really are that person or animal; and experience, through their imagination, the very situations he is supposed to be experiencing. The older child recognizes that he is pretending to be someone else. However, when play is real, he still has a very personal understanding of the experience he is interpreting.

Dramatic play is for every child. Some children naturally play imaginatively more than others. It is to those who are timid and self-conscious or stolid and unimaginative that the school particularly has a responsibility. The retiring child must be given confidence and security so that he may feel free to express his thought and feelings. The occasional child who has had his own imagining discouraged and little basis for developing more needs opportunity and encouragement. Play is the natural reaction of all children. It is not something they have to be taught. Under normal conditions, it is as natural a reaction as anything they do or say.

Play of this type is particularly neglected in the middle grades. Teachers are apt to feel that since it is not work it is a waste of time. It presents difficulties of organization and handling in the small and crowded rooms which many have. As plays have been "put on" teachers

found them very strenuous, for they themselves had to carry most of the load. Whenever a play was given, the most talented pupils were selected for the parts, so that they would make a good showing. However, all the pupils of this age need play as much as do the primary pupils. Although it takes a somewhat different form, it can be just as vital and important as at the younger level.

Not a sugar-coating. Before the value of the play itself was recognized, some teachers justified it by using it as a device for learning certain material. Health plays and safety plays, plays of the lives of famous people, and plays about number combinations came into being. It was looked on as a means of brightening up dull subject-matter. If the children were bored with the material, the teacher thought if she could find a play about it to give they would regain their interest.

Plays on any of these topics might be very worth while and extremely valuable. *But*—they must come as a result of the pupil's interest in them and not as a stimulator of interest.

Sources of materials. The materials for play may be anything in the curriculum in which the children are sufficiently interested to want to play it. Any incident or topic may call forth spontaneous play for a few minutes. This type is more likely to occur in the primary levels, but not necessarily so.

Stories have always been the main source of the plays. As the children become very familiar with a story, they often want to experience it themselves in play. In this free interpretation they live the characters' lives and occasionally improvise incidents consistent with those in the story.

The units of work often centered around a social-studies problem have been excellent sources of play. As the children learn about the people around them and what they do, they want to play that they are these people, too. As they learn about the people far away, again they identify themselves with them through play.

How play develops at various levels. In the kindergarten and to considerable extent in the first and second grades, the child feels he actually is what he plays he is. He does not say, "I'm playing I'm a mouse," but rather, "I'm a mouse." Such spontaneous play may spring naturally from any story, song, picture, or music. It is usually short in duration, but interprets the child's understanding of what the mouse is or does.

By the first grade he is ready for more sustained play. If the class has a unit on the home, they "play house." The "mother," "father," "baby," and "visitor" all assume the duties, responsibilities, and characteristics of these people as the child understands them. Excursions are a stimulus for playing over again the things they see.

By the second or third grade the child says he is pretending to be some one else. He carries the pattern of play over from day to day better. As the things he learns about become more complex, so does his play. As he

grows older, he may lose some of his spontaneity and become self-conscious unless care is taken to guard against it.

By fourth grade, the planning has developed enough so that it becomes "a play." This may be written by one child or a group of children. It may simply be acted out spontaneously and repeated and changed and added to until it satisfies the group. That may be the end of it or it may then be written down to be preserved for another group to use for study.

Though costumes have been used to some extent before this, now they are more in demand. As the child becomes more interested in the factual and in detail, he also demands greater accuracy and completeness in the stage properties and costumes. The little child could stick a feather in his hair and feel himself a real Indian. The older child either wants to use his imagination altogether, or requires a more adequate setting. The development in the upper three grades is more a change of degree rather than of kind.

Values of dramatic play. The values of creative dramatics are probably greater than those of any other creative activity. Children have more opportunities to more directly express their feelings through the various characters they play. A little boy one day came to his creative dramatics leader and begged to be allowed to be the North Wind. The North Wind was a bad wind who huffed and puffed and blew and caused a great deal of trouble in this particular story. After the play was over the boy thanked the leader for letting him play the North Wind and added, "I thought I was going to bust." She never found out what had caused his inner turmoil but clearly it found its release in the play.

The main value of dramatic play is the opportunity for developing and expressing the emotions. It is the most natural situation in which the child can legitimately feel and express any emotion. As he feels himself to be first this one and then that, he has experience with a wide variety of feelings. They are limited, of course, to his understanding of them, but through repeated expression and observation his understanding grows.

Dramatic play serves as a basis for the child's organizing his experiences. As he interprets a person in a certain situation, he unifies all he knows about that situation and the way the person would react to it, so that he may adequately interpret it. Organization and interpretation in light of his understanding furnish a basis for corrections of his ideas where needed and also a vital motivating factor for further learning, so that he may carry this character farther and into other situations. Play furnishes an excellent learning situation, for it brings information into a most meaningful situation and relates it in a unified whole. Pupils are imaginatively living through the various experiences, which is only second in value to actually living them.

Attitudes have been found to be best developed indirectly and through pertinent situations. When actual experiences are impossible or imprac-

tical, the experiences of dramatic play offer an excellent substitute. Where it can be pupil initiated and carried through, play involving health and safety attitudes and habits, and various of the social attitudes as well as morals and manners, is one of the school's best methods of attack on these problems.

Regardless of the subject-matter involved, there are bound to be values from this type of activity. Particularly when the children work out the play spontaneously, they have excellent practice in expressing themselves. They start with a clear idea of what the person is like and then talk and act as they think he might in that situation. It calls for creative thinking of an excellent type. It centers the child's attention on what he is going to say rather than how he is going to say it. Being occupied thus, he loses his own identity much more easily and assumes that of the character he portrays. With this goes much of his self-consciousness. He expresses himself with his body as well as his words. With this experience he gains confidence which leads to further success.

Since most of the values of dramatic play come from the child's participating in it, there is little need for audience other than his own class. It may be that occasionally the children will feel that they have something so interesting that they must share it. Then they may repeat it without further changes for another class, perhaps. Occasional appearances before a larger group in a situation where they have considerable self-confidence are good. However, the constant practice of preparing the play for someone else to see changes the point of view of the children. Other values come in. They look for outside commendation, and instead of doing the thing the way they themselves feel it should be done, they are apt to think of how those other people will want them to do it. They lose a sort of integrity of purpose that they could otherwise maintain.

What form shall dramatic play take? The usual form is simply informal play, particularly in the primary grades. In the upper grades it may take on more of the formal aspects of a play with more costumes, property, and scenery and the dialogue written out. There are, however, variations of the usual form of the play.

Pantomime. Pantomime is interpretation through bodily action only. It is particularly valuable for children who are timid, as it relieves them of the necessity of speaking before the group until they have gained some confidence. It is also excellent in developing bodily expression. Shadow acting is another form of this, in which the children's shadows are thrown on a screen by a strong light. This has the disadvantage of making a quite unnatural situation having many unnecessary restrictions with very slight added values. There may be a story-telling or description of the play by one child as it is being given.

Marionettes and puppets. Somewhere from the second grade to the fourth, children are likely to develop an interest in puppetry. By this time the child is only pretending to be someone and so can interpret his

ideas through puppets as well as through bodily activity. It may be that this type of activity will be more acceptable to the child at the time when he is developing a personal self-consciousness. He may be able to lose his own identity in another's more easily in this way.

The simplest form of puppets is the stick puppets. These are merely cut-out figures attached to the end of a long stick. They may be used to dramatize little stories where each child manipulates one figure. They can be used with success by the younger children. For instance, one kindergarten put on The Three Billy Goats Gruff and planned all their necessary materials and scenery quite simply.[82]

Fist puppets are quite simple to operate and so will probably be used next. A head attached to a gown with sleeves is placed on the hand and operated with thumb and two fingers. Thus the head and arms and whole body can be moved singly or together.

Marionettes are somewhat more difficult to manage. They are jointed dolls with four to six strings attached. The strings are attached to sticks in pairs so that the doll may be made to move in any way desired. The upper grades usually get most enjoyment out of these and their construction by the children has added values.

Puppetry is an art in itself, and discussion of it often includes both marionettes and puppets. There are many excellent books that give simplified directions for making and operating them.[83]

How to develop dramatic play. Little children will naturally indulge in imaginative play if they are not forbidden or ridiculed. At all ages an essential factor is the security of knowing that what they do and say will be taken in all sincerity by the teacher and their classmates.

The teacher must be one of them if she is not to be an inhibiting influence. She must herself thoroughly believe in the value of play. Here particularly she must give assistance rather than direct or command. "One must listen and learn and... never condemn. One must have infinite tolerance and sympathy if one is to understand people." [84]

The desire, if not the suggestion, must come from the children. They must have something which they have a real eagerness to express. This inner feeling of desire was commented on by Ann Shumaker thus: [85]

> Directors of dramatics make quite a point of enlarging a child's sympathies and extending his understanding by such commands as "Put yourself in Little Beppo's place. How would he have felt? What would he have done?" But if the child of his own accord would never have chosen to be Little Beppo, if he felt no inner identification with the qualities which that character represents to him, his attempts can amount to no more than shallow pretense.

[82] Ethel R. Taylor, "Puppet Play in the Kindergarten," *American Childhood,* Vol. 32, June, 1947, pp. 14-15.

[83] See bibliography at end of chapter.

[84] Emily Pribble Gillies, "Crosses and Knives," *Childhood Education,* Vol. 23, April, 1947, pp. 382-387.

[85] *Creative Expression* (Eau Claire, Wisconsin, E. M. Hale and Company, 1939), p. 256.

At least until it begins to take shape, the play should be entirely the children's work. After the direction and main outline have been established, there will need to be guidance. This guidance should be suggested or drawn from the children by questions. How could this be improved? Would he be more apt to say this or that? There should be constant pupil evaluation all the way through. One of the teacher's functions is to keep this criticism impersonal and constructive.

In initiating a project of this type, it is important that the teacher take advantage of the situation. If there is high interest and enthusiasm, that is the time to start. The program must be flexible enough so that though the clock says so and so, the pupils may still have the advantage of the flush of their first enthusiasm.

The play may come as a culminating experience at the end of a unit. Or it may be carried along with the progress of the unit. It cannot be started, however, until the children have considerable knowledge and a feel for the situation as a basis of their interpretation.

The authors have had the great pleasure of watching a program of creative dramatics develop in three seventh-grade groups. The children had never had any experience of this sort and had been used to quite a traditional program. A few months later an adult group was privileged to observe one of the groups in action. The development of the children was a joy to see, especially of many of those who needed it most. From the observation and a short discussion, a plan of procedure was brought out.

First the children would suggest stories that they had read which they thought would work out well for dramatization. They chose one and had the story reviewed or perhaps read to them. They then decided which parts of the story they wanted to play, and what happenings were to be included in each part. This they called making their "scenario." They were then ready to begin "casting." A stage manager was chosen by the group. This child then picked from volunteers those who were going to play the parts needed in the first act. It did not matter much whom the manager chose, for before they finally decided on who was to have a part, everyone who wanted to would have a chance. When all characters were named for the first trial, the action was reviewed in a sentence or two. The stage manager called "On stage—Curtain," and the play began. No script, no dialogue—just each child's interpretation of what these people would have said and done under the circumstances. Then others having a chance at playing their ideas, and on and on until, by common consent, each part was assigned. There was lots of discussion about the way the parts were played but nearly all of it was directed at the "characters" and not at the children as themselves. Each child lived his character while acting and the other children accepted it as such.

Gradually the whole play took shape, but never was it twice played exactly alike. New developments kept creeping in and new interpreta-

tions were made. If a child who had a part was absent one day, the group would choose someone else and the play went on as smoothly as before. No stage was used, but stage terms were common. The benefits were beyond enumeration: the sheer joy of losing one's self in a part, the integrating experience of bringing all one's abilities and thoughts and feelings to bear on that living of a part, the experience of expressing oneself ad lib. before a group, the experience of winning the approval of the group, of being successful in portraying a character. And all the children had this experience at one time or another, for there were many characters and many plays and several jobs which carried responsibility which were not acting.

Teachers' Guide to Child Development for the Intermediate Grades[86] suggests some reasons why a teacher's first attempt at this sort of thing may fall flat or end in pandemonium. In general, children learn to do this as anything else by doing it. Each succeeding experience should be more successful than the one before. The suggested reasons for failure are:

1. The children have not enough background of information or story interest.
2. They do not feel free to go ahead.
3. They have worn out the subject because new elements have not been introduced.
4. The spirit which fosters creative thinking is lacking.
5. There has been no organization among the children and no discussion of the general trend of the play.
6. There has been no check-up following the play during consecutive days to analyze their mistakes.
7. The children have not learned the techniques of using many books to get information in regard to the necessary detail and come to their play lacking the required knowledge.

VI. GUIDING CREATIVE EXPERIENCES IN RHYTHMS AND DANCING[87]

Something has already been said about rhythms based on music and motivated by it. Besides this there is the much larger and less well-developed field of creative expression through rhythmic movement in general.

Every child should know the joy of discovering the vast number of movements of which his body is capable. This creative activity differs from all others in that the instrument is always at hand; it needs no external media. With only a modicum of skill and training, with simple everyday life the background, any child who has the desire can express anything within his experience. By means of a familiar and natural instrument—his body—this can be accomplished to his own satisfaction and in a way others can comprehend.

[86] *Op. cit.*, pp. 514-515.

[87] This section has been adapted from material by Gladys Andrews and Marion Bozenhard.

The desire for self-expression through rhythmical movement is present in every one, but it is especially strong in the child to whom large, free movements are a natural outlet for feelings. Who has not felt the urge to tap his foot, nod his head, or sway his body with the beat of a drum, the chug of a locomotive, the gallop of horses' hoofs, or the squeaky, scrunchy sound of footsteps on the snow? Who has not felt that indescribable inner response to the strains of a well-loved melody? Who cannot remember wanting to skip, run, or jump, simply because he enjoys the sensation?

The basis of rhythmic work. In the teaching of creative rhythms the teacher must provide experiences that will make the child aware of the variety of movement of which his body is capable. As the child becomes conscious of the way he can use his body, he learns to enjoy movement for its own sake. These natural movements are the bases for all rhythm. Movement can, for the sake of simplicity be classified into two groups: locomotor movements and general body movements. The locomotor are the leg movements which propel the body in space. There are eight fundamental locomotor movements: walking, running, jumping, hopping, leaping, skipping, sliding, and galloping. All other locomotor movements are only combinations of these. The general body movements are, then, all non-locomotor movements of which the structure is capable. They may be classified as bending, stretching, swinging, swaying, pushing, pulling, turning, twisting, shaking, vibrating, bouncing, springing, rising, and falling.

As the pupil becomes conscious of and begins to use his body, the teacher must provide innumerable experiences to help him express, through movement, the many thoughts and emotions which he may feel.

In beginning the work, it is necessary to lead each child to be conscious of the wide variety of movement that is possible. The teacher may say, "What can you do with your arms? Try and see." At different times the child should experiment with all movable portions of the body. Each of the body and locomotor movements may be developed, too. "How can we skip?" "Fast, slow, high, low, hard, soft, in a circle, forward, backward, zig-zag, and so on." The object, of course, is not formal learning but stimulation and an opportunity to respond in many different ways as they occur to the child.

He should have experience in interpreting music, sounds, words, objects, movement in the world about him, and ideas. He may listen to music and express the feeling he gets from it by some sort of rhythmic movement. Some music seems to skip, some to jump, some to wander slowly. He may think of a word as *crash* or *sail* or *fly* and see if he can interpret it so that others may understand. He may imagine himself a bat, an airplane, or a horse. The field is unlimited for the interpretation of his world in movement.

Since creative activity is the basis of all this work, it is important to

remember that the child's interpretation should be his own. A certain piece of music may say one thing to him and have quite another meaning for another child. As long as he responds at all adequately to the tempo, rhythm, and intensity, his response should be recognized as valid. There can be no one and only way of interpreting any music. This is also true of the interpretation of other phases of his environment. Rhythmic games, songs, stories, poems, bouncing balls, skipping rope, all furnish other means for creative expression.

Any interpretation may end as a short study or develop into a more complex product, the composition. The following is an explanation of a study worked out from a floor design. A floor design is the actual path of the feet in moving over the floor. In one class each pupil recorded his original floor pattern on paper. Then the pupil fitted to the design the body and locomotor movements which seemed to him best suited to the pattern. The study was presented to the class, which offered suggestions for revision until the result was satisfactory.

One composition was developed this way: After watching a group of ice skaters the class decided to turn the room into a skating rink at the next dancing lesson. Each child chose a particular type of skater to represent. All kinds were portrayed, beginners as well as racers, figure skaters, and hockey players. From individual studies, a unified composition evolved in which the members of the class served as a uniformly moving background for each pupil's interpretation of his own particular skater.

O'Donnell presents the thesis that creative dance is an essential educational feature of a democratic society. She presents materials and methods by which all primary teachers may raise the quality and frequency of instruction in creative dance. Lists of dramatic and imitative activities were included in the study. Only those selected by children and satisfying to children were included. Bibliographies of music for the dance and for dance accompaniment, including records, were also given and were so keyed that teachers would readily select music related to or suitable for typical movements, designs, and compositions.[88]

Values. The values here are similar to those for any other creative activity. Besides these there is an enormous integrative value which comes from the unification of the child's thinking and bodily activity toward the common purpose of interpreting his feeling or thought. The large muscle, bodily activity is in itself a release for tensions. When that activity is bent toward expressing the meaning the child wishes to express, it is one of the most integrative experiences a child may have.

In this creative activity more than any other, perhaps, can the child be really free. There have been fewer rigid standards set up, it is newer

[88] Mary P. O'Donnell, *Creative Dance for Children: Materials and Methods for the First Three Grades* (New York, New York University, 1945), 117 pp. (Doctor's Dissertation).

and hence has no overshadowing force of custom to tell the child that this is "right" and this is "wrong." For there are no such things in the sense of teacher judgments. Whatever the child sincerely feels and expresses through movement is right for him. This opportunity for acceptance on his own ground is one of the most valuable experiences a child can have.

As the child becomes accustomed to a wide range of bodily movements he loses his self-consciousness concerning them. He develops a bodily poise and grace and freedom of movement which will be valuable to him all his life.

Evaluating rhythmic work. The principles of teaching creative rhythms are the same as for teaching all other forms of creative expression. Those who guide in creative rhythms are not concerned with how well the child can perfect his technique or conform to a set dance pattern except as these things help the pupil to express himself more genuinely. The teacher is concerned essentially with enriching the life of the child through rhythmic experiences and the way these aid in the total development of personality. She must make use of what has happened and is happening in the life of the growing child.

The teacher evaluates creative rhythm work by the sincerity and enthusiasm of the creator and his joy in creation, his increase in body coördination, the ease and range of movement, and his ability to put thoughts into movement. The class plays a large part by evaluating the efforts of fellow-workers through honest criticism. Often pupil perception is quicker and deeper, and his judgments more accurate than those of the teacher.

One can never determine how great the creative spark, nor can one predict how far a child can go with opportunity and guidance in this work. But, because of the joy in expressing through movement, because of increased body coördination, skill and technique, because of a sharpened rhythmic perception, because of the possibility of greater appreciation of the other arts which the child may get through association, and because of his own personality development through experiences in creating, one can but hope that creative rhythms will soon play a more prominent part in education than they do to-day.

Suggested Learning Experiences

1. Are you acquainted with the appreciational materials suitable for children? You should spend some time reading children's literature and listening to records suitable for children. This experience should result in a list of material with which you are familiar, suitable for your grade.

2. Observe, if possible, children doing some form of creative work, rhythmics or art work. Evaluate the extent to which each child's work is creative. Which children are free enough and have enough self-confidence so that they really are expressing their own thoughts and ideas in their own way?

3. Have you had experiences in working with the various media children use? If courses are available, all prospective teachers should have guided experience

in using them. If not, some other provision should be made so that they have opportunity to do creative work in writing children's stories, writing music, working with colored chalk, calcimine, crayon, water-colors, finger-painting materials, clay, papier-mâché, and the construction of models and puppets.

4. Collect several samples of children's creative writing. Have each member of the group apply Conrad's criteria for evaluating them. What differences of opinion occurred, what difficulties arose?

5. Observe a class learning to sing a song by listening to it on a record or by singing it with a piano, without any attempt at reading music. Watch a group learning a song by reading music. How many in the group are really reading and how many are following the others? Which way do the children seem to enjoy the most?

6. Briefly outline a unit which has possibilities of being carried along from day to day partly by spontaneous dramatization. If possible, carry this out with a group or observe it being done.

7. Obtain some experience with the verse-speaking choir. This may be by taking part in one, conducting one or even listening to one.

8. Consider the case of a boy who was interested only in reading Wild West stories and a girl interested only in *True Confessions,* each having a reading ability of about fifth-grade level. Make a list of books which you would make available to each which would be acceptable and yet would increase their appreciation of better reading.

9. Rework the creative experiences listed in the unit you developed for Chapters 7 and 9.

10. Listen to several of the radio programs broadcast for children. If a class of children is available, find out their favorite programs. A small group could prepare a program for one broadcast that would be interesting to children.

Selected References

General References

California Journal of Elementary Education, Vol. 16, August, 1947. An example of what can be done in providing songs, dances, recordings, and stories which are related to a particular occasion, festival, or era of history. An integration of many of the arts around a central theme.

California State Curriculum Commission, *Teachers' Guide to Child Development in the Intermediate Grades* (Sacramento, California State Department of Education, 1936), Chs. XVIII, XX, XXI, and XXII. Gives most practical help for creative work in language, music, art, and play.

Callahan, Jennie Waugh, *Radio Workshop for Children* (New York, McGraw-Hill Book Company, 1948), 398 pp. Includes opportunities for creative writing, music and art.

Caswell, Hollis L., *Education in the Elementary School* (New York, American Book Company, 1942), Chapter VII. Discusses the nature of creativity and important considerations in developing it in the school.

Cole, Natalie, *Arts in the Classroom* (New York, The John Day Company, Inc., 1940), 137 pp. Shows how a classroom teacher developed her children through painting, dancing, dramatics, and other art experiences.

Creative Expression, a publication of the Progressive Education Association (Eau Claire, Wis., E. M. Hale and Company. Republished, 1939). A discussion of the development of children in art, music, literature, and dramatics.

Department of Elementary School Principals, *Enriching the Curriculum for the Elementary School Child, Eighteenth Yearbook* (Washington, D. C., National Education Association, 1939). Chapter IV has articles covering a variety of experiences.

Department of Supervisors and Directors of Instruction, *Newer Instructional Practices of Promise, Twelfth Yearbook* (Washington, D. C., National Education Association,

1939). Chapter XII, Arts in Modern School Practice, discusses the creative arts program and the underlying psychology of creative expression and the means of developing it in the elementary school in many of its phases.

Free Men, The Drama of Democracy, Prepared by Music Educators National Conference for Educational Policies Commission (Washington, D. C., National Education Association, March, 1942), 23 pp. An example of correlation of music, art, and ideals of democracy.

HOCKETT, John A., and JACOBSEN, E. W., rev. ed., *Modern Practices in the Elementary School* (Boston, Ginn and Company, 1943), Ch. VI. Discusses the utilization of children's latent creative abilities.

LEE, Dorris May, and LEE, J. Murray, "Creative School Experiences," *Creative Schools, Twenty-Third Yearbook*, Department of Elementary School Principals (Washington, D. C., National Education Association, July, 1944), pp. 1-18.

MILLIGAN, Nancy Gertrude, *Relationship of the Professed Philosophy to the Suggested Educational Experiences*, Contributions to Education, No. 729 (New York, Teachers College, Columbia University, 1937), pp. 100-108, 116-125. Discusses the extent to which objectives in creative experience and leisure-time activities are met in curricular provisions.

MINOR, Ruby, *Early Childhood Education* (New York, Appleton-Century-Crofts, Inc., 1937). Contains chapters on literature, story-telling, dramatization, art, and music.

MURRAY, Josephine, and BATHURST, Effie G., *Creative Ways for Children's Programs* (New York, Silver Burdett Company, 1938). Gives a wealth of suggestions for the newer ways for children's programs.

MURSELL, James L., and others, "Measurement of Understanding in the Fine Arts," *Forty-fifth Yearbook* of N.S.S.E., Part I (Bloomington, Illinois, Public School Publishing Co., 1946), pp. 201-212. Gives objectives and criteria for measurement and evaluation.

National Society for the Study of Education, *Child Development and the Curriculum, Thirty-Eighth Yearbook* (Bloomington, Ill, Public School Publishing Co., 1939). Chapter VI discusses music, and Chapter VIII discusses the graphic and allied arts.

NORTON, John K., and NORTON, Margaret Alltucker, *Foundations of Curriculum Building* (Boston, Ginn and Company, 1936), Chs. XII and XIV. Brings together some of the best thinking and practice in music and art, with special emphasis on the creative phase.

RUGG, Harold, *Foundations for American Education* (Yonkers, N. Y., World Book Company, 1947). Chapter XIII, Creative Revolution Produces the New Esthetics. Chapter XIV, The New Esthetics: Expression and the Creative Act.

———, and SHUMAKER, Ann, *The Child-Centered School* (Yonkers, N. Y., World Book Company, 1928), Chs. XI-XX. Discusses creative activity and self-expression through the arts.

RYAN, W. Carson, *Mental Health Through Education* (New York, The Commonwealth Fund, 1938), pp. 157-166. Discusses creative experience in relation to mental health.

SMITH, Anita M., "'I Am an American'... As Six-Year-Olds See It," *Childhood Education*, Vol. 19, September, 1942, pp. 31-33. A description of the activities, learning, and understandings which resulted from the study. The ultimate achievement was the planning, sharing and thinking together that combined the efforts of every child.

TILLEY, T. Earl, "The Reconstruction of Arts in Education," *Teachers College Record*, Vol. 49, April, 1948, pp. 466-477. The purpose is "to improve the development of our children and youth." It stresses creativeness and individuality as well as coöperation and leadership.

WOELFEL, Norman, and TYLER, I. Keith, *Radio and the School: A Guidebook for Teachers and Administrators* (Yonkers, N. Y., World Book Company, 1945), 358 pp. Discusses cultural contributions in out-of-school radio and the developing of program discrimination. Also has provision for creative efforts in putting on school broadcasts.

Music

Association for Childhood Education, *Music and the Young Child* (1201 Sixteenth St., N. W., Washington, D. C., 1936). Suggestions and references for primary teachers.

BROOKS, B. M., and BROWN, H. A., *Music Education in the Elementary School* (New York, American Book Company), 1945, 376 pp. The dynamic concepts of the new education applied to music education in the elementary school.

CHEYETTE, Irving, "Teaching Instrumental Music in Public Schools," *Education*, Vol. 54, October, 1933, pp. 74-78. Discusses some of the problems and gives criteria for evaluating.

CHRISTIANSON, Helen, *Bodily Rhythmic Movements of Young Children in Relation to Rhythm in Music*, Contributions to Education, No. 736 (New York, Teachers College, Columbia University, 1938). A study of and suggestions for bodily rhythm to music from nursery school through first grade.

COLEMAN, Satis N., *A Children's Symphony* (New York, Teachers College, Columbia University, 1931). A detailed report of the writing and performing of a composition in symphonic form by children of elementary school age. (Full musical score is included.)

———, *Creative Music for Children* (New York, G. P. Putnam's Sons, 1922). A valuable basic discussion.

———, *First Steps in Playing and Composing*, rev. ed. (New York, The John Day Company, Inc., 1930). A book for children working with glasses and marimba.

CONNETTE, Earle, with the coöperation of MURSELL, James L., "Special Methods and Psychology of the Elementary-School Subjects: Music," *Review of Educational Research*, Vol. 7, December, 1937, pp. 491-492, 561-562. A summary of research and bibliography.

Department of Elementary School Principals, *Socializing Experiences in the Elementary School, Fourteenth Yearbook* (Washington, D. C., National Education Association, 1935), Ch. V gives various discussions on music and rhythm.

DYKEMA, Peter W., and CUNDIFF, Hannah M., *New School Music Handbook* (Boston, C. C. Birchard and Co., 1939), 382 pp. Truly a practical handbook which attempts to "answer practically all the problems encountered in school music teaching."

EARHART, Will, *The Meaning and Teaching of Music* (New York, M. Witmark and Sons, 1935). A philosophical and theoretical background for the teaching of music. The appendix includes an experiment in creative music.

FARNSWORTH, Paul R., "School Instruction in Music," *Review of Educational Research*, Vol. 16, April, 1946, pp. 182-190. Summarizes research on various phases of music in the schools.

FOX, Lillian Mohr, and HOPKINS, L. Thomas, *Creative School Music* (New York, Silver Burdett Company, 1936). Practical detailed suggestions for the development of creative music in the classroom.

FUNKHOUSER, Margaret, "Music at Shady Hill School," *Progressive Education*, Vol. 14, April, 1937, pp. 243-245. Provides a glimpse of the way "a foundation is laid for intelligent appreciation and genuine enjoyment of music," where music is a major subject.

HOOD, Marguerite V., and SCHULTZ, E. J., *Learning Music Through Rhythm* (Boston, Ginn and Company, 1949), 180 pp. The authors believe that children can best learn music by being led to *feel* rhythm. Illustrations of movements of varying complexity are given for use in teaching rhythmic *feel*.

JACQUES-DALCROZE, Emil, *Eurhythmics* (Boston, Small Maynard and Co., 1913). The inspiration for the work with rhythms in the school.

JERSILD, Arthur T., and BIENSTOCK, Sylvia F., *Development of Rhythm in Young Children* (New York, Teachers College, Columbia University, 1935). Deals with the development of children from two to five in their ability to keep time to the accompaniment of music. Helpful on kindergarten-primary level.

KENSCELLA, Hazel Gertrude, *Music on the Air* (New York, Viking Press, Inc., 1934). A very readable book of musical information written in answer to questions asked by the radio audience. Valuable for teachers.

KWALWASSER, Jacob, *Problems in Public School Music* (New York, M. Witmark and Sons, 1932). Presents an understanding of the values and place of music that every teacher should read.

MALLETT, Lloyd, "Choral Singing for Children," *Etude*, Vol. 66, p. 149. Discusses the development and care of the child's voice in choral singing.

MORGAN, Russell V., "Music in School Instruction," *Review of Educational Research*, Vol. 13, April, 1943, pp. 200-204. Reviews research on various phases of music and musical instruction.

MURSELL, James L., *Education for Musical Growth* (Boston, Ginn and Company, 1948), 343 pp. A development of the idea that "the concept of growth promised quite extraordinary fruitfulness if it could be brought to bear aright on the problems of music education."

———, *Human Values in Music Education* (New York, Silver Burdett Company, 1934). Presents a challenge to the educator to reorganize, reinterpret, and reevaluate what is being taught. A thorough justification for the teaching of music if one is needed.

———, *Music in American Schools* (New York, Silver Burdett Company, 1943), 312 pp. Proposes methods in ear training, rhythm, reading, vocal and instrumental performance, and creative expression which will make music an integral part of daily living.

———, and GLENN, Mabelle, *Psychology of School Music Teaching*, rev. ed. (New York, Silver Burdett Company, 1938). A valuable point of view and of great assistance.

"Music Education Marks Another Advance," 1948 Convention Report, *Music Educators Journal*, Vol. 34, April, 1948, pp. 18-21. A summary of progress.

Music Educators National Conference, *Music Education Source Book*, H. N. Morgan, ed. (The Conference, Chicago, 1947), 256 pp. Concise, practical and comprehensive.

National Society for the Study of Education, *Music Education, Thirty-Fifth Yearbook*, Part II (Bloomington, Ill., Public School Publishing Co., 1936). Contains excellent discussion of general principles, activities, and problems in school music.

PAINTER, Florence M., "An Experiment in Character Education Through Musical Experience," *Educational Method*, Vol. 16, April, 1937, pp. 363-368. Describes situations, how they were handled, and the evidences of developing attitudes. Very suggestive.

PERHAM, Beatrice, *Music in the New School* (Chicago, Niel A. Kjos Music Co., 1937). A discussion of the work at the University School at Ohio State University including their principles, materials, procedures, and results.

PITTS, Lilla Belle, *The Music Curriculum in a Changing World* (New York, Silver Burdett Company, 1944), 165 pp. A program for the elementary schools which considers the contribution of music to the development of wholesome personality, social effectiveness, and democratic ideals.

SCHOEN, Max, *The Enjoyment of the Arts*, Chapter X, "Music," by Glen Haydon (New York, Philosophical Library, Inc., 1944). Discusses music and the basic means of the enjoyment of it.

SMALL, Arnold M., ed., *Bibliography of Research Studies in Music Education, 1932-1944*, Committee on Research in Music Education, Music Educators National Conference (64 East Jackson Blvd., Chicago, 4, Illinois, Music Educators National Conference, 1944), 55 pp. A list of published and unpublished research in the teaching of music at all levels, with information as to where the studies may be obtained.

STRICKLAND, Ruth G., and STOKES, Gertrude S., "Attitudes and Appreciations in Third- and Fourth-Grade Music," *Childhood Education*, Vol. 12, March, 1936, pp. 266-269. Describes a very worth-while program and how it may be carried out.

TAYLOR, Katherine Scott, "An Autochthonous Approach to Music Appreciation," *Music Educators Journal*, Vol. 35, February-March, 1949, pp. 17-19+. A thrilling account of the use of music with first-grade children for releasing tension, for rhythmic interpretation, and finally learning to understand it.

WILLMANN, Rudolph R., *An Experimental Investigation of the Creative Process in Music*, Psychological Monographs, 57, No. 1 (Evanston, Ill., American Psychological Association, 1944), 76 pp.

WOLNER, Manuel, and PYLE, W. H., "An Experiment in Individual Training of Pitch-Deficient Children," *Journal of Educational Psychology*, Vol. 24, November, 1933, pp. 602-608. Seven of the worst pitch-deficient children in three Detroit elementary schools in three months of training learned to distinguish pitch with considerable accuracy and to sing. Bibliography of thirty-one items.

Graphic Art

ALSCHEELER, R. H., and HATTWICK, L. W., *Painting and Personality: A Study of Young Children* (Chicago, University of Chicago Press, 1947), 2 vols. Young children reveal in painting emotions they cannot express in words or behavior.

AMES, Polly, "Children and the Teaching of Painting," *Progressive Education*, Vol. 16, December, 1939, pp. 535-542. How and when to teach technique so as not to interfere with creative expression.

ARISMAN, Kenneth J., "Expressive Arts in School Instruction," *Review of Educational Research*, Vol. 13, April, 1943, pp. 190-199. Reviews research concerning art, dramatic play, imaginative stories, and other expressive activities.

Art Education Today (New York, Teachers College, Columbia University, 1935-1942). Yearbooks sponsored by the members of the fine arts staff of Teachers College.

BATCHELOR, L. M., "Children's Expression," *School Arts*, Vol. 47, p. 297. Simple, appropriate tools and freedom of expression a necessity in development of child.

BEACH, Vera, and BRESSLER, Mary H., "Phases in the Development of Children's Paintings," *Journal of Experimental Education*, Vol. 13, December, 1944, pp. 1-4. Describes four developmental phases. Believes in balance in emphasis on mastery and communication at all levels of painting.

BOYLSTON, Eloise Reid, "Creative Expression and Child Art," *School Arts*, Vol. 47, pp. 291-298. Can be taught by inexperienced teachers.

D'AMICO, Victor, *Creative Teaching in Art* (Scranton, Pa., International Textbook Co., 1942), 261 pp. Interprets a practical philosophy of creative teaching. Traces the creative development of the child in relation to a wide range of arts to suggest methods best suited to each age level.

FAULKNER, Ray, "Evaluation in Art," *Journal of Educational Research*, Vol. 35, March, 1942, pp. 544-554. Discusses the problems, issues, and tests available in this area.

———, and DAVIS, Helen E., *Teachers Enjoy the Arts* (Washington, D. C., American Council on Education, 1943), 57 pp. Describes work done at five art workshops for teachers, the enthusiastic response of those who participated, and the significant effects it had upon them.

———, ZIEGFIELD, Edwin, and HILL, Gerald, *Art Today: An Introduction to the Fine and Functional Arts*, rev. ed. (New York, Henry Holt & Company, 1949). One of the few books which take art principles and apply them to all fields of living.

GALE, Ann Van Nice, *Children's Preferences for Colors, Color Combinations and Color Arrangements* (Chicago, University of Chicago Press, 1933). Studies color preferences and combinations with children (eight to fifteen years). Summarizes literature.

GREGG, Harold, *Art for the Schools of America* (Scranton, Pa., International Textbook Co., 1941), 191 pp. Designed more for the small cities and rural areas, it is helpful to all elementary classroom teachers both in philosophy and in methods by which that philosophy may be realized in the ordinary classroom.

HORNE, Joicey, *The Art Class in Action* (Toronto, Longmans, Green & Company, 1941) A veritable encyclopedia of art activities. Valuable for all teachers of art.

HUNGERLAND, Helmut, "Self-Discovery Through Painting and Drawing," *Progressive Education*, Vol. 14, April, 1937, pp. 260-267. Presents case studies of pupils' development in painting through free expression. Indicates the necessity of this work for a teacher's real understanding of artistic expression.

KAINZ, Luise C., and RILEY, D. L., *Exploring Art* (New York, Harcourt, Brace & Co., Inc., 1947), 265 pp. Mainly for the seventh and eighth grade level, but useful for all teachers for developing appreciation and the understanding of principles.

LANDIS, Mildred M., *A Meaningful Method of Art Education on the Elementary School Level*, Education development thesis (Cambridge, Mass., Harvard University, 1947), 132 pp. Develops theory of "meaningful method," where a child develops self-control as opposed to control from without. She believes art should be a unifying process, an objectification process, a communication process, and a pervasive element in the life of the child.

LOWENFELD, Viktor, *Creative and Mental Growth: A Textbook on Art Education* (New York, The Macmillan Company, 1947), 304 pp. The psychological background and understanding necessary for a correct art stimulation suited to the different age

levels, and applied to the practical teaching situation. Thus the connection between technique, topic, and material has been stressed and analyzed in both its emotional and mental aspects.

MUNRO, Thomas, "School Instruction in Art," *Review of Educational Research,* Vol. 16, April, 1946, pp. 161-181. Summarizes research on various phases of art instruction in the schools.

National Society for the Study of Education, *Art in American Life and Education, Fortieth Yearbook* (Bloomington, Ill., Public School Publishing Co., 1941), 819 pp. A compendium of philosophy and practice on every phase of art education on every school level.

NICHOLAS, Florence W., MAWHOOD, Nellie C., and TRILLING, Mabel B., *Art Activities in the Modern School* (New York, The Macmillan Company, 1937), 379 pp. "The purpose of this book is to give a practical working knowledge of the best methods of procedure in art teaching."

———, TRILLING, Mabel B., and LEE, Margaret, *Art for Young America* (Peoria, Ill., Manual Arts Press, 1946), 286 pp. Provides for creative activity, appreciational experiences, and the "functional" use of art knowledge in meeting the problems of daily life. Particularly for upper elementary and early high school.

PAYANT, Felix, *Our Changing Art Education* (Columbus, Ohio, Keramic Studio Publishing Co., 1935). Text and many pictures giving the newer approach to art education.

PEARSON, Ralph M., *Experiencing American Pictures* (New York, Harper and Brothers, 1943), 234 pp. Reproduces many pictures and discusses them from various points of view. Includes cartoons, comics, pictures in children's books, and movies—as well as many other types of American art.

READ, Herbert, *Education Through Art* (London, Faber & Faber, Ltd., 1943), 320 pp. A challenging and exciting description of experiences going on in the English schools with art as a basis.

RUSSELL, Mable, and GWYNNE, Elsie W., *Art Education for Daily Living,* rev. ed. (Peoria, Ill., Manual Arts Press, 1946), 248 pp. The emphasis is on the selection and presentation of art subject matter so that it definitely contributes to the development of specific pupil accomplishments.

SCHAEFER-SIMMERN, Henry, *Unfolding of Artistic Activity: Its Basis, Processes and Implications* (Berkeley, Calif., University of California Press, 1948), 201 pp. Is concerned with the beginners in art experience at any age up through adulthood.

TANNAHILL, Sallie B., *Fine Arts for Public School Administrators* (New York, Bureau of Publications, Teachers College, Columbia University, 1932). Point of view is good. Includes an analysis of the *Old* and the *New* in various phases of the art program.

The Arts and Children's Living, Bulletin of the Association for Childhood Education (Washington, D. C., Association for Childhood Education, 1945), 28 pp. Written "to help redirect the art program away from the conception of art instruction as the 'teaching' of a limited number of art forms . . . to children's living that is vital and exhilarating."

WEBB, Jean, "Art Helps to Prevent Delinquency," *School Arts,* Vol. 44, March, 1945, pp. 244-245. Art fills fundamental needs of childhood. Sample case studies of what art accomplished from this standpoint.

WHITFORD, W. G., *Introduction to Art Education,* rev. ed. (New York, Appleton-Century-Crofts, Inc., 1937). A basic and comprehensive discussion.

———, with the coöperation of MEIER, Norman C., and MOORE, Joseph E., "Special Methods and Psychology of the Elementary-School Subjects: Art," *Review of Educational Research,* Vol. 7, December, 1937, pp. 464-466, 547-551. A summary of research and bibliography.

WICKISER, Ralph L., *An Introduction to Art Activities* (New York, Henry Holt & Company, Inc., 1947), 275 pp. An excellent book for the teacher with less art background than she needs. It is organized in problems which the teacher may work through by herself and thereby gain a great deal in understanding, appreciation, and point of view—as well as information.

WINSLOW, Leon Loyal, *Art in Elementary Education* (New York, McGraw-Hill Book Company, 1942), 294 pp. How art experiences may be carried on effectively in con-

nection with all school subjects. Points out unifying influence of art in lives of children.

———, "Functional Art Education," *School and Society,* Vol. 44, November 14, 1936, pp. 645-648. A valuable point of view.

———, "The Integrated Program," *School Arts,* Vol. 42, January, 1943, pp. 146-147. "Educational experience dealing with the meeting of human needs as efficiently as possible thru use of materials." Planning units of experience . . . criteria for judging an effective art program.

———, *The Integrated School Art Program,* 2d ed. (New York, McGraw-Hill Book Company, 1949), 422 pp. Presents a well-rounded program for art education from the modern point of view.

ZAIDENBERG, Arthur, *Your Child Is an Artist* (New York, Grosset & Dunlap, 1949), 192 pp. A most interesting volume, mostly children's drawings, which the author helps the reader to understand. The book is full of concrete and helpful suggestions.

ZIEGFIELD, Edwin, *Art in the Elementary School* (New York, Bureau of Publications, Teachers College, Columbia University, 1942). Helpful material by a leader in the field.

Literature

ARMSTRONG, Mary Haldeman, "Certain Aspects of Choral Speech," *Quarterly Journal of Speech,* Vol. 24, February, 1938, pp. 117-119. From an interview with Miss Marjorie Gullan, giving specific answers to special questions.

ARNSTEIN, Flora J., "The Growth of Poetic Criteria in Children," *Progressive Education,* Vol. 15, January, 1938, pp. 25-34. Shows, through examples, development of ability and evaluation of children.

BARNES, Walter, "Contemporary Poetry for Children," *Elementary English Review,* Vol. 13, January, February, April, November, December, 1936, pp. 3-9, 49-53, 135-138, 257-262, 298-304. A discussion of the works of recent authors.

BEGGS, Berenice, "Poetry to Interest Boys," *Educational Method,* Vol. 11, March, 1932, pp. 338-343. Lists poems which were favorites with a large group of junior-high-school boys.

CERTAIN, C. C., "A Course of Study in Creative Writing for the Grades," *Elementary English Review,* Vols. 12-13, November, December, 1935. January, February, 1936, pp. 231-235, 277-280, 29-32, 68-72. Introduces theory of creative writing and gives outline in terms of activities and objectives for writing verse, prose, and drama in each of three functional strands: spontaneous, inspirational, and technical.

———, "Creative Writing in the Grades," *Elementary English Review,* Vol. 10, January, 1933, pp. 16-18. A bibliography of eighty-two references.

DE BANKE, Cecile, *The Art of Choral Speaking* (Boston, Baker's Plays, 1937). Gives the teacher a background in vocal training and the mechanics of the oral reading of poetry.

Department of Elementary School Principals, *Creative Schools, Twenty-Third Yearbook* (Washington, D. C., National Education Association, 1944), 310 pp. Many of the articles deal with creative writing experiences of children.

———, *Language Arts in the Elementary School, Twentieth Yearbook* (Washington, D. C., National Education Association, 1941), pp. 346-375. Articles on creative writing of various kinds as a means of self expression.

FALK, Ethel Mabie, "Adjustment Through English Expression," *English Journal,* Vol. 26, May, 1937, pp. 381-388. "Every individual's fundamental desire to be able to communicate with others through the medium of language . . . should be regarded by the teacher as something to be capitalized."

HAMM, A. C., "Choral Reading," *Rôle of Speech in the Elementary School,* Department of Elementary School Principals (Washington, D. C., National Education Association, 1947), pp. 66-69. How a teacher used choral speaking for enjoyment and improved diction.

HUBER, Miriam Blanton, "Children's Literature: Some Disputed Values," *Elementary English Review,* Vol. 11, February, 1934, pp. 33-35, 50. Challenges regimentation and reality.

IRWIN, Irene I., "Creative Writing with a Third Grade: A Diary," *Elementary English Review,* Vol. 23, January, 1946, pp. 24-29, 37. Shows concretely how a successful teacher initiates creative writing in a new class.

JACOMBE, Grace, "Creative English in Junior Grades," *School,* elem. ed., Vol. 35, January, 1947, pp. 287-290. Makes a plea for creative personal expression in the elementary school. Gives examples of work by the third grade pupils.

LEWIS, B. Roland, *Creative Poetry* (Stanford University, Calif., Stanford University Press, 1931). A book of appreciation for teachers' own use.

MACKINTOSH, Helen K., *A Critical Study of Children's Choices in Poetry,* Studies in Education, Vol. VII, No. IV (Iowa City, University of Iowa, September, 1932). Summarizes studies and ranks 400 poems in order of preference by grades four, five, and six.

MEARNS, Hughes, *Creative Power* (New York, Doubleday & Company, Inc., 1929). The story of how one man "set the stage" for creative writing, with examples of the results.

———, *Creative Youth* (New York, Doubleday & Company, Inc., 1927). The story of how one man made the writing of creative poetry possible and many examples of the results.

MERRIAM, H. G., "Who Can Teach Creative Writing?" *English Journal,* Vol. 36, November, 1947, pp. 464-469. Anyone who can recognize inhibitions in students and remove mental blocks—release imagination, thoughts, and feelings—encourage originality and the need for proceeding from standpoint of the student himself.

MITCHELL, Mary Alice, "Creative Writing in the Elementary Grades," *Education,* Vol. 65, February, 1945, pp. 337-340. Describes the teaching of creative writing in such a way as to make the quickening of perceptions, imagination, and emotions precede emphasis upon craftsmanship.

MORGAN, Muriel, "Creative Writing in the Primary Grades," *Education,* Vol. 65, February, 1945, pp. 333-336. Suggests methods for stimulating and evaluating spontaneous expressions in young children.

PIDGE, Florence E., "Choral Reading by Verse-Speaking Choirs," *Elementary English Review,* Vol. 13, February, 1936, pp. 44-45. Gives values and cautions and a list of poems particularly suitable to primary and intermediate groups.

RAMSEY, Eloise, "Verse-Speaking Choirs for Children," *Childhood Education,* Vol. 12, February, 1936, pp. 201-205. Gives considerable specific help.

SEEDS, Corinne, "The Language Arts and Elementary-School Activities," *Progressive Education,* Vol. 10, April, 1933, pp. 204-209. Describes work in creative writing in the elementary school at University of California at Los Angeles.

SERGENT, Nellie B., ed., *Younger Poets* (New York, Appleton-Century-Crofts, Inc., 1932). An anthology of American student verse.

SWIFT, G. A., "Creative Expression," *English Journal,* Vol. 27, January, 1938, pp. 27-32. A comprehensive discussion with constructive suggestions for releasing the inherent abilities of children as a foundation, not only for composition, but for all creative work.

WILSON, Clara, and EVANS, Clara, "Enjoying Poetry with Children," *Elementary English,* Vol. 25, January, 1948, pp. 54-57. One can not *teach* appreciation of poetry, only attempt to share with her listener what the adventure of reading poetry means to her. Appreciation must be caught or felt.

WITTY, Paul, "Motivating Creative Expression Through Composition," *Educational Method,* Vol. 20, December, 1940, pp. 138-143. Discusses the function of creative writing and its motivation through the children's needs—significant personal experience and increasing social sensitivity.

Drama

BANKS, Ruth H., "Resources in Dramatic Arts," *Childhood Education,* Vol. 24, April, 1948, pp. 380-381. Lists and comments on materials and accessories for amateur plays for children.

BROWN, Corinne, *Creative Drama in the Lower School* (New York, Appleton-Century-Crofts, Inc., 1929). Written primarily for children from five to nine. It discusses all phases of dramatic work, including staging and production. Part V deals with the theory of creative drama.

BUFANO, Remo, *Be a Puppet Showman* (New York, Appleton-Century-Crofts, Inc., 1933). Describes and illustrates the making and operation of hand and string puppets.

BURKHOLDER, Marguerite, "Hi! Ho! Meet the Marionettes," *American Childhood,* Vol. 32, September, 1946, pp. 7-12. Detailed instructions and patterns of how to make and work the marionettes in their theater.

CAMPBELL, Elise Hatt, and GEIGER, Leona, "Dramatics in Three Age Groups," *Progressive Education,* Vol. 12, October, 1935, pp. 403-408. Gives experience with children from five to fourteen. Contains useful comments and suggestions.

"Child Art and Puppetry," *School Arts,* Vol. 47, May, 1948, pp. 291-322. Creative art in various media.

Department of Elementary School Principals, *Rôle of Speech in the Elementary School* (Washington, D. C., National Education Association, 1946-1947), pp. 75-87. Winifred Ward writes on "Creative Dramatics," Wirt on "The Play, the Auditorium, the Assembly," and Miller on "Creative Dramatics with Puppets."

———, *Socializing Experiences in the Elementary School, Fourteenth Yearbook* (Washington, D. C., National Education Association, 1935). Chapter III discusses plays and pageants.

Department of Supervisors and Directors of Instruction, *Newer Instructional Practices of Promise, Twelfth Yearbook* (Washington, D. C., National Education Association, 1939). Chapter VII. Newer Practices Involving Dramatic Play. Corinne A. Seeds discusses what it is and its values.

ENGELMAN, F. E., "An Approach to the Appraisal of Informal Dramatics," *Sixteenth Yearbook* of the Department of Elementary School Principals (Washington, D. C., National Education Association, 1937), pp. 435-442. Suggests various meaningful ways of evaluation.

FICKLEN, Bessie Alexander, *A Handbook of Fist Puppets* (New York, Frederick A. Stokes Company, 1935). An interesting and practical introduction to fist puppets. Chapter XIII, "Children and Fist Puppets," gives ideas and interprets values.

FLEMING, Elizabeth, "Emotionalizing the Materials of Learning," *Progressive Education,* Vol. 14, February, 1937, pp. 120-124. Shows how dramatizations were the outcome of experiences and themselves further experiences.

GILLIES, Emily Pribble, "Crosses and Knives," *Childhood Education,* Vol. 22, May, 1946, pp. 435-441. "Tells how she gained insight into the innermost feelings of fifteen- and sixteen-year-old girls, through creative dramatics and how their experiences in play acting released feelings buried deeply within the girls and led to their happier adjustment to school.

———, "Crosses and Knives," *Childhood Education,* Vol. 23, April, 1947, pp. 382-387. An excellent story of how a teacher worked with a group of adolescent delinquent Mexican girls who were distrustful, resentful, and emotionally locked up, and succeeded completely through creative dramatics.

LANCHESTER, Waldo S., *Hand Puppets and String Puppets* (London, The Dryad Press, 1937). A little book to aid children in making puppets of such materials as may easily be found.

MARTIN, Margaret Cremer, "On the Playgrounds," *Recreation,* Vol. 39, August, 1945, pp. 32. How creative dramatics was carried out in a summer playground program.

MCPHARLIN, Paul, *A Primer of Hand-Puppets* (155 Wambleton Dr., Birmingham, Mich., Paul McPharlin, 1935). Making and presenting of hand-puppet shows is briefly told for children with pictures. McPharlin also has many other small manuals on various phases.

MERKER, Barbara, *Informal Dramatizations in the Intermediate Grades* (Cincinnati, University of Cincinnati, 1947), 80 pp. Masters thesis. The further use of informal dramatic activities in the intermediate grades was recommended.

MILLS, Winifred H., and DUNN, Louise M., *Shadow Plays and How to Produce Them* (New York, Doubleday & Company, Inc., 1938). Practical guide for adults who wish to produce shadow plays for children or aid children in improving their shadow plays.

Puppetry in the Curriculum: A Manual on Puppets, Marionettes, Shadow Figures and Masks for the Elementary and Junior High School Years, Curriculum Bulletin, 1947-1948, Series No. 1 (Brooklyn 2, Board of Education of the City of New York, 1947), 172 pp. A valuable book on puppetry.

SMITH, Milton, *Play Production* (New York, Appleton-Century-Crofts, Inc., 1948). Simple, sensible and practical discussion of all the elements of play making.

TAYLOR, Ethel R., "Puppet Play in the Kindergarten," *American Childhood,* Vol. 32, June, 1947, pp. 14-15. How the children did Billy Goat Gruff with large stick puppets.

WARD, Winifred, *Creative Dramatics* (New York, Appleton-Century-Crofts, Inc., 1930). Written primarily for upper grades and junior high school, it has a point of view and suggestions that are valuable.

WILLISON, George F., *Let's Make a Play* (New York, Harper and Brothers, 1940). Assisting children at the point where they wish to write plays.

Rhythms and Dancing

BERRY, Katherine R., "Rhythms in the School Program," *Elementary English,* Vol. 25, April, 1948, pp. 221-227. Definition of rhythm, its place in creative dramatics, art, choral speaking, folk dancing, music, health education. The creative aspects of these topics are briefly and concisely discussed.

FLURRY, Ruth, "Interpretive Rhythm," *Creative Schools, Twenty-Third Yearbook* of the Department of Elementary School Principals (Washington, D. C., National Education Association, 1944), pp. 75-78. Developing rhythmic experiences in the kindergarten. Also suggestive for primary grades.

FOX, Lillian Mohr, "Rhythmic Self-Expression by Third Grade Pupils," *Creative Schools; Twenty-Third Yearbook* of the Department of Elementary School Principals (Washington, D. C., National Education Association, 1944), pp. 79-85. Describes the development of the experience with a discussion of the various percussion instruments found, made, or located by the children. A list of most useful recordings is included and a typical orchestration for the rhythm orchestra.

RICHARDSON, Beatrice E., "Dance—and the Child," *Journal of Health and Physical Education,* Vol. 10, June, 1939, pp. 328-331+. Gives illustrations of ways that rhythm and creative dancing may be presented to elementary school children.

SUTTON, Rhoda, *Creative Rhythms* (New York, A. S. Barnes and Co., 1941). Shows how elementary children reacted to a dance program based on their own experiences, how they projected themselves into their rhythm and worked out dances, and how the teacher directed and motivated the various groups toward creative activity.

WATERMAN, Elizabeth, *The Rhythm Book* (New York, A. S. Barnes and Co., 1936). Excellent practical manual for rhythm work including the body and locomotor movements, graphic work, and music.

WIECHARD, Angela, "Rhythm Play," *Childhood Education,* Vol. 23, October, 1946, pp. 87-88. "Children's everyday activities can stimulate interest in rhythm play when the teacher takes her cues from the children and enjoys their play with them."

For other references see those under "Music" in this chapter and ones pertaining to the dance in Chapter 13.

15

Evaluating Changes in the Child

Has all our effort actually produced the kind of boy and girl we have worked to produce? This is a question that faces all teachers on whatever grade level they may teach. The one-room rural school teacher wonders about it as Jimmy, who had been in her room for eight years, speaks his piece and graduates. The teacher in the large city school thinks about it when, as on the closing day in June, her class moves on to another teacher. The elementary-school principal as he shuts his desk, through for the year, frowns a little uncertainly as he thinks of the year that the many tens or hundreds of boys and girls of his school have just spent. The ultimate evaluation cannot be made until each has lived his life; there are too many examples of Insulls and Whitneys, to say nothing of the great tribe of no-accounts, for one to be sure of a prediction of the ultimate worth of a boy or girl. However, it is necessary if education is to make progress that we try to determine what is happening to children as a result of the experiences received during their school living.

Evaluation is necessary. No elementary school can be sure of the effectiveness of its instructional program without a program of continuous evaluation. It must know the changes that are taking place in individuals. It also must know where the desired changes are not taking place. As teachers we need to be able to do an effective job in interpreting all data concerning individual children. Knowing the progress of Jack in reading is not adequate. We must know his progress in other subjects, his health and physical development, his emotional health and status, his interests, his relations with others, and his intelligence. These factors must be evaluated against the home and community background in which he is growing.

This task sounds impossible with the teaching loads today. Yet is it? We have made great strides during the last ten years and we will make even greater ones during the next ten. Progress has been greatest in those schools that have been concerned with studying the child. Chapter 3 is rich in suggestions. Measuring instruments have been improved. Schools have developed better ways of accumulating information and making it available to the next teacher. Techniques have improved for combining the information to reveal the needs of the whole class. Ways of obtaining information from and giving it to parents have improved.

The purpose of this chapter, as with the others, is to furnish an over-

view of the problem of evaluation, especially in relation to recent developments. The problems discussed are evaluating the attainment of objectives, recent developments in evaluation instruments, improvements in children due to evaluation, cumulative records, and the essential elements of an adequate evaluation program. A discussion of all the available instruments and techniques is not possible. There are many excellent books such as Broom, Buros, Burton, Greene, Jorgenson and Gerberlich, Lee, Leonard and Eurich, *Measurement of Understanding*, Remmers and Gage, Ross, Smith and Tyler, Tiegs, Wood and Haefner, and Wrightstone listed in the bibliography which are especially helpful with various phases of the problem.

I. EVALUATING THE ATTAINMENT OF OBJECTIVES

A basic premise. The determination of what is happening to boys and girls as a result of school experiences has come to be known by the term *evaluation*. The main concept guiding evaluation programs is that *evaluation should be in terms of the extent to which pupils have attained the objectives of elementary education*. This thesis has become widely accepted and is definitely affecting the practices of many schools.

A great difference exists between the usual testing program of a school and the program which would be developed if the school put this thesis into practice. The testing program of most schools deals with the achievement of children in reading, arithmetic, and language usage. It is usually limited to certain abilities and knowledges. Obviously this is not sufficient to obtain an evaluation of the objectives which these elementary schools will claim they are trying to meet.

When schools are faced with this discrepancy, there is a wide variety of reasons which are given to account for it: "Measurements of the objectives are not available," "It takes too much time," "It costs too much money." Yet there are many more measurements available than are ever used. The "too much time and money" gives an idea of the importance with which the other objectives are considered. Achievement in subjects is thus revealed to be the real and only objective of many schools.

Where teachers in a school have actually tried to formulate their objectives and attempt to measure them, the results have been excellent. New measuring devices have been utilized; new material and teaching procedures have been introduced into the school.

Means of evaluating objectives. The measurement experts have said that tests should measure the objectives of a class or school level. An excellent illustration of possible means of measuring the objectives of the elementary school has been prepared by Wrightstone.[1] He took the ob-

[1] J. W. Wrightstone, "Measuring the Attainment of Newer Educational Objectives," *Sixteenth Yearbook* of the Department of Elementary School Principals (Washington, D. C., National Education Association, 1937), pp. 493-501.

jectives of elementary education as formulated in a report issued by the New York State Education Department[2] as a basis. The objectives, definitions of the objectives, and Wrightstone's suggested approaches to measuring these objectives are given in Table XX.

These objectives are:

1. To understand and practise desirable social relationships
2. To discover and develop his own desirable individual aptitudes
3. To cultivate the habit of critical thinking
4. To appreciate and desire worth-while activities
5. To gain command of the common integrating knowledge and skills
6. To develop a sound body and normal mental attitudes

It is clearly apparent that the evaluation of these objectives cannot be made by using only standardized achievement tests. A careful study of Table XX will indicate many ways in which at least some evaluation may be made of each objective. The actual results of some of these measures used in comparing newer and traditional practices are given in Chapter 6.

TABLE XX

SUGGESTED APPROACHES TO THE MEASUREMENT OF IMPORTANT EDUCATIONAL OUTCOMES *

OBJECTIVE 1: *To Understand and Practise Desirable Social Relationships*

Definition of Objective	*Suggested Approaches to Measurement*
Since character is largely determined by the relationships of an individual to his fellows, the public school will continue to encourage the pupil's practice of the older virtues, namely, trustworthiness, reliability, obedience, kindness, courtesy, and loyalty. More specifically, the goals to be sought in developing not only the pupil's ideals but also his conduct with his fellows, are: A. Respect for authority B. Leadership activities C. Self-initiated activities D. Respect for the rights and contributions of others E. Coöperation (team spirit) F. An appreciation of the interdependence of all people G. An interest in civic functions and participation for community betterment	The measurement of such specific relationships or factors as respect for others, leadership, initiative, and coöperation may be attempted by means of observational techniques and cumulative observer-diary records such as those described in: J. W. Wrightstone, "Constructing an Observational Technic," *Teachers College Record*, Vol. 37, October, 1935, pp. 1-9. Such aims as F and G in the left-hand column presumably might be measured by specially devised pencil-and-paper tests, supplemented by anecdotal records of the kind suggested in: J. A. Randall, "The Anecdotal Behavior Journal," *Progressive Education*, Vol. 13, January, 1936, pp. 21-26.

* Wrightstone, *op. cit.*, 496-501.

[2] *Cardinal Objectives in Elementary Education* (Albany, 1929).

OBJECTIVE 2: *To Discover and Develop His Own Desirable Individual Aptitudes*

Definition of Objective	*Suggested Approaches to Measurement*
It is the function of the elementary school to develop in every child the ability to express his ideas through such activities as: A. Telling and writing stories B. Writing poetry C. Dramatization D. Drawing and painting E. Modeling F. Construction G. Projects H. Music I. Dancing J. Games and sports K. Social contacts L. Personal conversation M. Leading N. Following	Certain phases of individual interests and aptitudes might be measured validly by a test employing the paired-comparison technique, such as that devised at the Ohio State University Elementary School. See: Vivian Weedon, "A Technic for Determining Interest," *Educational Research Bulletin* (Ohio State University), Vol. 13, November 14, 1934, pp. 191-197. Other phases might be measured by cumulative observer-diary records, and by qualitative scales of judgment employing the equal-appearing-interval techniques such as are described in: J. W. Wrightstone, "Constructing an Observational Technic," *Teachers College Record*, Vol. 37, October, 1935, pp. 1-9.

OBJECTIVE 3: *To Cultivate the Habit of Critical Thinking*

Definition of Objective	*Suggested Approaches to Measurement*
The child early finds ways and means of attaining his desires; in his own childish way, he decides between two courses of action; even his attempts through trial and error represent the basic raw material of the thinking process. From the moment the child enters the school, it should help him realize the need for, and give him practice in, the art of testing his own thinking. Throughout the elementary grades it is the duty of the teachers to help children to develop ability: A. To recognize problems B. To find, select, and reject evidence bearing upon these problems C. To organize materials D. To weigh evidence E. To draw conclusions, that is, to render judgment F. To test their conclusions	This objective might be measured validly above the third-grade level by a battery of especially constructed pencil-and-paper tests devoted to the abilities of pupils in: 1. Obtaining facts for problems 2. Organizing facts 3. Interpreting or explaining facts 4. Applying facts to new situations For a more extended discussion of such tests, see: J. W. Wrightstone, "New Tests for New Needs," *Educational Method*, Vol. 15, May, 1936, pp. 407-411.

OBJECTIVE 4: *To Appreciate and Desire Worth-While Activities*

Definition of Objective	*Suggested Approaches to Measurement*
It is a function of the elementary school to help every child not only to desire and appreciate worth-while activities, but also to participate in them for the pure enjoyment he gains from such participation. The habits of childhood determine adult life. If every child develops an appreciation of, a desire for, and the habit of participating in varied activities for pure enjoyment, there need be no fear as to how he will use whatever leisure time adult life may give him. Activities to be encouraged in the elementary school are: art, music, reading, games and sports, handwork, experimentation, travel, trips to places of community interest, and contact with nature in its various forms. Not the least important of the goals to be attained under this objective is the capacity to enjoy being alone. This objective in its various aspects involves not only a reorganization of the extracurricular activities of the school, but also a stimulation of the child's interest and enjoyment through regular curricular activities.	This objective might be measured by instruments very similar in nature and construction to those proposed for Objective 2, "To Discover and Develop His Own Desirable Individual Aptitudes." There seems to be a great deal of overlapping between Objectives 2 and 4, although sufficient differences may exist to permit development of distinctly separate instruments of measurement.

OBJECTIVE 5: *To Gain Command of the Common Integrating Knowledge and Skills*

Definition of Objective	*Suggested Approaches to Measurement*
While the subordinate elements of this objective are classified under the general heading of "abilities," the attainment of each one assumes the development of an ideal concerning it and an appreciation of its value.	
A. The ability:	
1. To speak easily with freedom from gross errors	Rating scales on habits and qualities of speech, constructed by a teachers' committee
2. To organize and present ideas clearly and consecutively in oral language	Rating of a stenographic record of several examples of the pupil's oral expression
3. To listen attentively to the oral expression of others	Records of teacher observation related to the attention of the pupil, and subsequent relevant questions or comments
4. To organize and express thoughts in written form	Rating samples of pupil's work by means of a qualitative scale (Hillegas,** Trabue,** Hudelson,† etc.)

** Published by the Bureau of Publications, Teachers College, Columbia University, New York, N. Y.
† Published by the World Book Company, Yonkers-on-Hudson, N. Y.

OBJECTIVE 5: *To Gain Command of the Common Integrating Knowledge and Skills—Continued*

Definition of Objective	*Suggested Approaches to Measurement*
5. To use good form, order, and arrangement: margins, spacing, paragraphing, capitalization, punctuation, abbreviation, syllabication	Pencil-and-paper test, or rating of samples of pupil's work upon a basis of error count per 100 words
6. To spell correctly one's vocabulary	Spelling scale (Morrison-McCall,† etc.)
7. To write with ease, legibility, and speed	Handwriting scales (Thorndike,** etc.)
8. To understand and use title page, index, table of contents, and appendix of a book	Standardized achievement test, such as the Iowa Every-Pupil Tests of Basic Skills (Test B)‡
9. To read either silently or orally, with ease, speed, and comprehension, material suitable to his age level	Standardized achievement test, such as the Metropolitan,† Stanford,† etc.
10. To use the voice in an agreeable way	Rating scales which might be especially devised by a committee of teachers
11. To reproduce a simple story, news item, or part of a lesson after one reading	Special test which might be especially devised by a teacher or a committee
12. To observe accurately	Writing a description of some object or objects displayed for an equal period of time to all pupils
13. To perform accurately the four fundamental operations in arithmetic, and to know when to use them	Standardized achievement test (Stanford,† Metropolitan,† Iowa Every-Pupil Tests of Basic Skills (Test D),‡ etc.
14. To use the more common kinds of measuring devices	Performance scales on measuring the classroom and playground with foot-rule, yardstick, etc.
15. To understand and use arithmetical language	Analytical Scales of Attainment: Arithmetic§
16. To understand and use the forms of social arithmetic common to his age level	Analytical Scales of Attainment: Arithmetic§
17. To understand geographical principles and their applications to problems of life	Special test (Parker-Calkins tests‖ may provide significant suggestions)
18. To read and use maps for representing ideas	Special tests (Parker-Calkins tests‖)
19. To reconstruct (in imagination) the experiences of people who lived in the past	Essay-type tests, rated according to qualitative scales, like Hillegas,** etc.
20. To understand the civic and social principles upon which American democracy is founded	
21. To use dictionary, encyclopedia, atlas, indexes, and other reference materials	Special test, or Iowa Every-Pupil Tests of Basic Skills (Test B)‡
22. To know and appreciate the elements of natural and physical science in the child's environment.	Tests of concepts and attitudes in science, especially devised by a committee of teachers.

‡ Published by the Bureau of Educational Research and Service, State University of Iowa, Iowa City, Iowa.

§ Published by the Educational Test Bureau, Minneapolis, Minn.

‖ In preparation for publication.

OBJECTIVE 6: *To Develop Sound Body and Normal Mental Attitudes*

Definition of Objective	*Suggested Approaches to Measurement*
A. Physical health	
1. Proper habits and attitudes with respect to the following, based upon adequate knowledge: (*a*) cleanliness, (*b*) fresh air, (*c*) exercise and recreation, (*d*) bodily processes, (*e*) relaxation, rest, and sleep, (*f*) posture, (*g*) protection against disease—quarantine, (*h*) care of eyes, ears, throat, scalp, feet, hands, skin, nails, and teeth, (*i*) healthful dress, (*j*) avoidance of preventable accidents, (*k*) foods—eating and drinking	Existing tests for health information and knowledge, as well as special tests for health attitudes (e.g. the Gates-Strang Health Knowledge Test**)
2. Knowledge of and ability to practise "first aid"	Adaptation of the Rogers battery of physical-capacity tests and the use of a physical-fitness index, or use of the Neilson-Cozens Achievement Scales in Physical-Education Activities
3. Knowledge of the effect of harmful drugs, narcotics, and alcoholic stimulants	Special pencil-and-paper tests and a performance scale
B. Mental health	
1. Habits of (*a*) concentration, perseverance (driving oneself now to attain an ultimate end later), (*b*) generosity, (*c*) orderliness, (*d*) emotional stability (balanced control of mental states)	Evidence for this might be gained from tests of emotional stability (e.g., the Woodworth - Mathews Personal Data Sheet) ¶ and from anecdotal records and observations which were suggested for Objective 1, "To Understand and Practise Desirable Social Relationships." See also the Haggerty-Olson-Wickman Behavior Rating Schedules.† (See also the California Test of Personality described in Section II of this chapter—Author's Note.)
2. Attitudes of (*a*) interest in people and things, (*b*) desire to cooperate, (*c*) self-control and justifiable self-confidence, (*d*) willingness to work, (*e*) dissatisfaction with failure and satisfaction with accomplishment, (*f*) tolerance of ideas, (*g*) cheerfulness and friendliness, (*h*) sense of humor, (*i*) optimism	

¶ C. H. Stoelting Company, Chicago, Ill.

This table shows clearly the complexity of the job which needs to be accomplished. In many cases measurement instruments of known reliability and validity exist. In other cases refined and controlled judgments must be used. In still other cases approaches such as sociograms are useful. The purpose of including the table is to help orient one to the task which is needed. Certainly familiarity with the table would not leave one with the feeling of complete adequacy in relation to evaluation.

The table re-inforces the necessary sequence to be followed in the process of evaluation. First, it is necessary to determine what is to be evalu-

ated. That is, there must be a precise statement of objectives. Second, the objectives need to be defined in terms of pupil behavior. Third, there needs to be selected or developed instruments which will measure the phases of pupil behavior indicated. Fourth, the evidence gathered needs to be studied and judgments made concerning pupil growth.

II. RECENT DEVELOPMENTS IN EVALUATION INSTRUMENTS

Newer instruments. The concern of the school with the whole child has resulted in decided increase in types of instruments to evaluate objectives other than those dealing with mastery of factual material. The brief description of some of the more outstanding of these newer instruments gives an idea of the fields in which attempts are being made to obtain adequate measures. A description of the more traditional measuring instruments is not given here, for such material is so adequately treated elsewhere.[3] More detailed discussions of the measurement of various phases of personality have also been presented in other sources.[4]

The most significant development of newer types of evaluation instruments is on the secondary level. This work was under the direction of Tyler's Evaluation Committee of the Thirty Schools Experiment of the Progressive Education Association. Many articles and one volume have appeared describing their work.[5] Many of the tests and the illustrations included here describe methods of observing and interpreting classroom behavior, methods of evaluating study skills, reading readiness, intelligence, and behavior and emotional development. In this latter area rating scales, anecdotal records, case studies, inventories, and projective and sociometric techniques are discussed. These materials should be considered only as illustrative of the type of instruments which have been developed. They by no means include all of the material available.

Evaluating classroom reactions. One of the most interesting means of checking behavior reactions during various periods of the day has been utilized by Pistor.[6] He selected thirty-eight trait actions which contributed

[3] See especially the following references in the bibliography: Buros, *Third Yearbook* (best reference); Greene, Jorgensen and Gerberich; Remmers and Gage, and Ross.

[4] See Buros, *op. cit.*, for the most comprehensive descriptions of various measurements. This field has moved in this last ten years definitely toward projective and other clinical methods. A good reference in this area is John E. Bell, *Projective Techniques, Dynamic Approach to the Study of Personality* (New York, Longmans, Green & Company, 1948), 533 pp. It is becoming more apparent that any good-sized school system should have a child-clinical psychologist on the staff. For an earlier reference see Percival M. Symonds, *Psychological Diagnosis in Social Adjustment* (New York, American Book Company, 1934). A most comprehensive treatment of psychological tests is in Lee J. Cronbach, *Essentials of Psychological Testing* (New York, Harper and Brothers, 1949).

[5] Eugene R. Smith, Ralph Tyler, and others, *Appraising and Recording Student Progress* (New York, Harper and Brothers, 1942).

[6] Frederick Pistor, "Evaluating Newer School Practices by the Observational Method," *Sixteenth Yearbook* of the Department of Elementary School Principals (Washington, D. C., National Education Association, 1937), pp. 377-389.

to certain general traits. The code letters are used as a basis for classification. The traits were Work Spirit (*W* for negative traits and *X* for positive), Reliability (*R*), Coöperation (*C*), Courtesy (*P*), Housekeeping (*H*), and Initiative (*N*). He then classified the trait actions according to the period during the day when they are most likely to occur. A teacher should find that occasionally scheduling periods during which she observes her pupils and indicates the presence of these trait actions would be very profitable. At least a beginning would be made in recording the observations which the teacher daily makes of pupils' behaviors but which so often escape any recording. The list classified by observation periods follows: [7]

Work Period

W 2 Completing work sooner than others and not using time wisely
W 3 Depending upon unnecessary help while working
W 4 Not concentrating deeply upon work which requires close attention
R 2 Not working as efficiently when the teacher leaves the room or is not near-by
P 1 Carrying on conversation with neighbors when attention should be given elsewhere
P 2 Touching or borrowing property of other children without their permission
H 2 Letting materials or paper remain on the floor
H 5 Written work not neatly arranged, legible, or free from blots and eraser marks

Class Conference Period

N 1 Suggesting an activity or problem for group consideration and undertaking
N 2 Suggesting possible ways of carrying out an activity or a method of solving a problem
N 3 Suggesting advantages and disadvantages of a contemplated or executed procedure
N 4 Volunteering to be chairman or a member of a committee
N 5 Criticizing work by bringing out good points or by offering suggestions for improvement
X 5 Volunteering in emergencies for extra work which will be for the good of the group
P 3 Not being courteous when speaking to others
C 3 Refusing to help others when help is necessary
R 3 Not holding oneself responsible to others for conduct

Creative Work or Construction Periods

N 3 Suggesting advantages or disadvantages of procedure
N 5 Criticizing work by bringing out good points or by offering suggestions for improvement
N 6 Asking questions of other children in order to understand their reports more fully

[7] *Ibid.*, pp. 382-384.

N 7 Asking the teacher for help when the work is not understood
N 8 Showing evidences of leadership in group work
N 9 Carrying out an original idea in art, construction work, or experimental work (*Original* here means original to the child.)
C 1 Bossing others in the group
C 2 Exhibiting actions which interfere with carrying forward the purposes of the group
C 3 Refusing to help others when help is necessary

Directed Study or Research Periods

The trait-actions used for this type of lesson were identical with those listed under Work Period.

Before-School Periods

Mornings:
R 1 Not performing assigned or selected maintenance duties
H 4 Not returning books, tools, and materials clean and undamaged
X 4 Engaging in voluntary work for the class after school or on Saturday
H 3 Not keeping a clean, orderly locker
W 1 Not using spare time wisely at the beginning of a session
W 5 Not being prompt in getting materials, in organizing them for work, and in getting started

Noon periods:
R 1 Not performing the assigned or selected maintenance duties
H 1 Not keeping books and materials neatly arranged in desks
W 1 Not using spare time wisely at the beginning of a session
W 5 Not being prompt in getting materials, in organizing them for work, and in getting started

Evaluating study skills. Much progress has been made recently in providing measures of the various study skills. Some of the reading tests are including material measuring the various study skills. Excerpts from the Progressive Achievement Test [8] are illustrative:

TABLE OF CONTENTS

CHAPTERS	PAGES
1. How Man Conquered the Wilderness	1
2. Poultry and Eggs	19
3. Transportation	43
4. Why We Need Food	50
5. The Nations of the Earth	71
6. Communication	88
7. Why the World Works	100

5. On what page does "Transportation" begin? _____ 5
6. Which of these stories is on page 88?
   1 Poultry and Eggs
   2 Communication
   3 Transportation _____ 6
7. The material on page 40 is part of what chapter? _____ 7

[8] Ernest W. Tiegs and Willis W. Clark, Progressive Achievement Tests—Elementary Battery (Los Angeles, California Test Bureau, 1937, 1943, 1949).

A most interesting test is the *Test of Critical Thinking* in the Social Studies by Wrightstone.[9] It is in three parts: obtaining facts, drawing conclusions, and applying general facts. This test should be especially useful to social-studies teachers in grades five and six.

The *Test of Study Skills*[10] by J. W. Edgar and H. T. Manuel for grades four to nine is interesting. The first part deals with use of reference books, indexes, and dictionary; and the reading of graphs, tables, and maps. The second part deals with critical inference. This second part is an adaptation of evaluation of inference tests developed for the secondary levels during the Eight Year Study.

Another valuable test is the *Work-Study Skills*,[11] part of the *Iowa Every-Pupil Test of Basic Skills*. The elementary battery (3-5) measures (a) map reading, (b) use of references, (c) use of index, (d) use of dictionary, and (e) alphabetization. The advanced battery (5-9) includes the sections a-d and one on reading graphs, charts, and tables.

Evaluating readiness. Reading readiness has been one of the most discussed topics in the elementary field. There have been numerous studies of the problem. Several tests have appeared on the market which are useful in predicting whether a child is ready to begin reading. In most cases these tests give a slightly better prediction of reading achievement at the end of the first grade than do the intelligence tests which are commonly used. There is another advantage which the Reading Readiness Test has and that is, it can easily be explained to parents. If an intelligence-test result is shown to parents and it is explained that the child "does not have enough sense to read," there is trouble immediately. However, if the Readiness Test score is presented, and if it is explained that the test indicates that the child is not ready to read, it can be accepted.

Typical and the first of a number of such tests to appear commercially is the Lee-Clark Reading Readiness Test.[12] It requires that the child (a) match letter symbols in two columns, (b) cross out one letter of four which is unlike the other three, (c) indicate knowledge of vocabulary and ability to follow directions by marking pictures according to instructions, and (d) identifying letters and words by marking one of four symbols that is the same as the criterion symbol. A section of the test is shown on page 661.

In interpreting any group test given to children when they first enter school the teacher should realize that many things may cause the test results to be unreliable for the individual child. In general, a high score on any of the reading-readiness tests is an indication that the child is

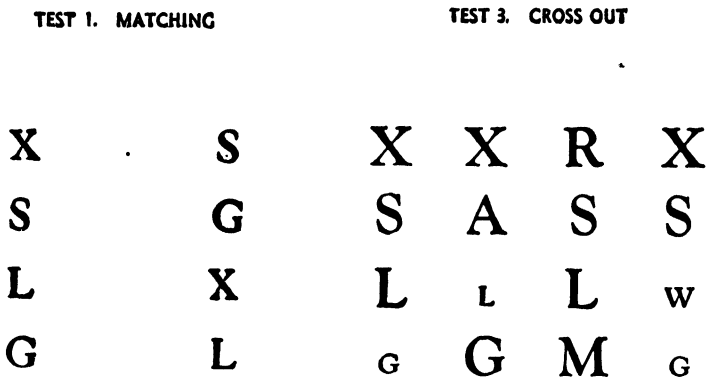
[9] Elementary School Series, Published by Teachers College, Columbia University, New York City, 1938.

[10] Published by Steck Co., Austin, Texas, 1940.

[11] Test B, grades three-five, five-nine. Forms L, M, N, O. Published by Houghton, Mifflin Company, Boston, Mass.

[12] J. Murray Lee and Willis W. Clark, published by California Test Bureau, Los Angeles, 1931. Revised 1943.

probably ready to begin to read. A low score may not safely be interpreted as not being ready. If possible, children with low scores should be retested with an individual reading-readiness test[13] or the individual intelligence test.[14]



Measuring intelligence. One of the better intelligence tests is the California Test of Mental Maturity.[15] It provides a separate battery for the pre-primary grade, primary, elementary, and one on an advanced level. Thus, it is one of the very few intelligence tests that provides for measurement at all levels with comparable norms. This feature is most important in a periodic plan of mental testing. Another feature is the fact that the test yields three IQ's: a non-language IQ, a language IQ, and an IQ derived from a combination of the other two which is equivalent to the usual intelligence quotient. This test should do much to help teachers get away from the idea that there is one IQ and to realize that children have numerous abilities which must be taken into consideration.[16]

The California Test of Mental Maturity meets another very important need. Children who have reading difficulties, when tested with the usual intelligence test are shown to have low intelligence ratings. In many cases these have been shown to be due to the fact that the intelligence test has so much verbal material in it which the child cannot read. The only solution has been to test these pupils with an individual intelligence test. This has often been impossible, for the school may not have a person trained to administer the test. Owing to the large amount of non-verbal

[13] M. J. Van Wagenen, *Reading Readiness Test* (Minneapolis, Educational Test Bureau 1932-1938, or Marion Monroe Cox, *Reading Aptitude Tests* (Boston, Houghton Mifflin Company, 1935).

[14] Lewis M. Terman and Maud A. Merrill, *New Revised Stanford-Binet Tests of Intelligence* (Boston, Houghton Mifflin Company, 1937).

[15] By E. L. Sullivan, W. W. Clark, and E. W. Tiegs, published by California Test Bureau, Los Angeles, 1936, 1937, 1946.

[16] Ernest W. Tiegs, "Breaking down the I.Q.," *Progressive Education,* Vol. 13, December, 1936, pp. 603-605.

material, the California Test of Mental Maturity yields an IQ much closer to the Binet IQ for poor readers than do other group tests. Thus it is an invaluable instrument in studying remedial reading cases.

Another useful instrument in studying remedial reading cases is the Durrell-Sullivan Reading Tests of Capacity and Achievement.[17] The Test of Capacity tests the ability of the child to understand the ideas and concepts involved through the use of non-verbal material, the Test of Achievement measures the ability of the child to understand the same ideas when present in written form. Thus, a discrepancy between the two scores, where the achievement test is the lower, indicates that a child has a real reading difficulty.

Evaluating behavior and emotional development. Attempts are being made to arrive at a valid means of describing behavior of boys and girls. At first such a task appears simple. Certain difficulties become apparent when one studies the problem.

A good description would (1) have the same meaning for others that it did for the observer, (2) reveal kinds of behavior which are significant, (3) provide a basis for planning a program of improving the condition found.

Various rating scales have been widely used for this purpose. The most common and frequently used method is the marking system, usually a five-point scale with a list of school subjects and/or traits. Refinements of this procedure include many rating scales.

One of the best known rating scales for use with elementary pupils is the Haggarty-Wickman-Olson Behavior Rating Scale.[18] The teacher is required to rate each pupil on thirty-five behavior traits. Another attempt to refine descriptions of behavior was made in connection with the P. E. A. Study.[19] After many conferences and considerable experimentation, they produced a record card which gave a list of some eleven characteristics with descriptions of behavior under each characteristic. The teacher in using the record would indicate the behavior of the child. Two examples from the scale are as follows:

Responsibility-Dependability	*Type*
Responsible and Resourceful: Carries through whatever is undertaken, and also shows initiative and versatility in accomplishing and enlarging upon undertakings.	1
Conscientious: Completes without external compulsion whatever is assigned, but is unlikely to enlarge the scope of his assignments.	2
Generally Dependable: Usually carries through undertakings, self-assumed or assigned by others, requiring only occasional reminder or compulsion.	3A

[17] By Donald D. Durrell and Helen Blair Sullivan, published by World Book Company, Yonkers-on-Hudson, N. Y., 1937.

[18] World Book Company, Yonkers-on-Hudson, New York, 1930.

[19] Eugene R. Smith, Ralph W. Tyler, and the Evaluation Staff, *Appraising and Recording Student Progress* (New York, Harper Brothers, 1942), pp. 477-478.

Responsibility-Dependability (Continued) *Type*

Selectively Dependable: Shows high persistence in undertakings in which there is particular interest, but is less likely to carry through other assignments. 3B

Unreliable: Can be relied upon to complete undertakings only when they are of moderate duration or difficulty and then only with much prodding and supervision. 4

Irresponsible: Cannot be relied upon to complete any undertaking, even when constantly prodded and guided. 5

* * *

Creativeness and Imagination

General: Approaches whatever he does with active imagination and originality so that he contributes something that is his own. 1A

Specific: Makes distinctly original and significant contributions in one or more fields. 1B

Promising: Shows a degree of creativeness that indicates the likelihood of valuable original contribution in some field, although the contributions already made have not proved to be particularly significant. 2

Limited: Shows the desire to contribute his own thinking and expression to situations, but his degree of imagination and originality is not in general high enough to have much influence on his accomplishments. 3

Imitative: Makes little or no creative contributions, yet shows sufficient imagination to see the implications in the creation of others and to make use of their ideas or accomplishments. 4

Unimaginative: Has given practically no evidence of originality or creativeness in imagination or action. 5

This scale has many ideas for a school faculty which wishes to develop comparable material. The value of the development of such a scale by the faculty is in terms of their improvement in analyzing the behavior of individual children. It will not lie in the finished product of a scale which they can use in their school.

Another scale for the rating of behavior and attitudes is the Winnetka Scale for Rating School Behavior and Attitudes.[20] This scale consists of five traits with three behaviors listed under each trait. The five traits are: Coöperation, Social Consciousness, Emotional Adjustment, Leadership, Responsibility. A sample of the three behaviors is given for Emotional Adjustment:

V. Emotional tone in school
VI. When there is a chance to go to adults for help or approval
VII. When faced with failure

Each of the thirteen behaviors has from five to seven alternates which the teacher is to check. The number following the choice is the decile rating. One difficulty is that many of the items fail to differentiate between pupils. The example dealing with emotional tone shows practically no

[20] Dorothy Van Alstyne and the Winnetka Public School Faculty (Winnetka, Illinois, Winnetka Educational Press, 1937).

differentiation between the last four items. The following item is an example of how each item is treated:

Emotional tone in school
Is happy and not easily downed; enjoys work as much as play (10)
Shows even, cheerful disposition—is calm (8)
Does not show an unusual amount of change in mood (6)
Is overserious and conscientious (2)
Does not take things seriously enough (2)
Shows extreme amount of changeableness in mood (1)
Is sullen or irritable (0)

It helps further to refine a teacher's observation and interpretation. Extreme caution must be used, for clinical studies have proven that there is no simple relation between symptoms and causes.

Still another scale has been prepared by Torgerson.[21] He provides a Pupil Adjustment Inventory. This chart provides for a rating on ten types of behavior. This rating furnishes the teacher with a means of helping to identify the pupils who are maladjusted and in need of further attention. These behaviors rated by the teacher are only symptoms of maladjustment.

Anecdotal records have become another popular way of describing the student's behavior. The technique here is to record the specific behaviors over a rather extended period of time. When teachers first begin to write such records, they are inclined in many instances to use condemning words. Later on, as they refine their technique, they become more expert at recording the specific behaviors without carrying their interpretation of them along. Certain difficulties are involved in the use of anecdotal records. One is the amount of time which is necessary to record such behaviors. Second, the teacher of course must always determine which behavior is significant. We, as parents carefully trained in observing and interpreting behavior, many times can, but often can not, determine whether a specific behavior is significant or not. A teacher will sometimes feel that he has difficulty in making such decisions. Looking back we can see that certain actions had significance at the time, but it may be difficult for trained observers to interpret the immediate significance of an act in some situations.

Further exploration of the technique of preparing anecdotal records can be found in Prescott's volume [22] and the volume by Jarvie and Ellingson.[23] Some of the basic difficulties which are involved in the preparation

[21] T. L. Torgerson, *The Diagnosis and Treatment of Pupil Maladjustment* (Eau Claire, Wis., E. M. Hale and Co., 1937). Includes a permanent record card, a case-study record, and a handbook for teachers.

[22] *Helping Teachers to Understand Children* (Washington, D. C., American Council on Education, 1945), 468 pp.

[23] L. L. Jarvie and Mark Ellingson, *A Handbook on the Anecdotal Behavior Journal* (Chicago, University of Chicago Press, 1940), 71 pp.

and interpretation of such records are clearly shown in the material reproduced from Prescott in Chapter 3 (see pages 88 to 90).

The case study provides one of the most comprehensive ways of studying individuals. To do an adequate case study usually requires a psychologist, a social worker, a physician, and the classroom teachers. All information concerning the individual is pooled, discussed, and interpreted. In practice such conferences, where the staff is available, have proven to be one of the best means of helping teachers to be more conscious of the significance of the behavior of individuals. Even without the trained experts, the pooling of information concerning one individual by a staff helps to gain insights concerning that individual which would otherwise be impossible. Case studies are merely a means of describing, organizing, and interpreting the data which is available on individual children. Help on the case study may be found in Prescott, with some help in Garrett.

Measurement of personality through inventories. Psychologists have attempted to measure various personality traits through specific inventories. The first such attempt was entitled Woodworth's Personal Data Sheet. It was prepared to detect neurotic symptoms in soldiers drafted in World War I. Since then a great number of comparable inventories have been developed. The ones having the most value for elementary schools are those that attempt to measure several traits and show some pattern of the relationship between them. It should be recognized, though, that scores from such inventories or tests cannot be interpreted on the same basis as scores from a reading test or an intelligence test can be interpreted. They, at the best, only give leads for further investigation. Too often the untrained worker who has learned to interpret scores from achievement and intelligence tests will interpret personality measures in the same manner.

Typical of such tests is the Aspects of Personality Inventory by Pintner and others.[24] This test is an eight-page questionnaire designed to measure ascendant-submissive behavior, extrovert-introvert behavior, and emotional stability.

A most interesting test is the California Test of Personality[25] by Louis P. Thorpe, W. W. Clark, and Ernest W. Tiegs. The main purpose of the test is to reveal the extent to which the pupil is adjusting to the problems and conditions which confront him and is developing a normal, happy, and socially effective personality. The elementary series of the test is for grades four through nine. There are similar tests for the primary and advanced grades.

The organization of the test is based on the concept that the adjustment of the individual is a balance between self- and social adjustment. There

[24] Rudolph Pintner and others, *Aspects of Personality Inventory* (Yonkers, N. Y., World Book Company, 1937).

[25] Published by the California Test Bureau, Los Angeles, California, 1939-1940.

are twelve sub-tests divided between self- and social adjustment in the following manner:

Self-Adjustment (Based on feelings of personal security)
- A. Self-reliance
- B. Sense of personal worth
- C. Sense of personal freedom
- D. Feeling of belonging
- E. Freedom from withdrawing tendencies
- F. Freedom from nervous symptoms

Social Adjustment (Based on feelings of social security)
- A. Social standards
- B. Social skills
- C. Freedom from anti-social tendencies
- D. Family relations
- E. School relations
- F. Community relations

The test is a good instrument for obtaining the reactions of boys and girls. The norms are in percentiles which will enable the teacher to select those pupils who seem to have problems. The use of the test should do much to focus the teachers' attention on certain phases of adjustment of which only a few are conscious. It provides a beginning point, not final answers.

Such tests are valuable for a survey of a class or a school. They help to quickly locate cases which should be given further study. In many situations it is very difficult for the teacher to locate children who are having problems of personal adjustment; and many, many times these problems of personal adjustment do not exhibit themselves in interpretable behavior in classroom situations. Such inventories should be followed by a further study of the cases indicating problems. In no sense is the test result the final or conclusive answer; it is merely a signpost which may point the way.

The observation of behavior and the reactions of the pupils obtained through inventories are separate data. The first is the interpretation of overt behavior and the latter is an indication by the pupil of how he feels about situations. Each is important and each contributes to a greater understanding of the child.

Projective methods of personality diagnosis. A clinician has several methods of determining personality difficulties without the child's realizing that he has "given himself away." The best known of these projective techniques is the Rorschach Test.[26] This test consists of a number of ink blots to which the child responds by telling what he sees in them. Reactions may range from meager enumeration to involved description and beyond. The interpretation is made by the clinician administering

[26] Bruno Klopfer and D. M. Kelly, *The Rorschach Technique* (Yonkers, N. Y., World Book Company, 1946).

the test and in many ways is most subjective. The test can only be administered and interpreted by the trained clinician; but in the hands of such, it does make a real contribution in many cases. Other projective methods include picture projection.[27] The best known of these is the Murray Thematic Apperception Test. Other tests include word association, voice analysis, analysis of painting, and play analysis. The best known of these is undoubtedly play analysis. This is applicable for only the very young child, though attempts have been made in socio-dramas on upper levels to reveal somewhat the same kind of thing that is revealed with younger children in play situations. Analysis of paintings and analysis of voice again offer leads to the specialist, but are of little value to the inexperienced. One should know that such techniques exist and that they are gradually being improved by the experts.

Sociometric techniques. The rôle the individual plays in the social group is highly significant. Many times, of course, the teacher can determine this rôle by observation. However, such observation is apt to be spotty, and the conclusions arrived at cannot be later verified. One of the best methods of obtaining information on the rôle of the individual in his group is through the use of the sociogram. This technique has been described in considerable detail in Chapter 3. Individual teachers will find it most profitable in order to get better acquainted with each individual in her class. A faculty will find that the use of a sociogram will prove an excellent device for pointing out direction in studying individual cases. Teachers, once their attention is focused on isolates in the group, can provide many experiences which will help individuals overcome this isolation. It would prove a worthwhile experiment in any faculty to make a sociogram at the beginning of the semester. Then specific experiences should be provided which would encourage better social relations among the members of the group. A sociogram should then be worked out again at the end of the semester to try to determine what actual progress had been made.

Other sociometric techniques include the "guess who" test, or Identification Sheet, and an acceptance scale. These give each child's evaluation or reaction to other children in the room. They are valuable in understanding the child making the rating, the child rated, and the relationship between them.

Most of the attention in measurement has been directed toward the achievement of the individual. This technique offers a different approach, which is worth exploring in any school attempting to get more intergroup action.

[27] Henry A. Murray, *Explorations of Personality* (New York, Oxford University Press, 1938).

III. IMPROVEMENT IN THE CHILD DUE TO EVALUATION

The value of a procedure which provides a diagnosis of difficulties followed by remedial work is not in doubt. There have been too many studies verifying the value that can come from such work to have it questioned.[28] The studies which are discussed in this section are presented because they show the benefits of such procedure in other areas of child development than are usually so studied in the elementary school.

Improvement in health. The first example deals with health and is from a study reported by Hardy. The value of a periodic health examination by a physician is recognized as a most desirable procedure. These records are made part of the individual's permanent record. Progress in health can be obtained from these reports. The effect of a program of health education is shown in Table XXI. The results of the health program are apparent from the table.[29] There is no reason why more schools which have periodic examinations cannot use the data to evaluate their program.

Improvement in adjustment. The second example is a report on the use of the material prepared by Torgerson which was described in the previous section. The study is by Ralph and describes the use of the Pupil Adjustment Inventory [30] in his elementary school in Wauwatosa, Wisconsin. All of the pupils were rated during 1934 and 1936. Comparative data are given in Table XXII for those pupils who were checked in levels 3 or 4. The improvement in social attitude, emotional control, interest, and laziness is noticeable. From other data he shows that the percentage of well-adjusted pupils (checked at level 1 in all traits) increased from 15 per cent to 31 per cent, and the seriously maladjusted pupils (checked in one trait at levels 3 or 4) decreased from 47 to 27 per cent.

Recognizing the possibilities of the many statistical fallacies which might account for the differences found, Ralph attributes most of the differences to these steps taken to help children following the 1934 survey: [31]

[28] For general treatments presenting a number of studies see: J. Murray Lee, *A Guide to Measurement in Secondary Schools* (New York, Appleton-Century-Crofts, Inc., 1936), Ch. VIII.

Leo J. Brueckner and Ernest O. Melby, *Diagnosis and Remedial Teaching* (Boston, Houghton Mifflin Company, 1931).

National Society for the Study of Education, *Educational Diagnosis, Thirty-Fourth Yearbook* (Bloomington, Ill., Public School Publishing Co., 1935).

[29] It is fully realized that a control group would be necessary, which they did have, but the point to be stressed here is that growth in a *desirable* direction was actually made.

[30] Torgerson, *op. cit.*

[31] H. Thoburn Ralph, "The Measurement and Improvement of Pupil Adjustment," *Sixteenth Yearbook* of the Department of Elementary School Principals (Washington, D. C., National Education Association, 1937), p. 512.

TABLE XXI

CHANGES IN HEALTH AND HEALTH PRACTICES OF PUPILS DURING A THREE-YEAR COMPREHENSIVE PROGRAM OF HEALTH EDUCATION IN TWO CITIES IN ILLINOIS *

Conditions and Practices	*Percentage of Pupils Showing Conditions Listed in Column 1*					
	Joliet Pupils (268)			Chicago Pupils (421)		
	Before Health Program	After Health Program	Gain (Col. 3 minus 2)	Before Health Program	After Health Program	Gain (Col. 6 minus 5)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
General physical condition good	51	85	34	28	62	34
Muscles firm	69	99	30	50	74	24
Posture erect	38	60	22	34	40	6
Tonsils infected	45	24	21	65	44	21
Teeth with cavities	63	45	18	67	48	19
Ear defects	7	2	5	14	3	11
Dietary practices adequate						
Milk	78	93	15	80	89	9
Cereal	62	87	25	..	.	..
Vegetables	67	93	26	..		..
Fruits	59	93	34	..	.	.
Sleep satisfactory	78	88	10	25	72	47

* Adapted from Martha Crumpton Hardy, "Appraising Methods of Health Education," *Sixteenth Yearbook*, Department of Elementary School Principals (Washington, D. C., National Education Association, 1937), pp. 390-398.

TABLE XXII *

PER CENT OF PUPILS SHOWING SYMPTOMS OF MALADJUSTMENT WITH RESPECT TO CERTAIN TRAITS IN 1934 AND IN 1936

Behavior Traits	*Serious Maladjustment* †	
	1934 ‡	1936 ‡
	Per Cent	Per Cent
1. Social attitude	30.7	3.4
2. Interest	16.6	7.1
3. Emotional control	15.5	8.9
4. Laziness	15.1	9.9
5. Day-dreaming	9.8	10.7
6. Nervousness	9.2	7.7
7. Responsibility	6.7	5.7
8. Achievement	6.5	3.8
9. Conduct	3.7	2.2
10. Happiness	... §	5.7

* Adapted from H. Thoburn Ralph, "The Measurement and Improvement of Pupil Adjustment," *Sixteenth Yearbook* of the Department of Elementary School Principals (Washington, D. C., National Education Association, 1937), p. 510.

† Includes, for each trait, only those pupils who were checked at levels 3 and 4 on the "Pupil Adjustment Inventory."

‡ The total number of pupils in the school was 580 in 1934, and 536 in 1936.

§ The trait happiness was not included in the inventory until 1936.

1. An effort has been made to improve teacher-pupil relationships. The study and discussion of pupil adjustment has helped crystallize among the faculty a feeling of friendliness, an understanding, and a happier relationship between teachers and pupils.

2. Teachers have become more alert and more skilful in discovering causes of maladjustment in children.

3. The health of the pupils has been watched more carefully than ever before. A few pupils have attended school only half days until nervous conditions were improved.

4. Home visits have increased. Through this closer contact, parents and teachers have worked toward the same educational objectives.

5. The parent-teacher association has been active in circulating pertinent magazines and other valuable reading material among parents.

6. Special help has been given to pupils with reading difficulties. Diagnostic tests have been given to determine specific deficiencies and to aid in selecting material for remedial work.

7. Careful selection of children for admission to the first grade has helped to prevent maladjustment resulting from failure to learn to read within a reasonable time.

8. Materials of instruction have been selected more carefully than before. Teachers have aimed to use interesting material written at the reading level of the pupils.

9. Leadership has been developed in the physical education or game periods. The "squad leader" system is used.

10. Special recreational opportunities have been provided for children after school hours and on Saturdays.

11. Tests of intelligence, achievement, and personality adjustment, together with conferences and observation, have helped to determine the nature, extent, and causes of existing maladjustments.

12. Doctors, nurses, social workers, and psychiatrists have been asked to help in diagnosing pupil difficulties and in planning remedial treatment for them.

Another study used the California Test of Personality and special attention was given the twenty-three students, and at the end of two years distinct improvement was noted on a retest.[32] Where teachers have become more interested in understanding children, improvement in the adjustment of the children can be expected.

IV. CUMULATIVE RECORDS

Present records. Acceptance as a criterion of evaluation that the child's progress must be measured in terms of his own growth requires a cumulative record. This record beginning when he enters school should follow him as long as he is in an educational institution. In actual practice an increasing number of schools are using some form of a permanent record which follows the child at least through the elementary school.

Though the keeping of the record has become an accepted practice,

[32] Charles D. Flory; Elizabeth Alden and Madeline Simmonds, "Classroom Teachers Improve the Personality Adjustment of Their Pupils," *Journal of Educational Research*, Vol. 38, September, 1944, pp. 1-8.

there are still many differences of opinion as to what should go on the record. The principal items included in the reports of some of the better known school systems are listed in Table XXIII. The results of this study by Segel are in many ways encouraging. In addition to the routine type of items more than half of the schools kept records of family background, intelligence, and achievement test results, social and character ratings, and the health record. Yet these records, if kept adequately, are a long way from giving a fairly complete and continuous picture of a pupil.

The list of traits to be rated furnish an idea of the variety of virtues school people consider important. Out of 220 different records, Segel found 103 different traits. For the most frequently listed items, see Table XXIV, page 673. Evidence that the attitude of school people is changing is shown by "Coöperation" heading the list and "Obedience" fifteenth in the list. That represents a vital change in American education.

TABLE XXIII

FREQUENCY OF OCCURRENCE IN PERCENTAGES OF EACH ITEM ON SELECTED CUMULATIVE RECORDS STUDIED *

Item	*Elementary* (113 records)
1. Scholarship (marks)	96
2. School progress	90
3. Attendance	86
4. Social and character ratings	73
5. Entrance and withdrawal	71
6. Home conditions and family history	70
7. Health	65
8. Intelligence-test results	58
9. Space for notes	58
10. Achievement-test results	51
11. Residence record	38
12. Extracurricular activities	19
13. Vocational and educational plans	17
14. College or vocation entered after leaving school	15
15. Special abilities	14
16. Photograph	7
17. Out-of-school employment	5

* Adapted from David Segel, *Nature and Use of the Cumulative Record*, Office of Education, *Bulletin*, 1938, No. 3 (Washington, D. C., Government Printing Office, 1938), p. 6.

Possible records. Some idea of the complexity of an adequate system of cumulative records can be obtained from the suggestions of Diederich.[33] In his discussion he points out that the list is "intended to present alternative possibilities among which schools may choose, and to illustrate the richness and variety of types of evidence which are available for the evaluation of even the more intangible outcomes of progressive education if

[33] Paul Diederich, "Evaluation Records," *Educational Method*, Vol. 15, May, 1936, pp. 432-440.

schools are willing to develop, collect, and interpret them." He suggests that an ideal system of individual records would contain: [34]

1. *Personal pattern of goals.* "Since the school exists, in some measure, to help achieve the goals he (the pupil) sets for himself and to lead him to formulate ever clearer, more consistent, more attainable, and more socially valuable goals, it is important to ascertain what these goals are and to record progress toward them. This requires a carefully planned conference technique in which the counselor discusses with the pupil such areas of goals as his life work, school work, school life, home and friends, sports, hobbies, the arts, reading, and other recreational activities." The pupil is to write out at intervals of perhaps a week or a month the goals in which he is interested and his success in attaining them.
2. *Records of significant experiences.* To be written out by pupil at irregular intervals.
3. *Reading records.* A record of the free reading, which is a good index of intellectual maturity. Must be interpreted on basis of type and quantity of material.
4. *Records of cultural experience.* Attendance at plays, concerts, listening periods on radio, etc.
5. *Records of creative expression.* Diederich is not certain about the way in which this should be reported. He recommends that teachers experiment. He suggests that some common elements might be: Names of pupil and teacher, the date, the name, title or subject of the creative product, the medium or materials, the approximate number of hours of work represented, statement by the pupil of the purpose or central idea of his product, what he learned in creating it, and how successful it was in achieving his purposes. An interpretation by the teacher should be included.
6. *Anecdotal records of pupils,* and interpretation by the teacher.
7. *Records of conferences.*
8. *Record of excuses and explanations.*
9. *Record of tests and examinations,* with an interpretation by the teacher.
10. *Health and family history.*
11. *Oral English diagnosis.* A diagnosis of the pupil's pronunciation, enunciation, quality of voice, diction, usage, force, etc., without knowledge of pupil. To be used in subsequent work.
12. *Minutes of student affairs.*
13. *Personality ratings and descriptions.*
14. *Questionnaires.* These include all interest and personal questionnaires pupils are asked to fill in. Should be interpreted and filed in the pupil's folder.
15. *Records of courses and activities.*
16. *Administrative records.*

Most of the records, as can be seen from reading the list, require that interpretations be made by the teachers. As Segel points out, "Its success depends in the last analysis mainly upon the ability of these persons to interpret." There is no substitute "that's just as good" for a teacher who knows and understands children. Such knowledge can not be obtained without also knowing the parents and getting their understanding of their children.

[34] This list is an adaptation of Diederich's suggestions which appeared in Segel, *op. cit.*, pp. 22-23.

TABLE XXIV

FREQUENCY OF MENTION OF CHARACTER AND SOCIAL TRAITS IN CUMULATIVE RECORD FORMS *

Trait	*Number of Times Mentioned*
Coöperation	39
Leadership	25
Personal appearance	23
Industry	23
Initiative	21
Honesty	19
Courtesy	19
Reliability	18
Dependability	16
Self-control	13
Effort	13
Conduct	12
Accuracy	12
Punctuality	11
Obedience	10

* Adapted from Segel, *op. cit.*, pp. 12-13.

A school developing a record system would find it profitable to study carefully the *American Council on Education Cumulative Record Card* [35] and the *California Cumulative Guidance Record for Elementary Schools.*[36] The latter is most comprehensive. It consists of a basic folder covering identification, home environment, personality development, and school experiences. There are supplemental cards on health and physical development, curricular experiences, and adjustment factors.

In an ever increasing extent the elementary school is going to have records which help interpret the various phases of the individual's development as he progresses through school. Much experimentation is needed before the most valuable items can be determined. The largest job is helping ourselves as teachers to understand better the significance of children's behavior.

V. ESSENTIAL ELEMENTS IN AN ADEQUATE EVALUATION PROGRAM [37]

Planning the evaluation program. A school should have a continuous program of evaluation in progress. This program should involve the constant accumulation of evidence of the extent to which individuals are

[35] One card for grades one to three and one for grades four to six. Published by the American Council on Education, Washington, D. C., 1946, 1944.

[36] Published by A. Carlisle and Co., 135 Post St., San Francisco, California, 1944.

[37] This section is partially an adaptation of the article by one of the authors, J. Murray Lee, "Essential Elements of an Adequate Testing Program," *Sixteenth Yearbook* of the Department of Elementary School Principals (Washington, D. C., National Education Association, 1937), pp. 465-469.

showing development in the attainment of the objectives of the school. The evidence may be in terms of test results, of work which the pupil has accomplished, and of observations and descriptions of behavior as recorded by the teachers.

One of the first considerations in an evaluation program is to be sure that the measures are to be used. A common difficulty is that schools give a lot of tests and then never make use of the results. This difficulty can be overcome if the measures of tests are selected in terms of the uses which are to be made of the results.

The second important consideration is to be certain that results are used for the improvement of instruction. Too often a testing program does more damage than good. Compare the effects of two types of testing programs. In one case, tests of facts and skills were given at the end of the year by a state department of education. In the other case tests of skills were given at the beginning of the year, and were selected by the local school authorities. The first procedure resulted in cramming by the pupils and in much cheating on the part of teachers. In the system that gave tests at the beginning of the year, the teachers were vitally interested in analyzing the needs of each pupil. There was no feeling that the teacher was being judged; the attention of everyone was focused upon the needs of the child. Other improper uses of tests include the practice of marking only on the basis of test results, of promoting only on the basis of test results, of using one or two measures to diagnose a pupil, and of rating teachers on the test results of their pupils.

The third essential is to be sure that the implications of the results are understood and that the necessary follow-up work is done. Many of the school research departments in large cities are doing an excellent job in this regard.[38] Most of the responsibility, however, must be carried by the principal and the teacher working together. There are a number of devices for facilitating follow-up work, such as forms for reporting the results of such work to the principal, the listing of pupils who are very poor in achievement, individual conferences with teachers, reports on remedial procedures used, and retesting to determine growth. Some devices are effective in some schools, and some in others.

As just indicated, the effectiveness of any evaluation program depends upon coöperation between principal and teacher. They must make sure that (1) the uses of the evaluation instruments are carefully planned; (2) the measurements selected will furnish information which can be used to improve the learning of children; (3) they are given at the proper time; and (4) an adequate program of follow-up work is carried on.

A suggested program of evaluation. Most schools need to develop a program that is usable. It would be very difficult to use all the measuring instruments a school should use, each year. There are two alternatives.

[38] For a description of such work, see J. Murray Lee, *A Guide to Measurement in Secondary Schools* (New York, Appleton-Century-Crofts, Inc., 1936), Ch. XI.

All measures can be given to certain children each year, or certain measures can be given to all children each year.

The first plan might give all the measures to the first-, third- and sixth-grade children each year, or some measures to the first grade, some to the second grade, etc. The second plan might include the giving of intelligence tests one year, personality tests one year, and other measures a third year. Each has its advantages.

The following plan is a modification of the two.

Each year
- Reading readiness in grade one
- Intelligence tests in grades two, four, and six
- Reading tests in each grade in October
- Unit tests by the teachers
- Development by teachers of one technique of measuring some objective (see Table XX)
- Collection of evidences of development
- Sociograms in each grade, five and above.

Even years
- A personality test in grades for which available
- A rating of the pupil by the teacher

Odd years
- Language and arithmetic tests
- Health examination

The advantages of the suggested plan are that (1) it does not overload any one year; (2) it provides for records from all grades at the same time for all factors except intelligence; (3) it provides a continuous study program for the teachers; and (4) it provides for a continuous evaluation of the development of the child and also of the school's program. Each school should develop a plan most suited to its needs.

Class diagnosis. Obtaining a diagnostic picture of a class is important when tests are given. The usual technique is to make a frequency table of the results from which the median and the range of scores are quickly determined. Thus a sixth grade class may show a distribution on a reading test of 2 on the 10th grade level; 3 on the 9th grade; 5, 8th grade; 3, 7th grade; 8, 6th grade; 7, 5th grade; 2, 4th grade; and 1 on the 3rd grade level. Such information allows a teacher to group her class in reading and provide materials suited for the level of each group.

It does not go far enough. One should know whether the individual pupils are reading on a level equivalent to their mental age. A comparison of the reading age with the mental age will provide such information. Two cases indicate the need of such data. Mary and Joan were both reading on the fifth-grade level, but Mary had a mental age equivalent to the eighth grade and Joan an M.A. equivalent to the fourth grade. Obviously Mary needed considerable help to improve her reading. Joan's reading was good and she needed material on her level.

Achievement test data needs to be related to the age and the I.Q. of

the pupil. This can be done for a class and is very valuable for both the teacher and the principal.

One easy method is to prepare a chart similar to the one in Fig. 3 which relates achievement test data to age for each pupil. Each pupil can be plotted in the proper square by initials with his I.Q. in a circle. One side of the chart represents chronological age, the other side represents educational grade placement. Each side is divided into three divisions, making nine squares in which to distribute the pupils' records. Each square is numbered, and underneath the chart is an interpretation of the educational needs of the pupils who are located in each square.

There is one difficulty and that is in determining what is above grade, at grade, and below grade. In this system the achievement tests were given at the end of the second month of school. It was arbitrarily decided to include a span from seven months below to eight months above as being at grade. This distance included a span of three half-grades, the half-grade below, the present half-grade, and the half-grade above. The pupils in the high-seventh grade would be considered as being at grade if their scores were equivalent to the low-seventh, the high-seventh, and the low-eighth grades. This span is rather wide, but there is all the more reason for studying the pupils who do not score in the "at grade" and "at age" square.

The next step was to study the pupils who did not fall in square five. In making this study, the pupil's achievement in each subject was carefully scrutinized, the pupil's case discussed with his teacher, his I.Q. considered, and, where necessary, the pupil or his parents or both were consulted.

Diagnosis of learning difficulties can be relatively simple or very complex. One pupil may not be able to carry correctly. Another may have difficulty in language arts that is a combination of a variety of factors. (See Section XVII in Language Experiences.) Obviously, one teacher can not be expert in all lines. In some schools each member of the faculty is specializing in a certain phase of the program. One thus becomes a resource person for the staff and at the same time has the advantage of having many other resource people to consult.

There are three ways in which the teacher can detect difficulties. These are observation of the pupil's attention, analysis of written work and of oral responses. The work habits of a pupil can easily be discovered by watching him for some period of time without the pupil's being conscious that he is under observation. In most cases it is possible for the teacher to make an analysis of the pupil's written work and discover the difficulties he is having. In some cases it is impossible to tell what the pupil did or was thinking from his answer or reply, in which cases questioning the pupil will probably reveal the difficulty. So many times individual diagnosis and the correction of the pupil's errors are productive of such large returns, it is surprising it is not done more often.

The case of T. S. discussed on page 476 is an excellent example of profitable return on diagnostic work. The plea is not for more teaching but rather *directed teaching,* especially in subjects involving skills. The purpose of the school is to educate individuals, hence it should follow that we should teach individuals. *We can profitably spend more time learning the student so that we can teach him.*[39]

CLASS DIAGNOSIS SHEET

NAME..... .... SCHOOL .. .. GRADE . ..

To be filled out in triplicate, one for the teacher, principal, and Research Department. *Make a separate tabulation sheet for each half grade.* Directions:—Make one tally mark in the proper square for each pupil.

ACHIEVEMENT MEDIAN

AGE	*Below Grade*	*At Grade*	*Above Grade*
Over Age	1. 106 9%	2. 49 4%	3. 2 .2%
At Age	4. 382 31%	5. 492 40%	6. 85 7%
Under Age	7. 22 2%	8. 51 4%	9. 31 3%

FIG. 3

Interpretation of the Chart

5's are doing the work that they should for their age. If they are much above average mentally they should be doing better.

2's are doing the work of the grade but are over age. If they are average or above mentally they should be doing better work.

8's are doing the work of the grade but are too young. If such pupils are above average mentally they are probably well placed.

1's are not doing the work of the grade and are too old for the grade. If they are below average mentally the program should be adjusted to their needs. If average or above they should be studied carefully and stimulated to do better work.

4's are not doing the work of the grade but are at age. If they are below average mentally the program should be adjusted to their needs. If average or above they should be made to bring their work up to grade.

7's are not doing the work of the grade and are too young. They have probably

[39] The previous two paragraphs are adapted from J. Murray Lee, *A Guide to Measurement in Secondary Schools* (New York, Appleton-Century-Crofts, Inc., 1936), pp. 292-294.

been advanced too rapidly. If they are average or below mentally they are definitely too far advanced. If above average they may be able to do the work.

3's are doing the work of an advanced grade and are too old for the grade in which they are. They should be pushed with a view to advancement where advisable.

6's are doing the work of an advanced grade but are at age. Their work should be enriched wherever possible.

9's are doing the work of an advanced grade and are too young for their present grade. A very definite enrichment program should be followed for these pupils.

Note: It will help if, for your own record, you number each pupil and put his number down in the square. This will identify the pupils in each square.

The function of tests. The use of pencil-and-paper tests occupies such an important part of the evaluation program of the modern elementary school that a brief summarization of their function is necessary. Measurement should be thought of as a tool to be used for the improvement of instruction. Many of the educational crimes which have been committed in the past thirty years have been caused by a wrong concept of the purpose of measurement. As a result, several years ago many of the so-called progressive schools raised a hue and cry against tests; they wished to eliminate such instruments from the educational program. To-day it is interesting to find the most progressive schools among those which did the most to develop new instruments of measurement.[40] Now, more than ever before, teachers and principals are making effective use of tests in improving the learning of children.

Much criticism has been directed against standardized tests for not measuring the outcomes in which the modern elementary school is interested. Certainly that criticism is well directed against many of the standardized tests available to-day, but not against all of them. Standardized tests which measure merely a knowledge of facts in literature, history, or geography were constructed for an elementary school whose central purpose was the mastery of a given body of subject-matter. There is no more reason for using such tests to-day than there is for using books which were written for that type of school.

One phase of the evaluation program requires knowing to what extent the child has mastered the basic tools of learning, such as reading, arithmetic processes, and the use of language. It is also necessary to know how well children understand and can use important facts and concepts in elementary science and the social studies. Tests which measure such abilities are of great value to the elementary teacher. Several batteries of tests have been constructed for measuring the basic tools of learning,[41]

[40] See Ralph W. Tyler, "Defining and Measuring Objectives of Progressive Education," *Educational Record Supplement*, No. 9, January, 1936, pp. 78-85.

[41] Such as the Progressive Achievement Tests, published by the California Test Bureau, Los Angeles; the Unit Scales of Attainment, published by the Educational Test Bureau, Minneapolis; and the Modern School Achievement Tests, published by the Bureau of Publications, Teachers College, Columbia University, New York.

and a number of publishers handle separate tests that are of value. Thus, as instructional methods have changed, a corresponding change has occurred in the types of tests being developed. The best tests to-day measure much more than the mere ability to recall specific items of subject-matter.

Types of tests and their uses in the classroom. Although tests are not general cure-alls, they can be put to several profitable uses in the classroom. The following paragraphs review some of the ways in which teachers can make use of test results. These uses are classified under these types of measures, as follows: (1) tests of capacity or intelligence, (2) standardized tests of educational achievement, (3) teacher-made tests of achievement, (4) measures of personality development, and (5) measures of development through performance.

Tests of capacity or intelligence. Boys and girls are complex human beings. The more we know about them as individuals the better we are able to plan an educational program suited to their individual needs. Tests of capacity or intelligence furnish one very important measure of these needs. We now recognize that these tests do not tell the whole story of a child's potentialities; but if his problems are to be understood, such a measure cannot be omitted.

The past few years has seen a great improvement in such tests. There are now available reading-readiness tests to predict success in first-grade reading, special aptitude tests to predict success in art, music, algebra, geometry, and a number of other fields. These newer types of tests enable us to know much more about a child's capacities than did the traditional intelligence test.

A teacher can use such measures to:

1. Provide a diagnostic evaluation of the mental abilities of each child
2. Interpret learning difficulties in the light of pupil abilities
3. Identify outstanding pupils of either high or low ability who need special educational procedures
4. Analyze individual problem cases, such as failing pupils, disciplinary problems, and personality difficulties
5. Understand the general mental level of the class as a guide in the selection of instructional materials and experiences

Standardized tests of educational achievement. Requirements of modern unit-of-work programs demand that teacher-made tests and standardized tests supplement one another. Neither type is complete in and of itself. Moreover, their differences in purpose should be clearly understood by teachers. The standardized achievement test can furnish a much more comprehensive measure of abilities and skills than can teacher-constructed tests. On the other hand, to measure the specific understandings that were the aim of a given unit of study, and the definite informational materials that were taught in that unit, is clearly the function of teacher-

made tests. It is to this aspect of measurement that the teacher should devote her time and effort in test construction.

Most standardized tests which the teacher is likely to use yield a diagnostic profile that provides an analysis of the abilities of each individual pupil. They also have comparable norms for the various abilities. All this information makes it possible for the teacher to utilize the results in the improvement of her instructional program. She can use standardized achievement tests to:

1. Discover the difficulties and shortages of each child in the skills which are essential for success in pupil activities
2. Obtain a measure of each child's skills in such fields as reading vocabulary, reading comprehension, arithmetic, and language
3. Provide a basis for planning an individual remedial program to meet the needs of the pupil
4. Provide a basis for grouping pupils according to their needs for remedial instruction (This refers to the formation of groups in reading or other specific fields, and not to the practice of grouping classes homogeneously for the entire instructional program.)
5. Show the pupils in which skills they are in need of special work
6. Discover which pupils are not doing work which compares favorably with that done by pupils of the same ability in other schools (The use of a mental maturity test together with the achievement test will furnish the basis for this information.)
7. Evaluate strengths and weaknesses of instruction in the various skills
8. Provide a basis for studying the adjustment problems of the child (Many of the behavior problems of pupils are due to educational maladjustments.)

Teacher-made tests of achievement. One difficulty in the unit-of-work program in many schools is that the teachers have hoped for certain outcomes but have not known what outcomes were attained. Too often there has been no effort to check on the actual results. The need for checking does not mean that the teacher should make the pupils feel that their passing or failing depends on the results of tests. It does mean, however, that the teacher should use tests to determine whether the class and its individual members do or do not have certain understandings. All fear of the testing situation can be eliminated if the pupil is not made to feel that his whole future depends upon his success on a particular test.

Situations that show whether understandings[42] have been attained should be the basis of most test questions. A mastery of facts does not mean that the pupil will understand the implication of those facts. We have made the mistake in the past of measuring only knowledge of the facts rather than the children's understanding of them. An excellent illustration of this point is the usual test on graphs. Such a test covers the facts of the graph, but not the implications of the data represented. The test item must be placed in a functional setting to be effective. The

[42] The best source for help is the National Society for the Study of Education, *The Measurement of Understanding, Forty-Fifth Yearbook,* Part I (Chicago, University of Chicago Press, 1946), 338 pp.

change from the traditional test to the functional test is largely a question of emphasis and of imagination in providing test situations.

Teachers should construct many of their own tests and use the results:

1. In determining to what extent the understandings of a given unit of work have been attained
2. In determining what changes in attitudes, beliefs, and appreciations have taken place
3. To show pupils where they need to place more emphasis in their work
4. To evaluate strengths and weaknesses of instruction
5. To guide in the future selection of work units and types of activities
6. To discover weaknesses in skills for which standardized tests are not available

The construction of test situations which are functional will challenge the cleverest teacher. A study of some of the newer published tests should be helpful. Also, there has been gradually built up a considerable body of material on various types of test questions,[43] and these suggestions and illustrations should be valuable to teachers on all levels.

Measures of personality adjustment. If the evaluation program includes only measures of ability and achievement to do school work, the teacher will largely direct her efforts to this end. Actually it is even more important to have a youngster well adjusted than showing outstanding achievement. The evaluation program must provide for the use of measures of personality.

Measures of personality are of three types—tests, rating scales for use by teachers, and recorded observations of pupils' behavior by teachers. A discussion of several of the newer instruments developed in this field are given in Section II of this chapter and suggested references for further study are included in the bibliography.

The use of both tests and either rating scales or observation of behavior is needed. The tests show how the youngster feels. The rating or observation indicates what an outsider thinks about the child. In many cases these two yield decidedly different results.

The results of such measures can be used:

1. In locating pupils who are ill adjusted
2. In determining erroneous beliefs and attitudes which affect the development of the child
3. To interpret learning difficulties in light of personality adjustment
4. To evaluate the strengths and weaknesses of the school program in relation to the adjustment of pupils
5. To guide in reconstructing the experiences of pupils who are ill adjusted
6. To analyze individual problem cases, such as failing pupils and disciplinary pupils
7. To determine over a period of time changes taking place in the adjustment of the individual

[43] Lee, *A Guide to Measurement in Secondary Schools,* Chs. X and XI.

Measures of development through performance. Have you ever studied all of a child's drawings collected over a two-year period? If you have you have been surprised at the development that can be seen. They also furnish leads to many of the child's interests. We have not even made a beginning as far as most children are concerned with accumulating evidences of their performances over a period of time.

What types of evidence can be collected? Some schools are keeping lists of books read by each child. Samples of their writing and art work would be helpful. Descriptions of work that pupils did, written by themselves with additional comments by the teacher would be valuable. The anecdotal record is used in a number of schools.

The problem is to collect material that will give insight into the way the child is developing and the extent to which development is taking place over a period of time. Our present system of records is too much like taking some snap-shots of a boy each year and then never keeping them, or at least never bringing them together.

Such measures could be used:

1. To determine if the child was really showing satisfactory development, physically, educationally, and socially in relation to his own growth pattern
2. To show differences in the development of various individuals
3. To furnish leads in cases where the pupil becomes maladjusted

Evaluation is necessary. No elementary school can have an efficient instructional program without knowing what it is accomplishing. It must know what is happening to boys and girls as well as what it is teaching them. Evaluation must be made in terms of the total development of the child. The many means for measuring the various phases of development are ample assurance that the measurement experts recognize and are trying to meet this need. The inadequate use which is made of their efforts in most schools shows that actually we are doing very little about it. Comparisons of class norms are not sufficient; we must know how much the individual boy or girl has grown and in what ways he has developed.

Developments in the measurement field are appearing with such rapidity that it is most difficult to keep informed. The most useful means for this purpose is the *Mental Measurements Yearbook* [44] by Oscar K. Buros. The latest volume is the *Third* (1949) *Yearbook.* A volume is promised for every two or three years. New tests and new measurement books are described and critically reviewed by one or more authorities. Buros is making a most needed and outstanding contribution to measurement. Another useful source is the issues of the *Review of Educational Research* appearing every three years. Here the various studies dealing with measurement are summarized.[45]

[44] Oscar K. Buros, *Third Mental Measurements Yearbook* (New Brunswick, N. J., Rutgers University Press, 1949).

[45] The recent issue was published in December, 1948.

Progress in the next few years needs to be made in utilizing available instruments for evaluation in the classrooms. Improvements in the present instruments and construction of new ones are necessary, but their improved utilization in each classroom will be the most significant contribution.

Suggested Learning Experiences

If you have not had work in measurement and are unfamiliar with the field, read Barr, Burton, and Brueckner, Broom, Greene, Jorgenson and Gerberich, Remmers and Gage, Ross, Tiegs, or Webb and Shotwell, for material dealing with (1) criteria for selecting tests, (2) types of tests, (3) uses of tests, (4) giving and scoring tests, (5) tabulating results.

2. What changes in your testing practices or those of a teacher you have observed are indicated if you accept the two criteria discussed in Section I?

3. List the material you would put in a cumulative file for a pupil.

4. Observe the work of several children, using the check-list by Pistor or some comparable list. Does the use of the list focus attention on reactions of the child which would otherwise have been overlooked? What are the principal differences between the children observed?

5. Summarize in as complete a manner as possible all the information you have on one child. How has your understanding of the needs of the individual developed as your study of the case has progressed?

6. Select one study skill and develop a test to measure it.

7. If there are test records available, study the differences in IQ's on the Binet test and a group intelligence test. Where the group tests are the lower, is it because these cases are poor readers?

8. Analyze a permanent record card. What items do you think could be omitted? What additional items are necessary if the record is to reflect the use of the criteria in Section I? Which of Diederich's suggestions do you feel would be practical for use in your school?

9. Outline a testing program for your class which you feel will furnish as adequate an evaluation of their work as possible. These suggestions should be criticized by other teachers of the same grade.

10. Using the yearbook *Measurement of Understanding,* prepare a series of questions to measure one understanding.

11. While you are not expected to know the more technical materials, it would be advisable to look through at least one of the following references: Bell (footnote 4), Buros, Cronbach, Garrett, Jones, Sargent, or Smith and Tyler. Jennings and Moreno in the bibliography of Chapter 3 are also valuable.

12. Now that your work is completed, what do you feel are the most important changes which have taken place in your thinking and practices as a result of your reading, discussion, and experiencing?

Selected References

(See Chapter 6 for references dealing with the evaluating of differences in the traditional and modern programs and Chapter 3 for references on emotional development.)

Ayer, Fred C., *Practical Child Accounting* (Austin, Texas, The Steck Company, 1949). The most comprehensive treatment of all forms of pupil records available. A must for the professional library of the school.

Barr, A. S., Burton, William H., and Brueckner, L. J., *Supervision* (New York, Appleton-Century-Crofts, Inc., 1947). Chapters VI, VII, XVI, and XVII are valuable.

BELL, John E., *Projective Techniques; Dynamic Approach to the Study of Personality* (New York, Longman's Green & Company, 1948), 533 pp. A survey of projective techniques for studying personality.

BROOM, M. E., *Educational Measurements in the Elementary School* (New York, McGraw-Hill Book Company, 1939). Excellent treatment.

BROWNELL, Wm. A., "The Evaluation of Learning in Arithmetic," *Arithmetic in General Education, Sixteenth Yearbook* of the National Council of Teachers of Mathematics (New York, Bureau of Publications, Teachers College, Columbia University, 1941), pp. 225-267. A valuable discussion for improving evaluation in arithmetic.

BUROS, Oscar K., *Educational, Psychological, and Personality Tests of 1933, 1934, 1935* (New Brunswick, N. J., Rutgers University, 1936). Brief descriptions of tests published between dates given. The plan is to issue similar reports often.

———, *The Nineteen Thirty-Eight Mental Measurements Yearbook* and *The Nineteen Forty Yearbook* (New Brunswick, N. J., Rutgers University, 1938, 1941). Especially written reviews of recent tests and measurement books. Unusually valuable.

———, *The Third Mental Measurements Yearbook* (New Brunswick, N. J., Rutgers University, 1949), 1047 pp. Comprehensive reviews of tests published in the last ten years, with reviews of books and studies dealing with measurement. A must for all professional school libraries where the system uses tests to any extent.

BURTON, William H., *The Guidance of Learning Activities* (New York, Appleton-Century-Crofts, Inc., 1944). Chapter XVII, "The Measurement and Evaluation of Learning Outcomes," is excellent to use as supplement to the present chapter. Emphasizes in more detail how the teacher can evaluate objectives.

CLARKE, H. Harrison, *The Application of Measurement to Health and Physical Education* (New York, Prentice-Hall, Inc., 1945), 415 pp. A functional approach, of some value for elementary schools.

CRONBACH, Lee J., *Essentials of Psychological Testing* (New York, Harper and Brothers, 1949). Covers basic concepts of testing, tests of intelligence, special abilities, achievement, and personality and character. Thorough treatment of newer procedures. Strongly recommended for the professional library of the school.

Department of Elementary School Principals, *Appraising the Elementary School Program, Sixteenth Yearbook* (Washington, D. C., National Education Association, 1937). Chapters VI and VII deal with the evaluation of socializing experiences and progress of pupils.

DRISCOLL, Gertrude, *How to Study the Behavior of Children* (New York, Bureau of Publications, Teachers College, Columbia University, 1941), 84 pp. Excellent for improving the direct observation of children by the teacher.

GARRETT, Annette, *Interviewing: Its Principles and Methods* (New York, Family Service Association of America, 1942), 125 pp. An excellent exposition of the social case work approach of value to teachers.

GREENE, Edward B., *Measurements in Human Behavior* (New York, Odyssey Press, 1941), 777 pp. Valuable descriptions of tests and treatment of the fundaments of test theory.

GREENE, Harry A., JORGENSON, Albert N., and GERBERICH, J. Raymond, *Measurement and Evaluation in the Elementary School* (New York, Longmans, Green & Company, 1942), 639 pp. Primarily emphasizes tests.

GROUT, Ruth E., *Health Teaching in Schools* (Philadelphia, W. B. Saunders Company, 1948, Chapter IX, "Evaluation." Rich in suggestions for determining progress in pupil health behavior.

HAMALAINEN, Arthur Emil, *An Appraisal of Anecdotal Records* (New York, Bureau of Publications, Teachers College, Columbia University, 1943), 87 pp. "One of the best analyses of anecdotal records yet published." "The anecdotes are often as much a reflection of the teacher's outlook as they are of the child's behavior."

HAND, Harold C., *What People Think About Their Schools; Values and Methods of Public Opinion Polling as Applied to School Systems* (Yonkers, N. Y., World Book Company, 1948). Excellent for determining what the parents think of the schools.

HILDRETH, Gertrude H., *Bibliography of Mental Tests and Rating Scales*, 1945 Supplement (New York, Psychological Corp., 1946). A comprehensive bibliography.

JONES, Harold E., and others, *Development in Adolescence: Approaches to the Study of*

the Individual (New York, Appleton-Century-Crofts, 1943), 166 pp. Of value to the individual in exploring techniques of personality analysis. A comprehensive report of one case.

LANE, Robert Hill, *The Principal in the Modern Elementary School* (Boston, Houghton Mifflin Company, 1944). Chapter IX presents in detail a method of evaluating a school by intervisitation of principals.

LEE, J. Murray, *A Guide to Measurement in Secondary Schools* (New York, Appleton-Century-Crofts, Inc., 1936). Chapters on the various uses of tests, with several chapters summarizing material and suggestions on the construction of teacher-made tests. This reference supplies a detailed treatment of the authors' point of view as applied to the secondary level, but has much that is applicable for the elementary school.

LEONARD, J. Paul, EURICH, Alvin C., and others, *An Evaluation of Modern Education* (New York, Appleton-Century-Crofts, Inc., 1942). Summarizes the evidence of evaluation of ability to acquire and apply facts, develop social attitudes; the evaluation of skills, physical fitness, and personality. Excellent in suggestions for techniques of evaluation.

MCCALL, W. A., *Measurement* (New York, The Macmillan Company, 1939). Useful for tabulating and interpreting results.

MONROE, Walter S., "Educational Measurement in 1920 and in 1945," *Journal of Educational Research,* Vol. 38, January, 1945, pp. 334-340. Shows growth of measurement during period. Makes clear evaluation concept much larger than the former measurement concept held.

MURSELL, James L., *Psychological Testing* (New York, Longmans, Green & Company, 1947), 449 pp. A good general treatment of psychological testing.

National Council for the Social Studies, *Teaching Critical Thinking in the Social Studies, Thirteenth Yearbook* (Washington, D. C., National Council for the Social Studies, 1942). Valuable analysis of critical thinking with suggestions for evaluation.

National Society for the Study of Education, *The Measurement of Understanding, Forty-Fifth Yearbook,* Part I (Chicago, University of Chicago, 1946). Most valuable for examples of measures. Has separate chapters on the various subject fields.

———, "Judging the Results of Instruction in Elementary Science," *Science Education in American Schools, Forty-Sixth Yearbook,* Part I (Chicago, Illinois, University of Chicago Press, 1947), pp. 106-117. See also Chapter XV. Excellent material for evaluation in elementary science.

PISTOR, Frederick, "Standardized Measure and Classroom Democracy," *Journal of Educational Research,* Vol. 35, November, 1941, pp. 183-192. Describes an instrument for evaluating classrooms that would seem to have considerable promise in helping teachers develop a more democratic philosophy.

REMMERS, H. H., and GAGE, N. L., *Educational Measurement and Evaluation* (New York, Harper and Brothers, 1943), 580 pp. Good treatment of physical and social development in addition to the usual content of a measurement book.

Review of Educational Research. For educational tests see December, 1942; December, 1945; and December, 1948 issues. For psychological tests see February, 1941; February, 1944; and February, 1947. Summaries of research.

RHODES, Alvin E., "The California Cumulative Guidance Record for Elementary Schools," *Educational Leadership,* Vol. 2, April, 1945, pp. 300-302. California supervisors develop a minimum record form for all elementary pupils.

RINSLAND, Harry Daniel, *Constructing Tests and Grading in Elementary and High School Subjects* (New York, Prentice-Hall, Inc., 1937). Useful to the teacher in constructing objective tests.

ROSS, C. C., *Measurement in Today's Schools,* 2d ed. (New York, Prentice-Hall, Inc., 1947). Has a good discussion of teacher-made tests.

SACKS, Georgia May, "Evaluation in the Social Studies," *Education,* Vol. 66, March, 1946, pp. 461-469. Points out specific opportunities for the classroom teacher to improve her evaluation of the social studies.

SARGENT, H., "Projective Methods: Their Origins, Theory, and Application in Personality Research," *Psychology Bulletin,* Vol. 42, 1945, pp. 257-293. A fairly com-

prehensive review of projective methods of evaluating personality. Of interest to the specialist.

SEGEL, David, *Handbook of Cumulative Records*, Office of Education, Bulletin 1944, No. 5 (Washington, D. C., Government Printing Office, 1945). An excellent summary of material on records.

SMALLENBURG, Harry, "Evaluating Pupil Progress," *Educational Leadership*, Vol. 2, March, 1945, pp. 290-293. An excellent general article outlining the concept of evaluation.

SMITH, Eugene R., TYLER, Ralph, and others, *Appraising and Recording Students Progress* (New York, Harper and Brothers, 1942). Volume III of the Eight-Year Study. Extremely valuable for illustrations of ways of measuring objectives. Though it deals with secondary schools it has many ideas of value to the elementary teacher. Also valuable for record systems.

STRANG, Ruth, *Reporting to Parents* (New York, Bureau of Publications, Teachers College, Columbia University, 1947), 105 pp. One of the series of "Practical Suggestions." Contains helpful principles and illustrations.

TIEGS, Ernest W., *Tests and Measurements in the Improvement of Learning* (Boston, Houghton Mifflin Company, 1939). An excellent treatment of testing on the elementary-school level.

TORGERSON, Theodore L., *Studying Children* (New York, Dryden Press, 1947), 230 pp. Has chapters on observation, anecdotal records, interview, tests, and case study.

WEBB, L. W., and SHOTWELL, Anna M., *Testing in the Elementary School* (New York, Rinehart & Company, Inc., 1939). Essentially a discussion of standardized tests. A revision of their earlier work.

WEITZMAN, Ellis, and MCNAMARA, Walter J., *Constructing Classroom Examinations—a Guide for Teachers* (Chicago, Science Research Associates, 1949). Helpful guide to teachers in the improvement of their tests.

WOOD, Ben D., and HAEFNER, Ralph, *Measuring and Guiding Individual Growth* (New York, Silver Burdett Company, 1948). Stresses the need of knowledge of the individual and suggests means of obtaining such knowledge. The book is written in a conversational manner which is unique and challenging.

WRIGHTSTONE, J. Wayne, *Appraisal of Newer Elementary School Practices* (New York, Teachers College, Columbia University, 1938). Contains many suggestions for those interested in developing newer evaluation instruments.

———, "Can Pupils Help Evaluate Their Growth," *School Executive*, Vol. 62, August, 1943, pp. 22+. Suggests how pupils can help to evaluate their growth, beginning with the setting up of aims or objectives and ending with self-appraisal or joint appraisal of growth.

WRINKLE, William L., *Improving Marking and Reporting Practices in Elementary and Secondary Schools* (New York, Rinehart and Company, Inc., 1947), 120 pp. Very practical, one of the best sources available.

Index

Abernathy, Ruth, 584
Ability, task adjusted to, 111
Abrams, Alfred W., 282
Acceptance, social scale, 101-102; with respect, basic need, 73
Achievement, related to interests, 149; selection of experiences for successful, 204; tests, 679-680, *see also* Evaluation
Ackerson, Luton, on inferiority attitudes, 71
Activities, authenticity of, 230; balance of, 200, 228-230, 237-238; classification of, 238; criteria for construction, 268-269; criteria for evaluating, 238; culminating, 234, 269-270; evaluation of, 228-230; in social studies, 340-343; types of, 234-238; *see also* Experiences
Activity, socialized, a factor in learning, 186-187
Activity program, evaluation of, 207-210; *see also* Units
Adams, Fay, 18, 218, 258, 442
Adams, Mary A., 291, 328, 349; on social concepts, 321; on study skills, 324-325
Adams, Olga, 455
Audition, errors in, 477
Administrative policies, effect on emotional health, 104-109
Administrative procedures, contrast in modern and traditional school, 206
Adjustment, guides for recognizing, 83-86; of teachers, 118-123; teachers' viewpoint on, 79-83; value of evaluating, 668-670
Adventure, basic need, 76-77
Air age, 306-307
Aitchison, Alison E., 319
Alabama, 555
Alden, Elizabeth, 670; on personality adjustment, 86
Aldrich, Grace L., 191
Alhambra City Schools, on oral language program, 367, 372
Alilunas, Leo J., 319; on adjustment of teachers, 120
Allard, Lucile, 463
Allmon, Anna, 404
Alscheeler, R. H., 644
Alsop, Gulielma, on psychoneurotic pupils, 83-84
Altman, E., on teachers' adjustment, 120
American Association of School Administrators, 18, 289, 290, 347, 527-529, 549, 551, 580
American Council on Education, 136, 191
American Dental Association, 568-569, 581
American Historical Association, 546
American Library Association, 293, 404
American Medical Association, 561-563, 581
American Physical Education Association, 581
American Red Cross, 582
Ames, Louise Bates, on development of sense of time, 44
Ames, Polly, 644; on art, 617
Ames, Viola C., 62
Anderson, Bernard A., 431
Anderson, Harold H., 191
Anderson, Marion H., 583; on control, 159; on effect of teachers' personalities, 78, 112-118
Anderson, V. V., 132; on personality, 121; on teachers' attitudes, 121
Andrews, Gladys, on rhymic activity, 636-639
Andrus, Ruth, 218
Anecdotal records, 88-91, 93-94, 664-665
Appreciation, evaluation of, 654; of graphic art, 612, 613-615; of literature, 621-622; of music, 597-598; reading for, 387-388; through creative experiences, 592-594
Aptitudes, evaluation of individual, 653
Arbuthnot, May Hill, 415, 443; on reading interests, 410
Arey, C. K., 520
Arisman, Kenneth J., 644
Arithmetic, 449-482; activity and subject-matter units, 467-468; correlations with other subjects, 464-466; diagnosis in, 475-479; elimination of topics, 453; errors in, 475-478; experiences of first grades, 455-456; a functional setting for, 453-454; goal of, 450-452; grade placement in, 456-459; guiding principles in, 466-467; incidental *vs.* formal, 455-456, 459-460; knowledge of entering pupils, 455; need of change in, 467; place of incidental, 462-466; problem-solving in, 472-474; readiness for, 454-456; remedial

Arithmetic—*continued*
material, 478-479; speed in, 476-477; studies by teachers, 463; suggested experiences in, 451-452, 460-466; suggested program in, 472; transitional programs in, 467-472; what to teach in, 453-454
Arithmetic problems, errors in, 473-474; improving solution of, 474; skills in, 473
Arkin, Herbert, 294
Armstrong, Mary Haldeman, 623, 646
Armstrong, W. E., 151
Arndt, C. O., 307, 346
Arnstein, Flora J., 646
Art, appreciation of graphic, 612-613, 613-615; creating graphic, 616-620; creative and personality, 620-621; philosophy of, 611-613; place of, 610-611; producing graphic, 615-616; standards of graphic, 618-620
Aspects of Personality Test, description of, 665
Assemblies, change in emphasis, 269-270
Association for Childhood Education, 285, 291, 292, 520, 641
Association for Supervision and Curriculum Development, 135, 211, 218, 258, 259, 266, 291, 292, 293, 305, 307, 346, 349, 441, 479, 501, 520, 640, 648
Astoria, N. Y., 525
Atomic age, 306-307
Attention, development of, 44-45
Attention span, 44-45
Attitudes, desirable for teachers, 120-121, 123-125; evaluation of, 555, 656; in reading, 387-388; of mental hygienists toward pupil behavior, 80-83; of teachers toward pupil behavior, 79-83; social studies, 326-327
Audiometer, 568
Audio-visual, 273-288
Authenticity, of a unit, 230
Ayer, Adelaide M., 319
Ayer, Fred C., 683

Back, Lucia, on poetry, 628-629
Backus, Berta, 431, 466
Backus, Ollie, 440
Baker, Emily V., 151, 349, 522
Baker, Harry J., 135, 443
Baldwin, Lillian L., on music, 598
Baltimore, on democracy, 330-332
Banks, Ruth H., 647
Barnes, Walter, 440, 646
Barnett, Margaret, 273
Barr, A. S., 18, 218, 683
Bartlett, Mary M., 293
Baruch, Dorothy, 122, 517
Basic needs, *see* Needs
Batchelor, L. M., 644
Bathurst, Effie G., 346, 641
Bauer, William W., 133
Bavelas, Alex, on frustration, 160
Baxter, Bernice, 132; on effect of teachers on pupil adjustment, 118
Baxter, Edna Dorothy, 132
Bay City, Michigan, 338-339
Beach, Vera, 644
Beale, Howard K., 288
Beard, Charles, 346
Beard, W. P., 501, 520
Beauchamp, Wilbur L., 484
Beaumont, Henry, 132, 191, 218
Beggs, Berenice, 646
Behavior problems of pupils, 312-313
Bell, John E., 657, 684
Beloit, social-studies program, 334-335
Bender, Eric, 271
Bentley, John Edward, 581
Bergen, C., 522
Bernard, Jack, on learning, 176-177
Berry, Katherine, 619; on choral speaking, 623
Betts, Emmett A., 382, 390, 403, 438, 440, 441, 443, 448; on visual difficulties, 401
Betts, Thelma M., 441
Betzner, Jean, 412, 443
Biber, Barbara, on democratic development, 51; on the "five to eight," 50, 135
Bienstock, Sylvia F., 612
Biester, L. L., 546, 547, 581
Billig, F. G., 520
Binet, Alfred, 33
Bingham, N. E., 493
Black, Erma S., 135
Blackstone, Grace K., on rhythm band, 604
Blackwood, Paul E., 499, 518-519, 520
Blommers, Paul, on reading comprehension, 406
Bloom, L. G., 347
Blough, Glenn O., 485, 499, 518-519, 520
Bode, Boyd H., 18, 218
Bonar, Hugh S., 447
Bond, Eva, 390, 444
Bond, Guy L., 133, 390, 444
Books, criteria for selection of, 289; place of textbook, 288, 420; types of supplementary, 289
Bowden, Florence B., 441
Bowman, Herbert Lloyd, on preferences and achievement, 149
Bowman, Isiah, 346
Boylston, Eloise Reed, 644
Boynton, Paul L., 62, 151, 429; on children's wishes, 149; on sex differences in physical development, 31

Bozenhard, Marion, on rhythmic activity, 636-639
Brameld, Theodore, 305
Bratton, Dorothy, 135
Breckenridge, Marian E., 28, 62, 132
Breed, Frederick S., on spelling rules, 423
Bremerton, Wash., 279
Bressler, Mary H., 644
Brewer, Joseph E., 191; on effect of teachers' personalities, 78, 112-118
Brewton, John E., and Sara W., 444
British Association for the Advancement of Science, on standards for printing school texts, 26
Broady, L. P., 554, 581
Broderick, Gertrude G., 295
Broening, Angela, on language experiences, 363
Bronson, John A., on effect of teachers' personalities, 119
Brooks, B. M., 642
Brooks, Fowler D., 313; on moral development, 54
Brooks, Mary Esther, 276, 293
Broom, M. E., 444, 651, 683, 684
Brown, Corinne, 647
Brown, E. C., Trust, 547
Brown, Francis J., 62
Brown, H. A., 642
Brownell, Clifford L., 563, 581, 584
Brownell, William A., 455, 458, 459, 460, 479, 480, 684
Brubacher, J. S., 19, 303
Bruce, G. V., 522
Bruce, Wm. F., 191
Brueckner, Leo J., 18, 218, 463, 479, 480, 668, 683; on errors, 477-478; on problems, 474
Bruner, Herbert B., 218
Bryngelson, Bryng, 441
Buckingham, B. R., 446, 466, 480; on typography of textbooks, 26; on word list, 422
Bufano, Remo, 648
Buhler, Charlotte, on culture as a factor in social development, 60; on play development, 58, 60
Bullis, H. Edmund, on human relations, 162
Burbank, Calif., 213, 329; on list of social functions, 330; on reading and language activities, 364-366; on sequence, 331; on unit outline, 252-253; on use of social functions, 329
Burkhardt, R. W., 350
Burkholder, Marguerite, 648
Burnham, William H., 134; on haste, 111; on success, 110
Burns, Joseph, 603
Buros, Oscar K., 651, 657, 682, 683, 684; on interest inventories, 145
Burton, William H., 18, 19, 23, 191, 218, 219, 222-224, 248, 258, 349, 651, 683, 684; on business practices of children, 460-461; on creative experiences, 586-587; on learning, 165; on units, 230, 231, 233-234, 245
Buswell, Guy T., 480, 481; on errors, 477-478; on non-oral reading, 385
Byrd, O. E., 584

Caldwell, Otis W., 485, 521; on social development, 49
California, 267, 484; curriculum commission of, 19, 257, 640; on art, 619; science course, 502, 503-504, 512-513, 514, 516, 517; State Department of Education, 258, 520
California Elementary Principals' Association, 151
California Test of Mental Maturity, 661-662
California Test of Personality, 665-666, 670
Callahan, J. W., 294, 441, 640
Campbell, Doak S., 218, 219, 349
Campbell, Elise Hatt, 648
Camping, 267-268
Carey, Alice E., 258, 349
Caries, dental, 568-569
Carlisle, Laura Mae, 441
Carmichael, Leonard, 62, 132, 441
Carmody, Harriett, 444; on difficulty of reading material, 403
Carpenter, H. A., 485
Carson, Louise Giddings, on reading vocabulary, 397
Cartoons, 281
Case study, 665
Caswell, Hollis L., 218, 219, 222, 640; on oral communication, 376
Causal thinking, development of, 47-48
Center-of-interest program, 329-330
Central Washington College of Education, 279
Certain, C. C., 646
Chapman, Alvan L., on statements of philosophies in courses, 215-216
Charts, 281
Chase, W. Linwood, 349
Chatto, C. I., 307, 346
Chazal, C. B., 460
Chenoweth, Laurence B., 552, 581
Cheyette, Irving, 642
Chicago, University, 521; on reading, 382
Children, relationships of, from sociometric measures, 95-100
Child-study, evaluation, 91-93; plans, 86-91

Christianson, Helen, 642; on rhythm, 602
Church, Norval L., on music, 605
Civic responsibility, changes to meet, 13-14; objectives of, 10
Claremont, Calif., 444; on reading, 385
Clark, Ella C., 275, 293
Clark, Mildred, on learning, 186
Clark, Willis W., 349, 447, 659-661, 665
Clarke, H. H., 581, 684
Classrooms, 525-529
Clement, J. A., 289
Cleveland, Ohio, 484, 502, 505-506
Clifton, A. R., on institutes, 342
Clubs, 270-271; poor practice in organizing, 270-271
Cole, Luella, 431, 440, 444
Cole, Natalie, 640
Cole, Stewart G., 349
Coleman, Satis N., 642; on music, 604
Colton, R. R., 294
Commins, W. D., 191
Committee of Seven, contribution of, 459; findings of, 457; limitations of, 458-459; research of, 456-459
Communication, oral, 368-377; and the classroom situation, 369; diagnosis of, 437-438; means of developing, 370-377; outcomes of, 372; problems of voice and speech, 377-380; situations for, 363; two-way process, 368-369
Communication, understanding written, 381-417; developments in reading, 381-386; diagnosis and remedial work, 399-404; fundamental concepts, 386-393; reading for various purposes, 405-409; reading interests, 409-417; special problems of, 393-399; *see also* Reading
Communications, written, 417-429; diagnosis of, 437-438; handwriting, 427-429; situations for, 363-364; spelling, 420-427; written expression, 417-420
Community, studies of, in curriculum improvement, 213-214; and home, relation to emotional health, 128-129
Community resources, list of, 264-265, 500; principle in utilization of, 203, 307; *see also* Environment-centered curriculum
Composition, 417, 624-625
Compton, Miriam A., 289
Conant, J. B., 297, 346
Conard, Edith U., on manuscript writing, 428; atomic and air age, 306-307; developed by differentiation and integration, 22; development of, in learning, 174
Concepts, as a factor in learning, 187-188; development of, in science, 484, 488-492; development of number, 449-453, 454-456; negative, in learning, 187-188; science courses based on, 506-512; selection of experience in terms of, 202, 227-228, 301-309; social-studies courses based on, 322; *see also* Science concepts *and* Social concepts
Connette, Earl, 642
Conrad, Lawrence H., on creative writing, 626, 629-630; on use of language, 351
Construction activities, 229, 268-269
Consultant, 214
Consumer education, 13, 308
Continuity, selection of experiences to provide, 226-227
Control, 200, 302-303; John Dewey on, 200
Conversational topics, children's preferences in, 150
Cook, Lloyd Allen, 219, 349
Cooper, Dan H., on popularity of children, 102
Cornell University, 520
Cory, Stephen M., 293
Coulter, Kenneth C., on parent-school relations, 128-129
Counts, George S., 19; on philosophy, 215-216
Courses, in arithmetic, 460-472; in health, 533-543, 555-560; in language arts, 366-368; in science, 500-517; in social studies, 329-338
Craig, Gerald S., 485, 487, 499, 502, 508, 520, 522; on internationalism in field of science, 483; on science concepts, 490
Crary, Ryland, 346
Creative experiences, characteristics of, 586-595; in dramatic play, 630-636; influence of various factors on, 589-591; in graphic art, 610-621; in literature, 621-630; in music, 595-610; in rhythms and dancing, 636-639; in writing, 625-630; program in, 594-595; purposes of, 591-594; values of, 588-589; *see also* Art, Dramatic play, Literature, Music, *and* Rhythmic work.
Creative dramatic play, 630-636; defined, 630-631; form of, 633-634; how develops, 631-632; how to develop, 634-636; materials for, 631; values, 632-633
Creative expression, 438; who is capable of, 587
Creative graphic art, 616-618; and personality, 620-621
Creative music, 606-610; methods, 606-607; techniques, 607-610
Creative rhythms and dancing, 636-639; basis of, 637-638; evaluating, 639; values of, 638-639
Creative writing, 625-630; and personality, 629; defined, 625-626; difficulties in, 625;

evaluation of, 629-630; how to encourage, 626-628; of poetry, 628-629
Criswell, Jean, on sociometric measurement, 102
Critical thinking, 203-204; evaluation of, 653; in reading, 405
Cromwell, Gertrude E., 581
Cronbach, Lee J., 657, 683, 684
Croxton, W. C., 318, 493, 520, 522
Cuff, Noel B., on vocabulary development, 55, 56
Culminating activities, lists of, 234, 269-270
Culture, a factor in social development, 59-60; and levels of language, 356-361
Cumulative records, 670-673; suggestions for, 672
Cundiff, Hannah M., 642
Curriculum, 197-221; changes necessary, 10-16, 217, 301; definition of, 197; effect of, on emotional health, 109-112; environment-centered, 203; in science, 500-517; method of organizing, 205; social studies, 296, 328-340
Curriculum changes, methods of obtaining, 15-16, 211-217
Curriculum development, basic principles for, 197-204; guides in a program of, 211-212; lay participation in, 214-215; suggestions for, 211-217, 301-302
Curtin, G. C., 266
Curtis, F. D., 493, 520, 522
Cuthbert, Kenneth N., on music, 608-609
Cutright, Prudence, on handwriting, 427

Daily program, *see* Schedule
Dakin, W. S., 231
Dale, Edgar, 152, 274, 278, 280, 281, 291, 293; on children's questions, 147, 148
Dalrymple, Charles O., 481; on fractions, 453
Dalton, Robert H., on criteria of control, 160
D'Amico, Victor, 644
Dancing, 554; *see also* Creative rhythms *and* Rhythmic work
Davis, Allison, 191
Davis, B. E., 266
Davis, Edith, 446
Davis, Helen E., 644
Davis, Frederick B., on reading comprehension, 406
Davis, Robert A., 191
Dawson, Mildred A., 152, 441, 448; on children's interests, 150
Dearborn, Walter F., 23, 24, 33, 40, 41, 62, 566; on learning plateaus, 168
de Banke, Cecile, 646
de Bernardis, Amo, 280
DeBoer, John I., on language arts, 362
Decimals, activity units in, 468-469
de Huszar, G. B., 219
Delinquency, effect of school pressures on, 161
Democracy, effect on emotional health, 110-111; discipline in, 158-160; learning for a, 155-162, 302-303; required in school system, 14, 199-200, 250; values in, 298-299
Democratic processes, responsibility for group through, 79
Dent, Ellsworth C., 291
Dental care, 568-569
Denver Public Schools, 152, 532, 555; health recommendations, 534-543
Department of classroom teachers, 132; on teacher adjustment, 120, 123
Department of Elementary School Principals, 13, 14, 19, 133, 219, 269, 270, 271, 291, 292, 294, 306, 307, 308, 346, 441, 444, 640, 642, 646, 648, 684; on school-community relations, 129; on spiritual values, 303; on teachers' part in direct approach to pupil problems, 131
Department of Superintendence, *see* American Association of School Administrators
Department of Supervisors and Directors of Instruction, *see* Association for Supervision and Curriculum Development
Departmentalization, argument against, 229
Des Moines, Iowa, 264-319; on choral speaking, 624; on elaboration of a social concept, 321-322
Deutsche, Jean Marquis, 62; on causal thinking, 47-48; on language development, 57
Dewey, John, 19, 151, 152, 205, 219, 347; on continuity of development, 202; on control, 200; on educative experience, 201; on interest, 137, 139, 141; on rôle of teacher, 249-250; on science programs, 484; Society, 303
Dewhurst, J. Frederic, 19
Dexter, Clara E., 473
Diagnosis in arithmetic, 475-479; in language arts, 430-440; in reading, 384; in a unit, 239-240
Dicken, S. N., 349
Dickie, Donalda J., 259
Diederich, Paul, on records, 671-672
DiMichael, Salvator G., 86
Discipline, contrast in modern and traditional school, 206; group or individual, 125; in a democracy, 158-160; meaning of, 124-125; principles of, 125-128

Division, errors in, 478
Dobbs, Alma A., 581
Dolch, E. W., 440, 444, 446; on word list, 422
Dolio, A. J., 215
Dollard, John, on learning, 161-165
Douglas, Mary Peacock, 295
Douthelt, Elsie M., 583
Dramatic play, forms of, 633-634; how develops, 631-632; how to develop, 634-636; interpretation of, 630-631; materials for, 631; values of, 632-633
Drill, in learning, 188-189
Driscoll, Gertrude, 136, 684; on adjustment, 83; on contributing to the group, 51; on how to study behavior, 88; on memory, 45; on motor development, 28
Drive, a factor in learning, 164-165
Dudley, D. R., on study techniques, 210
Dugdale, Kathleen, 482
Duncan, Melba Hurd, on voice and social adjustment, 377
Dunlap, Jack, on preferences and achievements, 149
Dunn, Louise M., 648
Duplicating devices, 283
Durrell, Donald D., 444, 448, 662
Durrell-Sullivan Reading Tests, 662
Dykema, Peter W., 642; on music, 600

Earhart, Will, 642
East Greenwich, R. I., 338
Eaton, Anne T., 415, 444
Eaton, M. T., 482
Ebbinghaus, on learning, 163
Ebel, Robert L., 521
Eberhart, John C., on development of moral judgments, 54
Economic efficiency, changes to meet, 12-13; objectives of, 9-10
Economic understandings, 308
Edgar, J. W., 660
Edgerton, G. P., 520
Educability, 154-155
Education, *see* Modern school, Traditional school
Educational disabilities and emotional health, 107-108
Educational Policies Commission, 6, 19, 191, 218, 219, 263, 298-299, 302, 307, 347, 484; objectives listed by, 7-10; on changing society, 6; on democratic values, 7, 298-299; on learning, 15
Edwards, A. C., 220
Effort based on interest, 142-144
Eldridge, Albert G., 282
Ellingson, Mark, 664
Elliott, G. M., 294
Ellis, Albert, on projective techniques, 94
Ellis, D. B., on teachers' attitudes, 80-81
Elsbree, Willard S., 67-68
Emotional adjustment, as a factor in language arts, 351-356, 421, 432; as a factor in reading, 401-403; as a factor in speech, 377-379; cause of interference in learning, 171-172
Emotional development, evaluation of, 662-667; experiences for, 199; influencing, 65; school practice in, 86-93
Emotional health, importance, 66-67; nature of, 65
Enfield, Gertrude, on choral speaking, 622-623
Engelhardt, N. L., 583
Engelhart, M. D., 482
Engelman, F. E., 648
English, Mildred, on composition, 624
Environment, as a factor in language arts, 57, 431, 432; effect of, on I.Q., 38-43; effect of, on personality, 65; improvement of, 307-308, 527-529
Environment-centered curriculum, 203, 263-268, 307-308; in science, 500
Enyeart, Buel F., 347
Equipment, recording, 286-287
Erb, Bessie P., 464
Errors, corrected, as a factor in learning, 180-181, 182; in arithmetic problems, 477-478; in language usage, 418-420
Eurich, Alvin, 192, 220, 651, 685; on evaluation of modern schools, 207-208
Evaluation, 650-686; by children, 249; definition of, 651; developments in, 657-667; improvement due to, 668-670; necessity of, 650-651, 682-683; of activities, 238, 342-343; of child-study, by teachers, 91-93; of health, 574-580; of intelligence, 661-662, 679; of intercultural experiences, 305-306; of modern program, 207-210, 652-656; of objectives, 209-210, 216-249, 651-657; of personality, 662-667, 681; of pictures, 275; of pupil reactions, 657-659; of reading readiness, 660-661; of study skills, 659-660; of units, 246-249; records needed in, 670-673; suggested program of, 673-682; *see also* Unit, evaluation of
Evans, Clara, 647; on appreciation, 622; on verse-speaking choir, 623
Evans, Mary Elizabeth, 31
Evans, Ruth, 603
Everett, Samuel, 205, 218, 219
Examinations, effect of, on emotional health, 108
Exceptional child, and personality development, 105-106

Excursions, 264-265
Experience, an aid to speech, 373; a factor in learning, 263; interest based on, 138-139, 150; John Dewey on educative, 201; reading based on, 382; units, 223-224
Experiences, audio-visual, 273-288; basic principles in selection and guidance of, 197-204, 228-230, 313; basis of interest, 138-139; basis of meaning, 173-174; community, 263-268; contrast between modern and traditional schools in organizing, 206, 343; criteria for evaluating, 230, 238, 305-306, 545-546; emotional, 199; environment centered in science, 500; evaluation of results of, 342-343; in science, 495-500, 504-506; language, vital, 361-366; need for diversified, 224-225, 228-230; need to develop quantitative thinking, 449-453; number, in a functional setting, 451-453, 460-466, 468-472; purposes of language, 352; social, 198, 305, 340-343; socializing, *see* Socializing experiences; types in a unit, 236-237; *see also* Activities
Experimentation, equipment for, 517-519; in science, 499
Exton, Bess, 581
Extracurricular, as part of curriculum, 198
Eyes, development of, 25-26; influence of typography on, 26-27; tests, 567

Fahey, Helen, 554, 582; on physical development, 553
Falconer, Vera M., 291
Falk, Ethel Mabie, 441, 646; on language and personality, 354-355
Fallis, Edwina, 293
Family living, 12
Fargo, Lucile F., 295, 444
Farnsworth, Paul J., 612
Farquear, Lucile J., 8; on social problems, 313-316
Fatigue, a factor in learning, 184-185
Faulkner, Ray, 614
Fears, children's, 311-312
Fedder, Ruth, on guidance, 160-161
Fenner, Phyllis R., 295, 444
Fenton, Norman, 134
Fernald, Grace M., 444, 480
Ficklen, Bessie Alexander, 648
Field trips, 264-265
Fildes, R. E., 291
File for pictures, 275
Finlay, Gilbert C., 215
Fire protection, 525
First aid, 574
Fitzgerald, James A., 419, 447; on composition errors, 419-420
Fitzpatrick, F. L., 152, 493, 522; on pupil interests, 146-147
Flannelgraph, 277
Fleming, Elizabeth, 648
Flemming, Cecile White, 191
Fletcher, Norman D., 292, 307, 308, 348
Flinn, Ruth, on thiamin and learning, 183
Florida, 307, 308, 484, 516-517
Flory, Charles D., 62, 670; on personality adjustment, 86
Flotow, Ernest A., on child relationships, 103
Flurry, Ruth, 649
Foran, T. G., 447
Forest, Ilse, 347
Forkner, H. L., 521
Forlano, George, 191; on learning, 187
Forsyth, Elaine, 295, 347
Fort Worth, Texas, 319, 463, 464, 479, 484; on arithmetic course, 469-472; on arithmetic experiences, 451-452; on guiding principles in arithmetic, 466; on guiding principles in science, 493-495; on health and physical education, 526-527, 557; on science course, 510-512, 514
Foster, Josephine C., 259, 521
Fowlkes, John Guy, 278, 294
Fox, Grace I., 583
Fox, Lillian Mohr, 642, 649; on creative music, 607; on toy orchestra, 604
Fox, Maude Greene, 409
Fractions, activity units in, 468-469; elimination of, 453; errors in, 478; in first grade, 456
Frank, Josette, 285; on reading comic books, 410-411
Frank, Lawrence K., 131
Franseth, Jane, on child-study plan, 87
Franzen, Raymond, 584
Frasier, G. W., 485
Frederick, O. I., 8; on social problems, 313-316
Frederick, Robert W., 170, 191, 219, 259, 260
Freeman, Frank N., on handwriting, 427; on individual differences in mental growth, 34
Freeman, Frank S., 191
French, Esther, 554, 581
French, Will, 19
Fresno, Calif., in list of social functions, 330; on sequence, 331
Friedman, K. C., 319
Frutchey, Fred P., on determining interests, 144
Fryer, Douglas, 152
Fuller, Alice C., 277
Fuller, K. G., 454

Fullerton, C., on music, 600
Funkhouser, Margaret, 642

Gable, Martha A., 287, 294
Gage, N. L., 651, 657, 683, 685
Gaines, M. C., on picture stories, 399
Gale, Ann Van Nice, 644
Gang, as a factor in personality development, 52-53
Gann, Edith, on reading and emotional adjustment, 401
Gans, Roma, 444; on critical evaluation, 406
Garden City, N. Y., 463
Gardner, Ella, 581
Gardner, W. H., 568
Garfield, Sol, on racial differences in intelligence, 35
Garrett, Annette, 665, 683, 684
Gates, Arthur I., 133, 382, 403, 404, 431, 438, 440, 441, 445, 447; on generalization in spelling, 423; on learning, 187; on reading and emotional adjustment, 402; on spelling difficulties, 422
Gates, G. S., on learning, 177
Gavian, Ruth W., 347, 463, 481
Geiger, Leona, 648
Generalizations, social, 319-321
Geoghegan, Patricia S., on composition errors, 420
Geography, guiding principles in, 339; study skills in, 241
Gerberich, J. R., 651, 657, 683, 684
Gesell, Arnold, 62
Geyer, Denton L., 259
Gilbert, Alice, 521
Giles, H. H., 259
Gilkey, Beulah, on reading and emotional adjustment, 402
Gillies, Emily Pribble, 648; on dramatic play, 634
Ginsburg, Jekuthial, 480
Glaser, Edward M., on critical thinking, 362-363
Glenn, Mabell, 643; on rhythm, 603
Glens Falls, N. Y., science course in, 502, 507-509, 514
Globes, 281-283
Goals, contrast between old and new, 205
Goetz, Rachel Marshall, 316, 347
Goldman, Bernard, 208; on the newer education, 157
Goodykoontz, Bess, 448
Grade placement, in arithmetic, 456-459; in health, 534-543; in reading, 384, 394-395; in social studies, 329
Graham, Alva W., on developing democratic attitudes, 110
Grammar, 418
Graphs, 281
Gray, Lillian, 443
Gray, William S., 441, 445, 447, 448; on reading in content fields, 407; on real problems in reading, 384; on non-oral reading, 385; on stages in reading, 388
Greene, Edward B., 684
Greene, Harry A., 417, 448, 651, 657, 683, 684; on grammar, 418
Greene, Max, 347
Gregg, Harold, 644
Grener, Norma, on developing thinking, 362
Griffiths, Nellie L., 441
Griffiths, William, 546, 547, 581
Grimstead, Wren Jones, 259
Grizzell, E. D., 259
Grossnickle, Foster E., 480
Group, child as part of, 50-53; relationships, research findings on, 49-50; responsibility for, through democratic processes, 79
Grout, Ruth E., 541, 545, 547, 575, 576, 581, 684
Growth, in weight, 23-24; mental, *see* Growth of intelligence; of preschool children, 22-23; physical, 23-27; principles of, 22-23; relation of size to personality, 24
Growth of intelligence, 32-44; as to higher thought processes, 37; as to language comprehension, 37; as to memory, 36; as to motor coördination, 37; as to number concepts, 37; cessation of, 34-35; constancy of, 38-44; levels of understanding, 33-34; meaning of, 33-34
"Guess Who" technique, 99-101, 667
Guides for recognizing pupil problems, 83-84
Guiding principles, for a program of curriculum development, 197-204; in arithmetic, 466; in art education, 611-613; in health education, 526-527, 547; in language arts, 368; in oral communication, 376-377; in science, 493-495; in selection of experiences, 197-204; in social studies, 327-328
Guidance, conditions essential to, 160-161
Guiler, Walter S., 448
Guiles, Roger E., 327
Gullan, Marjorie, 441; on verse-speaking choirs, 622
Gunderson, Agnes G., on arithmetic terms in readers, 465-466
Gurrey, Percival, 441
Guthe, C. E., 584
Gwynn, J. Minor, 218, 219, 259
Gwynne, Elsie W., 645

Habits, for healthful living, 525, 530-532; in health education, 525, 530-532; in reading, 387-388
Haefner, Ralph, 134, 651, 686
Haggerty-Olson-Wickman Behavior Rating Schedules, 662
Halbert, Marie Goodwin, on reading and pictures, 399
Halligan, A. L., 307, 346
Hall-Quest, Alfred, 289, 295
Hamalainen, Arthur E., 684; on anecdotal records, 93-94
Hamilton, James T., 19
Hamm, A. C., 646
Hand, H. C., 215, 306, 684
Handicapped, physically, emotional health of, 107
Handwriting, 427-429; cursive, 429; diagnosis of, 431, 433; handedness in, 429; manuscript, 427-429; tool, 427
Hanna, Lavone A., 348; on social trends, 297-298
Hanna, Paul, 258, 349
Harap, Henry, 19, 259, 347, 464, 479, 481; on activity arithmetic units, 468-469
Hardy, Martha C., 525, 584; on health evaluation, 668, 669
Harris, A. J., 445
Harrison, M. Lucile, 445
Harrower, M. R., on development of moral judgments, 53-54
Hartley, William H., 293
Hartmann, G. W., on learning, 164
Harvard School of Public Health, 525
Harvey, C. C., 347
Harvey, Mary Lee, on choral speaking, 623
Haste, effect of, on emotional health, 111-112
Hatfield, W. Wilbur, on literature, 622
Hattwick, L. W., 614
Haupt, George W., 318, 491-492, 522
Havighurst, Robert J., 20, 134
Haws, Maggie, on child-study plan, 87-88
Headley, N. E., 521
Headley, Ruth E., 259
Health, 524-585; and the community, 576-580; coördinator, 578-580; Council, 578; emotional, 64-132, 529; evaluation of, 668-669; habits, 525, 530-532; mental, *see* Mental health; program for, 524-527; records, 564-565; responsibility of community for, 576-580; responsibility of home for, 576-578; responsibility of school for, 527-529
Health education, 530-555; evaluation in, 574-580; guiding principles for, 526-527; instructional program for, 530-560; learning experiences for, 533, 542-544, 545-546, 557; objectives, 530; physical education as, 552-555; recreation in, 554-555; topics covered, 533; topics recommended, 534-543; types of programs for, 555-561
Health environment, 527-529
Health examination, 561-568
Health program, 524-527, 530-561; effectiveness of, 525
Health service, 561-574; dental care, 568-569; follow-up in, 569-571; informal observation, 571-574; list of, 524-525; physical examination, 544, 561-568
Hearing, 568
Hector, Kathleen B., on reading programs, 396-397
Height-weight age charts, 565-567
Heil, Louis M., 521
Hein, Fred V., 583
Heisler, Florence, 76
Herrold, Kenneth H., on leadership, 160
Hertz, Marguerite R., on projective techniques, 94
Higher thought processes, development of, 37
Hildreth, Gertrude, 19, 191, 219, 259, 347, 445, 684; in handwriting, 429; on learning to read, 390; on program for the slow child, 105; on reading trends, 381; on reading vocabulary, 397; on spelling words, 423; on thinking, 361
Hilfert, Robert S., on art, 610-611
Helgard, Ernest, 192
Hill, Gerald, 644
Hill, Katherine E., 522; on science objectives, 487
Hill, Ruby L., 268
History, American, 308-309
Hoban, Charles F., 274, 280, 283, 291
Hoban, Charles F., Jr., 274, 280, 283, 291, 293, 294
Hockett, John A., 19, 192, 251, 256, 259, 326, 404, 447, 641; on creative expression, 588-589
Hodgins, W. W., 583
Hoefer, Carolyn H., 525, 584
Hollingshead, A. D., 133, 192, 302
Holmes, Anne Mary, interests of young children, 147
Holmes, Francis B., 133; on children's fears, 311-312
Home and community, relation to emotional health, 128-129
Home and school contact, 128-129
Honloose, James, 567
Hood, Marguerite V., 642
Hopkins, L. Thomas, 133, 192, 207, 219, 259, 302, 347, 642; on atmosphere for learning, 157; on creative music, 607; on

Hopkins, L. Thomas—*continued*
emotional needs, 68; on toy orchestra, 604
Hoppes, William C., on written expression, 419
Horace Mann—Lincoln Institute of School Experimentation, 136
Horn, Ernest, 347, 447; on word list, 422; on writing vocabulary, 421
Horn, Thomas D., on spelling, 424
Horne, Joicey, 644
Horrall, Albion H., 219, 259
Houston, Texas, 319
Howard, Frank E., 135
Howard, Ruth W., on the play interview, 94
Howe, G. F., 281
Huang, I., on causal thinking, 47; on learning, 189
Huber, Miriam Blanton, 445, 646
Huffard, Grace T., 441
Hughes, Byron O., 22; on learning, 174
Hughes, D. T., 554, 581
Human relationship, objectives of, 9; changes to meet, 12
Hungerland, Helmut, 644
Hunnicut, C. W., on reading program, 396
Hurlock, Elizabeth B., 62
Hymes, James L., 133, 547

Ilg, Francis L., 62
Illinois, State Department, 555, 556-557, 559
Independence, place of, in personality development, 75
Individual differences, in rate of mental development, 33; in sex differences in muscular development, 31-32; in transfer of training, 171; provision for, 200
Informal school, opportunities for social development in the, 198
Inskeep, Annie Dolman, 29; on correct seating, 25; on sex differences in physical development, 31
Intelligence, as a factor in language arts, 431, 432; as a factor in reading, 401; effect of subnormal, on personality development, 106-107; effect of superior, on personality development, 105-106; evaluation of, 661-662, 679; findings concerning, 33; *see also* Growth of intelligence
Intelligence tests, 679; differences in, 33; Stanford-Binet, 35-38
Intercultural relations, 305-306
Interest, basic, 150-151; evaluating area of, 143-144; as a factor in learning, 175-176; how to achieve, 138-139; how to develop intrinsic, 142; how to use, 139-140; in relation to effort, 142-144; "magic" of, 137-138; questionnaires, value of, 147-148; subject matter in relation to, 140-141; *vs.* curiosity, 141
Interest Inventory for Elementary Grades, 145
Interests, at various levels, 145-146; development of, in reading, 409-415; development of wide, 12; how to develop, 176; how to locate, 144-148; in reading, 384, 409-417; reading, 384, 409-417; related to achievement, 14-19; science, 485, 492-493; selection of experiences to meet children's, 201; sex, 546; special, 149-150; value of children's questions in determining, 148
International understanding, 303-306, 338-339; rôle of science, 483
Inventories, 665-666
I.Q., constancy of, 38-44
Iowa Test of Basic Skills, 660
Irwin, Elizabeth A., 107
Irwin, Irene I., 647
Irwin, Leslie W., 581

Jackson, Joseph, on reading and emotional adjustment, 402
Jackson, Virgil D., 350
Jacobsen, E. W., 19, 192, 251, 256, 259, 641; on creative expression, 588-589
Jacombe, Grace, 646
Jacques-Dalcroze, Emil, 642; on rhythm, 602
James, Preston E., 281, 295, 347
Janes, Grace E., on situations in arithmetic problems, 473
Janney, J. E., 186, 567, 574
Jansen, William, 282
Janus, Sidney O., on language development and play, 55, 59
Jarvie, L. L., 664
Jenkins, Frances, 442
Jenkins, Gladys G., 133; on social structure, 101
Jenkins, J. W., 273
Jennings, H. H., 133
Jensen, Kai, 242, 350
Jensen, Myrtle R., 448
Jersild, Arthur T., 22, 30, 62, 133, 152, 208, 219, 242, 259, 319, 642; on children's fears, 311-312; on range of children's voices, 602
Jersild, Catherine L., 133, 208
John, Lenore, 481; on errors, 477-478
Johnson, Arthur C., Jr., on delinquency, 161
Johnson, Henry, 482

Johnson, J. T., 459, 480
Johnson, Wendell, 442
Joliet, Illinois, 525
Jones, Archie N., on music, 596
Jones, Arthur J., 259
Jones, Harold E., 683, 684
Jones, Martha June, 521
Jorgenson, A. N., 651, 657, 683, 684
Junior Red Cross, 267

Kainz, Luise, 644
Kallen, Miriam, 251, 259
Kambly, Paul E., 152, 522; on science interests, 147
Kaplan, Louis, on thinking, 361
Kaplan, Milton A., 443
Katz, Barney, 133
Kaulfers, W., 442; on grammar, 418
Kawin, Ethel, on guidance, 160
Kelliher, Alice V., 136; on correct physical regime, 21; on development of reasoning, 46
Kelley, Truman L., 347
Kelly, D. M., 666
Kelty, Mary G., 347
Kenscelle, Hazel Gertrude, 642
Kenyon, John S., 442
Kersta, N. E., 287
Keystone View Co., 276, 277
Kibbe, Delia, 448
Kidd, Elnora L., on writing poetry, 628
Kidd, J. R., 293
Kilpatrick, William Heard, 152, 192, 219, 347
Kinsey, Alfred C., 55, 82, 547
Kirk, Samuel A., 143, 445
Klapper, Paul, 480
Klopfer, Bruno, 666
Knophle, Lawrence C., on composition difficulties, 419-420
Knight, F. B., 473
Knipp, M. B., 482
Knott, Thomas A., 442, 448
Knower, Franklin H., 442
Knowledges, evaluation of, 654, 655
Knox, Warren, 485
Koffka, Kurt, 164
Kohler, Wolfgang, 164
Koon, Cline M., 291
Koopman, G. Robert, 215
Koopman, Margaret O., 292
Kopel, David, 446
Kopp, Helene, on stuttering, 379
Kramer, Grace A., 482
Kramer, Hilde C., on punishment, 177
Krey, A. C., 347
Kuhlmann, F., on cessation of growth of intelligence, 34
Kunst, Mary, on reading and emotional adjustment, 402
Kuster, M. E., on feelings of failure, 179
Kvaraceus, William C., on delinquency, 161
Kwalwasser, Jacob, 642; on music, 600, 601
Kyte, George C., on core vocabulary, 397-398; on children's poetry, 411

La Brant, Lou L., 448; on language development, 56-57; on sentence structure, 419
Lacey, Joy Muchmore, 62; on social concepts, 318
Laird, D. A., 567
Lamkin, Nina B., 547, 576, 582
Lamoreaux, Lillian, 382, 390, 445; on language activities, 364-366; on reading readiness, 389-390
Lanchester, Waldo S., 648
Landis, Mildred M., 644
Lane, Robert Hill, 19, 251, 259, 273, 293, 442, 685
Language, aim, informal standard level of, 360-361; and maturation, 366; and personality, 354-356; cultural levels of, 356-361; opportunities in units, 364-366; thinking a foundation of, 361-363
Language arts, analysis of basic factors in diagnosis of, 431-433; analysis of mechanics in diagnosis of, 433-437; analysis of powers of expression in diagnosis of, 437-438; communication, oral, 368-377; diagnosis in, 430-440; fallacies in diagnosis of, 438-439; guiding principles in, 368; interrelationship of the, 353; related to personality, 354-356; remedial work in, 439-440; techniques of diagnosis, 438; type programs in, 366-368; *see also* Communication, oral, and written; Handwriting, Language, Language usage, Reading, Speech, *and* Spelling
Language comprehension, development of, 37
Language development, 55-58; as a factor of social development, 55; relationship of, to other factors, 55-58
Language diagnosis, 430-440; difficulties interrelated, 430-438; fallacies in, 438-439; remedial work, 439-440; techniques of, 438
Language experiences, purposes of, 352; suggestions for, 363-364; vital, 361-366
Language usage, determination of correct, 356-357; level of, for elementary school, 360; levels of, 357-361; types of errors in, 419-420

Lantz, Beatrice, on reading and emotional adjustments, 402; on success, 179
La Porte, William R., 582; on physical education, 554, 558-560
La Salle, Dorothy, 582
Lashley, K. S., 164
Lawler, Marcella R., 220
Lay participation, 214-215
Lazar, May, 416, 447; on reading interests, 413, 414; on reading interests of truants, 415; on stimulation of reading, 412
LeAnderson, R., 582
Learning, basic conditions of, 172-176; concepts of, 15, 163-167; conditions of, 172-190; conditions of, related to "method," 185-190; conditions of, related to physical aspects, 183-185; conditions of, related to success, 176-183; contrast between modern and traditional schools, 205-206; definition of, 166; for a democracy, 155-162; history of, 163-164; interest a factor in, 175-176; interference in, 171; in terms of drive and reward, 164-165; in terms of process and product, 165-166; meaning a factor in, 173-174, 188-189; method as related to, 185-186; need or purpose a factor in, 172-173; of human relations, 162; physical conditions as a factor in, 183-185; process of, 163-172, 240-241; punishment as related to, 180-181; rate of, 167-168; rate of forgetting as related to, 168-169; resources, 261-295; reward as a factor in, 176-179; success as a factor in, 179-180, 182-183; suitable difficulty a factor in, 174-175; transfer of training, 169-171; *vs.* teaching, 153
Lee-Clark Reading Readiness Test, description of, 660-661
Lee, Dorris May, 382, 390, 445, 447, 478, 479, 640; on reading, 386, 400; on reading readiness, 389-390; on significance of small consistent differences, 210; on spelling, 423-424, 425; on spelling objectives, 425-427
Lee, J. Murray, 252, 347, 447, 478, 479, 640, 651, 660, 661, 668, 671, 673, 674, 681, 685; on diagnosis, 476; on evaluation program, 673-683; on spelling, 423-424, 425; on spelling objectives, 425-427
Lee-Maintenance Drills and Tests in Arithmetic, 478-479
Lee, Margaret, 645
Leebes, Genevieve, on reading and emotional adjustment, 402
Leggett, Dorothy, 349
Lehman, Harvey C., on play development, 58-59
Leining, Edna Bridge, 521
Leland, Bernice, 443
Lemler, Ford, 293
Leonard, J. Paul, 192, 207, 220, 442, 651, 685
Leonard, S. A., on language standards, 356
Levenson, William, 294, 442
Levitan, M., 567
Lewin, Kurt, 584; on democratic set-up, 111; on learning, 166
Lewis, Arthur J., 532, 584; on health recommendations, 534-543
Lewis, B. Rolland, 647
Lewis, Phillip, 294
Library, 289-290; facilities for, 290; techniques, 388
Lighting, 528
Lima, Margaret, on reading interests, 414
Lincoln School, 259
Lindahl, H. M., 271
Lindquist, E. F., on reading comprehension, 406
Lindsey, Margaret, 463
Lippett, Ronald, on democratic schoolroom, 111
Listening, develop ability in, 368-377; in music, 596-599, 609; *see also* Communication, oral
Literature, 621-630; appreciation, 621-622; creative experiences in, 625-629; through verse-speaking choirs, 622-624; what is "good," 416-417
Lloyd-Jones, Esther, 192; on home-school relations, 128
Locke, John, on learning, 163
Lockwood, Betty, 525
Loeb, M. B., 20, 134
Loftus, J. J., 208; on the newer education, 157
Long Beach, Calif., 342
Longview, Wash., 264
Lord, F. E., on skills in geography, 241
Lorge, Irving, 417
Los Angeles, 261
Los Angeles County, 214, 342
Lowdermilk, R. R., 291
Lowenfeld, Viktor, 644
Lowery, Lawson G., on sexual development, 51
Luckiesh, Matthew, 528; on typography standards, 27
Lunches, 544
Lundeen, G. E., 485
Lyda, W. J., 473
Lyman, R. L., 412

Mabie, Ethel, *see* Falk, Ethel Mabie
MacBean, Dilla W., on stimulating reading, 411

McCall, Wm. A., 259, 685
McClure, Worth, on activities, 342-343
McCoard, William B., on good speech, 378
McCormick, Mary G., on health habits, 531
McCullough, C. M., 440, 446
McGrath, Sister Mary, on moral judgments, 54
McIntosh, John Ranton, on learning, 188
McKee, Paul, 412, 416, 419, 442, 446; on language arts, 370-371; on reading skills, 407
MacKenzie, Gordon N., 220
McKim, M. G., 521
Mackintosh, Helen K., 267, 292, 647
McKown, Harry C., 264, 274, 281, 291
MacLatchy, Josephine H., 220, 448, 482; on number readiness, 455
McLaughlin, K. L., 220
MacLean, Malcolm, on delinquency, 161
McNamara, W. J., 686
McNay, A. J., 287
Macomber, F. G., 19, 132, 191, 192, 218, 220, 251, 259
McPharlin, Paul, 648
McSwain, E. T., 195
McWilliams, John, on reading program, 396
Madison, Wis., 213, 484, 556; on writing poetry, 628; science course in, 502, 509-510
Maguire, Hattie, 463
Mallett, Lloyd, 642
Manske, Arthur J., 350
Manuel, H. T., 660
Mapes, Charlotte, 479, 481; on activity arithmetic units, 468-469
Maps, 281-283; reading, 281-282; selection and use of, 282-283
Markey, Frances V., 133
Marks, effect of, on emotional health, 108
Marks, Lewis A., 107
Marshall, Leon C., 316, 347
Martin, Margaret C., 648
Mary Dorothy, O.P., Sister, on reading vocabulary, 397
Mason, Bernard S., 582
Mason, Daniel G., on music, 596
Massachusetts, 525; vision test, 567
Masters, Dexter, 297
Masters, H. B., 268
Mattern, David, on music, 605
Maturation, a factor in language, 366; a factor in learning, 174-175; as a factor in social development, 60
Maturation level, curriculum violations of, 200-201; experiences selected in terms of, 200-201; studies having value for understanding of, 201
Mawhood, N. C., 645
Mayhew, Katherine C., 200
Mead, C. D., 200
Mead, Margaret, on sex differences, 414
Meaning, a factor in learning, 173-174, 188-189; selection of experiences to develop, 202-203
Mearns, Hughes, 647; on creative writing, 625-626, 627
Measurement, *see* Evaluation
Measurements, newer, 657-667
Meece, Leonard, on reading program, 396
Megroth, E. J., on self-evaluation, 183
Meier, Norman C., on art, 613
Melby, Ernest O., 668
Mellinger, Bonnie E., on interest in pictures, 149-150; on pictures, 614
Meltzer, Hyman, on stuttering and personality, 379
Melvin, A. Gordon, 19, 251, 259
Memory, development of, 36, 45
Mencken, H. L., 358
Mendenhall, James E., 207, 219, 447; on art, 614
Mendenhall, Marcia E., on art, 614
Mennes, H. B., 258; on teaching procedures, 251
Menninger, William C., on importance of emotional health, 66
Mental health, effect of school situation on, 529; in health program, 524; or emotional health, 65-66; providing for, 309-313; *see also* Emotional health
Mental hygienics, viewpoint on adjustment, 80-82
Mentally subnormal, emotional health of, 106-107
Mentally superior, emotional health of, 105-106
Meriam, J. L., 220, 258, 260, 349
Merker, Barbara, 648
Merriam, H. G., 647
Merrill, Maud A., 661; on Stanford-Binet, 35, 36
Method, learning related to, 185-190; "modified whole," 185
Metropolitan Study Council, 220
Metter, Harry L., 482
Michaelis, John U., 350
Michigan, 267
Miel, Alice, 213, 215, 218, 220; on curriculum development, 211-212; on curriculum materials, 216
Miles, Robert, 294
Miller, Harry G., 77
Miller, L. W., on teachers' attitudes, 80-81
Miller, Neal E., on learning, 164-165
Milligan, Nancy Gertrude, 220, 641
Mills, C. N., 481
Mills, Winifred H., 648
Minneapolis Public Library, 404

Minnesota, University of, 214, 264, 292
Minor, Ruby, 192, 220, 348, 641
Minotti, Victor, 350
Misner, Paul, 215
Mississippi, state of, 313
Missouri, 249
Mitchel, Edith L., on art, 611-613, 618, 620
Mitchell, Elmer D., 582
Mitchell, John C., on teachers' and mental hygienists' attitudes on adjustment, 77-78, 81-82
Mitchell, Mary Alice, 647; on reading program, 396
Models, 273-274
Modern school, contrast with traditional, 205-210; contribution to democracy, 157-158; demands on teachers of, 17; differences in, 5
Modern School Achievement Test, 678
Modley, Rudolph, 295
Moffett, H. G., on language standards, 356
Mohr, C. L., 348
Monroe, Marion, 431, 440, 446
Monroe, W. S., 482, 522, 685
Moore, Anne E., 443
Moral judgments, development of, 53-55
Moreno, John, 133; on group relations, 49-50; on social structures, 101; on sociograms, 97-98
Morgan, John J. B., 135
Morgan, Muriel, 647
Morgan, Russell V., 642
Morphett, Mabel V., 448
Morrison, J. C., on purpose of science, 483
Morton, John A., 152
Morton, Robert Lee, 480
Mossman, Lois Coffey, 220; balancing activities, 237-238
Moss, Frank K., on typography standards, 27
Motor coördination, development of, 37; *see also* Muscular development
Mott, Sina M., 319, 456
Mount Pleasant, Mich., 308
Moving pictures, 277-281; effects of, 277-278; sources of, 279; suggestions for use of, 278-279, 280; values of, 278
Mulgrave, Dorothy I., 442
Multiplication, errors in, 477
Munn, Norman L., 192; on learning, 166
Munro, Thomas, 645
Murchison, Carl, 58, 60
Murline, C. L., on clinical psychologist, 131
Murphy, Gardner, 62; on order of birth a factor of social behavior, 60-61; on personal and group relationships, 49-50
Murphy, Lois B., 62, 133, 135; on order of birth a factor of social behavior, 60-61; on personal and group relations, 49-50; on psychiatric guidance and intelligence, 41, 85-86; on study of sympathy, 95-97
Murray, Henry, 667
Murray, Josephine, 641
Murray, Ruth, 582
Murray Thematic Apperception Test, 667
Mursell, James L., 152, 192, 220, 641, 643, 685; on creative arts, 588, 594-595; on criteria for subject matter, 140; on music, 595; on school band, 606
Muscular development, 23, 27-32; rate of boys and girls, 31-32; through exercise, 27-28; through rest, 30-31; through use of tools, 28-30
Museums, 273
Music, 595-610; appreciation of, 597-598; children as performers of, 599-606; creative, 606-610; experiencing rhythm in, 602-603; in the school, 596; listening to, 596-599; purposes of, 595-596; radio, 598-599; range of children's voices, 602; reading of, 600-601; rhythm band, 603-605; rote learning, 599, 600; school bands and orchestras, 605-606; toy orchestra, 603-605; trends in, 607-610; "unmusical" child, 601
Music Educators National Conference, 643
Mutuality, basic need, 77-79

National Association of Secondary School Principals, 308, 346
National College of Education, 260
National Committee on Science Teaching, 484
National Conference on Research in Elementary English, 447-448
National Council for the Social Studies, 304, 305, 307, 308, 345, 348, 685
National Council of Teachers of English, 442, 490; on correctness, 356; on social-studies concepts, 320
National Council of Teachers of Mathematics, 293, 480
National Education Association, 303, 348, 581, 582; on international understanding, 304-305; on health, 544, 545, 547, 561-563, 575, 576, 578
National Education Association, Department of Superintendence, *see* American Association of School Administrators
National Safety Council, 548-549, 582
National Society for the Study of Education, 62, 133, 192, 193, 216, 220, 222, 241, 260, 281, 289, 293, 295, 319, 345, 348, 362-363, 381, 382, 384, 391, 392, 393, 416, 440, 442, 446, 458, 480, 484, 485-489, 510, 517,

518, 520, 521, 553, 582, 594, 641, 643, 645, 651, 668, 680, 683, 685
Needs, acceptance with respect, 73; Adventure, 76-77; basic, 14-15; basic emotional, 67-79; contact and harmony with reality, 75; factor in learning, 172-173; increasing self-direction, 75; interest based on, 138-139; mutuality, 77-79; recognition, 72; responsibility for group through democratic processes, 79; Security, 69-71; selection of experiences to meet children's, 201, 310-313; sense of personal worth, 69-77; social contribution, 77; status with peers, 74; success, 71; sympathetic understanding, 72-73; work in we-relationship, 78-79
Nemec, Lois G., 260
Nemzek, Claude L., on music, 596
Nervousness, 567
Neuner, Elsie Flint, 521
Newcomb, Theodore M., 62, 133; on order of birth, a factor of social behavior, 60-61; on personal and group relationships, 49-50
Newspapers, suggestions for school, 271-273
New York, 208
New York State, 267, 484, 531; Education Department, 292, 348, 555, 556; objectives of elementary education of, 652-656
Nicholas, F. W., 645
Nimkoff, Meyer F., on children's friendships, 51-52
Noar, Gertrude, 260
Noll, Victor H., 521
Non-verbal intelligence measurement, 33
Norfolk, Virginia, study on personality adjustment, 86-87
North Carolina, 484, 517, 559
Norton, John K., 640
Norton, Margaret Alltucker, 640
Novokovsky, Gertrude, 287, 442
Number concepts, development of, 37
Number experiences, course built on, 469-472; suggestions for, 460-466; *see also* Arithmetic
Nurse, school, 569-571
Nutrition, 525
Nyswander, Dorothy B., 525, 564, 565, 575, 579, 583, 584

Oakden, E. C., on children's time concepts, 44
Oberholtzer, E. E., 207, 218, 220
Oberteuffer, Delbert, 544, 575, 576, 583; on criteria for health experiences, 545-546; on health instruction, 530
Objectives, 3-18; as values, 5-6; broad, 225; curriculum changes to meet, 5, 10-16; Educational Policies Commission's list of, 8-10; effect on social studies, 296-297; evaluation of, 208-210, 246-249, 651-657; evolve from society, 5, 297-300; evolve from the child, 3-4; implications of, 10-11; in health, 524, 530; in science, 486-487, 512-513; of New York, 452-456; of safety, 551; of Seattle, 336-337; previous formulations of, 8-9; realization of, 4-5, 15-16; selection of reasonable, 246-249
O'Donnell, Mary P., on creative dancing, 638
Ogden, R. N., 164
Ohio, 484, 496, 502, 504-505
Ohio Acceptance Scale, 101
Ohio Recognition Scale, 99
Ohio State University, 133
Ojemann, Ralph H., 350; on personality adjustment, 86; on rating scale for insecurity, 83
O'Keefe, Pattric R., 554, 583; on physical development, 553
Olsen, Edward G., 220, 262, 265, 268, 292, 307, 348
Olsen, Pauline W., 261
Olson, Clara M., 292, 307, 348, 508
Olson, Willard C., 22; on learning, 174
O'Neill, Florence C., 583; on health habits, 531
Opinions, in curriculum improvement, 215
Oral expression, development of, *see* Communication, oral
Orata, Pedro T., 192; on transfer of training, 169
Orchestra, 605-606; toy, 603-605
Order of birth, as a factor of social development, 60-61
Oregon, 484, 502, 506-507
Orth, F. W., 220
Otto, Henry J., 20, 220, 582
Outcomes, *see* Objectives
Outlines, *see* Unit outlines
Over-age pupils, emotional health of, 104-105

Page, M. L., on leadership, 162
Painter, Florence M., 643
Palmantier, Paul C., on emotional health for teachers, 122
Palmer, Richard, 294
Pangburn, Weaver Weddell, 582
Parents, 555, 563
Parker, Bertha M., 485

Parker, J. C., 260; on guiding principles in science, 493
Parr, Frank W., on reading and emotional adjustment, 402
Participation, 13-14; in activities, 229
Parton, Daisy, 503
Pasadena, Calif., 254, 342, 597; on music, 601; science course in, 502, 508, 510, 513-516
Paterson, Donald G., 27
Patrick, Catherine, 152
Patry, Frederick L., 135
Patterson, S. C., on child-study plan, 87
Patty, W. W., 582
Pavlov, 163
Payant, Felix, 645
Pearce, N. O., 582, 546, 547
Pearson, Ralph M., 645
Peck, Leigh, on teacher adjustment, 119
Percentage errors in, 478
Performance tests, 682
Perham, Beatrice, 643
Perkins, Francis T., 164; on development of reasoning, 47; on learning, 174
Personal problems, 12
Personal relations, 309-313
Personal worth, sense of, 69-77
Personality, adjustment of teacher's, 118-123; and creative art, 620-621; and creative writing, 629; and dramatic play, 630, 632-633; and language, 354-356; and reading, 382; and rhythmic expression, 638-639; definitions of, 64 (footnote); effect of administrative policies on, 104-109; effect of curriculum on, 109-112; effect of home and community relationships on, 128-129; effect of teachers on, 112-128; environment and, 65; evaluation of, 662-667; factors which influence, 21-22; problems, direct approach to, 129-132; relation of size to, 24; satisfaction of needs basis for adjustment, 67, 69-79; school's responsibility for developing, 67; symptoms of maladjustment, 83-86
Personality development, through physical education, 552; *see also* Personality *and* Social development
Personality tests, 662-667
Peterson, Ruth C., 326
Phelan, Annette M., 584
Philosophy of education, suggestions for developing, 215-216
Phonics, 383
Physical conditions, as a factor in learning, 183-185, 525-527; symptoms, 572-573
Physical development, experiences for, 200
Physical education, 552-555; basis for organizing, 553-554; basis for recreation, 554-555; types of programs for, 558-560
Physical examination, 561-568; *see also* Health service
Physical factors, in diagnosis of language arts, 431-432
Physical handicaps, effect of, on personality, 107
Piaget, Jean, on children's thinking, 45-46; on moral judgments, 53
Pictures, 274-281; children's interests in, 149-150; criteria for judging, 275; a file for, 275; purpose of, 274; sources of, 279
Pidge, Florence E., 623, 647
Pierce, Bessie Louise, 288
Pintner, R., 665
Pistor, Frederick, 683, 685; on evaluation of reactions, 657-659
Pitluga, George E., 521
Pitts, Lilla Belle, 643
Plan book, use of in units, 227, 229
Planning, basis for, in a unit, 230, 242-246; during the unit, 231-233; evaluation, 673-674; extent of, in a unit, 242-246; in the unit, 232-233, 242-246; need for teacher, 202, 212-216; pupil participation in, 230, 231, 233, 244; pupil-teacher, 230, 231; unit in advance, 243-244
Plant, J. S., 134
Play, development as a factor of social development, 58-59
Polkinghorne, Ada R., 455, 456, 482; on handwriting, 429
Pooley, Robert C., 442, 448; on language levels, 357-361
Port Arthur, Texas, 332-334
Porter, William A., 286
Posture, relation of physical training to, 24, 25; relation of seating to, 24-25
Potter, Gladys L., on language and social competence, 354
Power, interest based on, 138-139
Praise, as a factor in learning, 176-183
Prescott, Daniel A., 21, 22, 134, 661, 665; on child-study plan, 88-91; on emotional needs, 68-69; on understanding children, 95
Pressey, S. L., 186, 567, 574
Preston, Everett C., 584
Price, Roy A., 350
Prichard, Elinor, in rating scale for insecurity, 83
Principals, rôle of, in a unit, 227
Principles, guiding, *see* Guiding principles
Problems of children, recognition, by teachers, 79-83; recognition, guides for, 83-86; recognition, school practices in,

86-93; recognition, techniques for, 93-104; use in science, 502-503
Problem-solving, and oral communication, 370; general steps in, 473; improving, 474
Program, social studies, *see* Social-studies programs; *see also* Schedule
Programs, 269-270; in creative experiences, 594-595; types of, in language arts, 366
Progressive Achievement Test, 659, 678
Progressive Education Association, 228, 484, 662-663
Projection, 277
Projective techniques, 94, 666-667
Projectors, micro, 277; opaque, 277; stereoscope, 277
Punishment, as a factor in learning, 176-179, 180-181
Pupil planning, *see* Planning
Pupil reactions, evaluation of, 213, 657-659
Purpose, a factor in learning, 172-173; place of, in emotional health, 109-110
Purposes, of creative experiences, 591-594; of language experience, 352; selections of experiences to meet children's, 201, 221
Pyle, W. H., 643

Quant, Leslie, on handwriting, 429
Quantitative thinking, development of, 149-153
Quillen, James I., 254, 260, 348; on social trends, 297-298
Quinn, Ruth, 287

Radio, 283-288; as a supplement, 284-285; available programs, 284; equipment, 286-287; for music, 598-599; out-of-school listening, 283, 284; suggestions for use of, 285; teaching listening to, 285, 598-599; transcriptions, 286-287
Ragland, Fannie J., 442
Ragsdale, Clarence E., 191, 219, 259; on transfer of training, 170
Ralph, H. Thoburn, on improvement in adjustment, 668-669
Ramsey, Eloise, 446, 647
Ramsey, Grace F., 295
Randall, J. A., 652
Rasey, Marie I., 134
Rasmussen, Carrie, 442
Rating scales, 662-664
Raths, L. E., 220; on developing thinking, 362; on social acceptance, 103; on test of emotional needs, 93
Raubicheck, L., 442
Read, Herbert, 645
Readiness, number, 454-456; reading, *see* Reading readiness
Reading, 381-417; and personality, 382; appreciation, 387-388; attitudes, habits, and skills in, 387-388; balanced situation, 385; book lists, 415-417; characteristics of a good program, 386-387; correlations with arithmetic, 465-466; criteria of selecting, 415-417; development, stages of, 388-393; developmental, 384, 403-404; developments in teaching of, 381-385; diagnosis in, 399-403, 431, 435-437; diagnosis of oral, 435-436; diagnosis of silent, 436-437; factors in interest, 412-415; for critical thinking, 405; for understanding, 405-406; functional program, 396-398; fundamental concepts, 386-393; interests, 384, 409-417; library techniques, 388; mechanical aids, 398; music, 600-601; opportunities for, in units, 361-366; oral, 385, 387; pictures and, 399; phonics in, 383; planned experiences, 396-397; problems in teaching, 385-386; rate, 406; records in, 672; relation of other language arts to, 353; remedial, 403-404; selected book lists for, 415-416; sex differences, 398-399; standards in, 394-395; time devoted to, 395-396; to locate material, 407; to organize material, 408; to remember, 408-409; to select and evaluate material, 408; typography most effective for, 26-27; visual difficulties, 401; vocabulary development in, 393-394; vocabulary, low, 397-398; work-type, 388
Reading interests, 384, 409-417
Reading readiness, 382, 389-390; evaluation of, 660-661
Reality, contact and harmony with, basic need, 75
Reasoning, development of, 45-47
"Recitation," a factor in learning, 186-187
Recognition, basic need, 72
Recording, activities participated in, 229; units covered, 227, 229
Recordings, 286-287
Records, anecdotal, 88-91, 93-94; for physical examination, 564-565; use of, in emotional health, 108-109; *see also* Cumulative records
Recreation, 554-555
Redl, Fritz, 62, 134, 193; on discipline, 125-126; on problem behavior, 108; on traits of teachers, 121
Redmont, Robert S., on reading and emotional adjustment, 402
Reed, Mary F., on effect of teachers' personalities, 118

Reeder, Edwin H., 220, 283; on concept of study, 242
Reese, Dora, 443
Reid, Surley, 349
Relations, human, can be learned, 162
Relationships of children from sociometric measures, 102-103
Remmers, H. H., 651, 657, 683, 685
Renshaw, Samuel, on the tachistoscope, 398
Repetition, a factor in learning, 187, 188-189
Reports, value of visual aids in, 213
Resources, 203; audio visual, 273-288; chart of, 262; community, 263-268, learning, 261-295; persons as, 266; variety, 230
Resource units, 224, 254-255, 342, 556
Respect, acceptance with, basic need, 73
Responsibility for group through democratic processes, 79
Rewards, as related to learning, 164-165, 176-179
Rhodes, A. E., 685
Rhythm, in music, 602-603; band, 603-605
Rhythmic work, 636-639; basis of, 637; evaluating, 639; values of, 638
Rich, Frank M., on discipline, 159; on learning, 189
Richardson, Beatrice E., 649
Richardson, H. D., 260
Riess, Anita, 482
Riley, D. L., 644
Ringle, A. L., 583
Rinsland, Harry Daniel, 685; on basic vocabulary, 422
Rissland, L. G., on learning, 177
Rita Cecile, O.P., Sister, on reading vocabulary, 397
Robbins, Samuel D., 443
Roberts, Alvin B., 264, 274, 281, 291
Roberts, Holland D., 442
Robertson, Martin L., 490, 522
Robinson, Helen M., on reading difficulties, 400
Rodgers, Elizabeth G., 585
Rogers, Carl R., on mental health problems, 84-85
Rogers, James Frederick, 565, 571, 573, 583
Rorschach Test, 666
Rose, Mary Swartz, 583
Rosenquist, Lucy L., 480
Ross, Alan, 294
Ross, C. C., 651, 657, 683, 685
Rothney, John W. M., 23, 24, 33, 40, 41, 566; on learning plateaus, 168
Royce, Josiah, on teacher attitude, 131-132
Rue, Eloise, 404, 446
Rugen, Mabel E., 575, 583
Rugg, Harold, 20, 220, 348, 641; on attitudes, 326; on social concepts, 320-321, 323
Russ, Oscar, 547
Russell, David H., 268, 441, 446; on critical thinking, 405; on reading, 395
Russell, David W., 487, 522
Russell, Mable, 645
Russell, Ned M., 458, 482, 483
Ryan, W. Carson, 135, 641
Ryans, David G., 192

Sacks, Georgia May, 685; children's relationships, 103
Safety, 548-551, 556-557; education, 548-551; objectives, 551; patrols, 550-551; sources of accidents, 548-549; teaching of, 549-550; types of programs for teaching, 556-557
Salisbury, Rachel, 170, 191, 219, 260
Salt, E. B., 583
San Diego, Calif., 261; on interrelation of language arts, 353-354; on language experiences, 363-364
Sandin, Adolph A., on adjustment of nonpromoted pupils, 105
Santa Clara County, 462-463
Sargent, H., 683, 685
Saunders, C. M., 134
Saunders, Katherine M., 443
Schaaf, William L., on problem solving, 474
Schaefer-Simmern, Henry, 645
Schedule, 255-257; criteria of a, 255; daily, for units, 257; of radio listening, 285-286; samples of, 256-257
Schmidt, Bernadine, 42, 43
Schneideman, Rose, 134, 302
Schoen, Max, 643
Schoobs, Nahum E., on children's relationships, 103
School journey, 264-265
School lunches, 544
School plant, for healthful living, 525-527
School situation, and creative activity, 589-591; and health, 527-529
School's responsibility, as to social development, 61; for radio listening, 599; for recreation, 554; to the "eight to twelves," 52-53
School's responsibility in developing emotional health, 67, 69, 70, 71, 73, 74, 76, 78, 79; through administration, 104-109; through direct approach to personality problems, 129-132; through home and community relations, 128-129; through teachers, 112-128; through the curriculum, 109-112

School's responsibility in developing moral judgments, 54-55
Schultz, E. J., 642
Schwamm, Gustave, on speech problems, 378
Schwendener, N., 585
Science, 483-523; a way of thinking, 485; guiding principles in, 493-195; objectives in, 486-487; purpose of, 483-489; social implications of, 483-484, 513-516
Science concepts, 484, 488-492; courses illustrating, 506-512; development in, 490-492, 495-496; lists of, 488-489, 507
Science courses, 500-517; background for, 503-504, 509-510; in California, 503-504, 512-513; in Cleveland, 505-506; in Glens Falls, 507-509; in Florida, 516-517; in Fort Worth, 510-512; in Madison, 509-510; in North Carolina, 517; in Ohio, 504-505; in Oregon, 506-507; in Pasadena, 513-516; in Utah, 506; plans of organization, 226, 500-517; using children's problems, 502-503; using concepts, 506-512; using outcomes, 512-513; using social studies, 513-516; using understandings, 504-506
Science experiences, 495-500; lists of, 496-499; organization of, 500-517
Science equipment, 517-519
Science interests, 485, 492-493; evidence on, 493; of individual classes, 492
Scientific thinking, development of, 485, 495-496
Seagoe, M. V., on learning, 185
Sears, Robert R., 193; on success, 179
Seashore, Harold G., on frustration, 160
Seattle, 247, 254, 279; on freedom within goals, 336-337
Seay, M. F., on reading program, 396
Security, basic need, 69-71; rating scale for, 83
Seeds, Corinne, 647
Seegers, J. C., 448
Segel, David, 686; on cumulative records, 671-673
Sehon, Elizabeth, 554, 583
Self-confidence, through success, 110
Self-control, place of, in democratic living, 158-160; place of, in personality development, 75
Self-direction, basic need, 75
Self-expression, 591-592
Self-realization, objectives of, 9; change to meet, 11-12
Selkirk, Theodore K., 552, 581
Sergent, Nellie B., 647
Service, health, *see* Health service
Sequence, 329-331; methods of providing, 226-227
Seymour, Rose, 443
Sex differences, in causal thinking, 47; in development of muscular control, 31-32; in language development, 56-57; in play, 59; in reading, 398
Sex education, 546-548
Shacter, Helen, 133
Shaefer, Mary S., 554, 583
Shaffer, Laurance Frederick, 135; on discipline, 125
Sharman, J. R., 583
Shaw, Fannie B., 564
Sherman, Mandel, 135
Sheviakov, Geo. V., 134, 193; on discipline, 125-126; on problem behavior, 108; on traits of teachers, 121
Shores, Louis, 522
Shotwell, Anna M., 683, 686
Shryock, Clara M., 282
Shumaker, Ann, on dramatic play, 634
Significance, criteria for judging of unit, 227-228
Simmons, Katharine, 566
Simmons, Madeline, 670; on personality adjustment, 86
Simon, Clarence T., 443
Skeels, Harold M., 40, 63
Skills, diagnosis of, 239-240; evaluation of, 209-210, 654-655; in reading, 387-388; in social studies, 241, 323-326; related, 239; unrelated, 239
Skinner, Chas. E., 135
Skodok, Marie, 40, 62, 63
Slavson, S. R., on democratic control, 159
Slides, 276-277; production by children, 276
Sloan experiment, 307-308
Small, Arnold M., 643
Smallenburg, Harry, 686
Smiley, Dean F., 583
Smith, Anita M., 461
Smith, Charles A., 448
Smith, David Eugene, 480
Smith, Donnal V., 260
Smith, Dora V., 419, 439, 443; on thinking and expression, 375
Smith, E. R., 651, 657, 662, 683, 686
Smith, Henry L., 482
Smith, Milton, 649
Smith, Nila B., 446, 460; on arithmetic in first grade, 455-456; on reading texts, 381
Smith, Robert C., 532-533
Smith, Samuel, 220
Smoke, Kenneth L., on learning, 187-188
Snellen chart, 567
Snoddy, G. S., on the learning curve, 167-168
Snyder, William U., 118

Social attitudes, 326-327
Social changes, 6, 297-300
Social climate, 95
Social concepts, 317-323; concepts concerning, 323; courses based on, 330-335; development of, 318, 323; difficulty of, 318-319; elaboration of, 321-323; lists of, 320-321
Social contribution, need for, 77; possibilities of, 266-267
Social development, at various age levels, 50-53; experiences for, 198, 266-267; friendships, 53; influenced by culture, 59-60; in language development, 55-58; in moral judgment, 53-54; in play development, 58-59; related to maturation, 60; related to order of birth, 60-61; research on, 49-50; school's responsibility for, 61; size of group related to, 50-51; the "gang" and, 52-53; *see also* Personality development
Social functions, 316-317; courses based on, 329-330; lists of, 314-316
Socialization, responsibility of teacher, 14, 78; lack of, a serious problem, 77
Social problems, list of, 314-316
Social processes, 316-317
Social relations, 313-316; evaluation of, 652
Social situations, 296, 309-317; personal relations in, 309-313; social relations in, 302-303, 313-316
Social studies, 296-350; controversies in, 309-310; correlations with arithmetic, 464-465; democratic living, 302-303; development in, recent, 301-309; experiences in, 305, 340-343; guiding principles in, 327-328; purpose of, 296; science experiences in, 513-516; skills in, 241, 323-326, 337; teaching procedures in, 343-345; types of activities in, 340-343; understandings, 317-323; *see also* Social-studies programs; purpose of
Social-studies programs, agreements in, 329; based on concepts, 330-335; based on functions, 329-330; based on goals, 336-337; combining processes, functions, concepts in, 316-317, 335-336; factors in, 300, 316-317; improvements in, 301; in international understanding, 303-305, 338-339; in Latin America, 338; of Baltimore, 330-332; of Bay City, 339-340; of Beloit, 334-335; of Burbank, 330-331; of East Greenwich, 338; of Fresno, 330-331; of Port Arthur, 332-334; of Seattle, 336-337; of Texas, 335-336; of Virginia, 330-331; overview of, 316-317, 339-340; types of, 328-340
Social understandings, 304, 317-323, 336-337
Social values, 202, 298-299, 302-303
Socialized activity, a factor in learning, 186-187
Socializing experiences, 198, 266-273, 305, 340-343; *see also* Assemblies, Clubs, Newspapers
Sociogram, 97-99
Sociometry, 94-104, 667; acceptance scale, 101; children's relationship from, 102-103; "guess who" technique, 99-101; observational technique, 95; reliability, 101-102; social climate, 95; sociogram, 97-99; validity, 101-102
Sones, W. W. D., on reading and pictures, 399
Speaking, diagnosis of, 431, 433-434; relation of other language arts to, 353; *see also* Communication, oral
Specimens, 273-274
Speech, 368-380; problems of, 377-380; voice, a factor in, 377-378; *see also* Communication, oral
Speed, in arithmetic, 476-477
Speer, Robert K., 220
Spelling, 420-427; criteria of selecting words, 421-423; diagnosis of, 433; number of words, 421, 423-424; possible outcomes, 424-427; relation of other language arts to, 353; teaching methods, 424; use of rules in, 423
Spiritual values, 303
Spitzer, H. F., 467, 481; on quantitative thinking, 452
Spokane, Wash., 279, 484
Springer, N. Norton, on effect of cultural background on social adjustment, 60
Stake, Stuart, on social analysis, 100
Standardized tests, 679-680; criticisms of, 678
Stanford-Binet Intelligence Scale, 35-38
Stanford University, 306, 348
Starr, A. S., 136
Status with peers, 74
Stephens, on reward and punishment, 176
Stereograph, 277
Stern, Catherine, 481
Sterner, Alice, 443
Stevens, B. K., 583
Stevenson, Elizabeth, 547, 583
Stewart, Dorothy H., on types of assignments, 158
Stiles, Frances S., 312
Still films, 276-277
Stinchfield, Sara M., 443
Stinebaugh, Virgil, 425
Stoddard, George D., 63, 310; on children's thinking, 46
Stokes, Gertrude S., 643
Stolz, Herbert R., 583

Stone, Clarence R., on reading vocabulary, 397
Stone, Mildred B., 453, 481
Stopler, J. R., 294
Storen, Helen, 215, 221
Stotlar, Carolyn, 456
Strang, Ruth, 63, 134, 136, 193, 440, 446, 583, 686; on attention, 45; on reading and intelligence, 401; on remedial reading, 404; on sex differences in development of attention span, 31
Stratemeyer, F. B., 20, 218, 220, 521
Stratton, George M., on emotion and disease, 574
Strauss, L. Harry, 293
Strayer, George D., 583
Stretch, Lorena B., 260
Strickland, Ruth G., 251, 260, 643; on readiness for learning, 175; on unit planning, 243-246
Strond, J. B., on administrator and teacher adjustment, 122
Study, a factor in learning, 186
Study skills, evaluation of, 659-660; in geography, 241; in social studies, 324-325
Study techniques, 240-242; changed concept of, 242
Sturt, Mary, on children's time concept, 44
Subject-matter, for health program, 533-543; selection of, in relation to interest, 140-141; units of, 222-224; *see also* Courses in various subjects
Subtraction, errors in, 477
Success, as a factor in learning, 176-183; basic need, 71; knowledge of, as a factor in learning, 182-183; selection of experiences for, 204
Sullivan, E. L., 661
Sullivan, Helen Blair, 662
Summer, Harrison B., on use of radio, 373
Superstitions, 517
Sutherland, Ethel, 473
Sutton, Rhoda, 649
Swift, G. A., 647
Sylvester, Emmy, on reading and emotional adjustment, 402
Symonds, Percival M., 135, 136, 152, 193, 310, 651; on children's thinking, 46; on evaluating teacher personality, 123; on projective techniques, 91
Sympathetic understanding, basic need, 72-73

Tacoma, Wash., 279, 390, 555
Talking, develop ability in, 368-377
Tannahill, Sallie B., 645; on fine arts, 614, 618, 620
Tasch, R. T., 152
Taylor, E. H., 481
Taylor, Ethel R., 649; on puppetry, 634
Taylor, J. Y., 294
Taylor, Katherine Scott, 643
Teaching procedures, in social studies, 343-345; in units, 249-251
Teacher-made tests, 680-681
Teachers, activities to be performed by, 251; adjustment of, 118-125; arithmetic studies by, 463; attitudes of, 123-125; background material for in science, 503-504; demands on, 17; desirable attitudes for, 123-125; effect of attitudes of, 78; effect of, on emotional health, 112-128; furnishing with experiences, 214; health, 120; helps in science, 516-517; improvement of, in service, 212; personality of, 120-121; qualities for good, 120-121; relation of, to creative activity, 590-591; responsibility of, *see* School's responsibility; rôle of, in a unit, 216, 227, 240, 242-246, 249-251, 344-345; rôle of, in health, 563-564, 569-576; viewpoint of, on adjustment, 79-83; widening background of, 342-343
Techniques, "guess who," 99-101; in child study, 93-104; in social studies, 323-326; observational, 95; projective, 91
Telebinocular, 567
Television, 287-288
Terman, Lewis M., 661; on reading interests, 414; on Stanford-Binet, 35, 36, on vocabulary development, 55
Test of Critical Thinking, 660
Test of Study Skills, 660
Testing programs, deficiencies of, 674; elements in, 673-682
Tests, for diagnosis, 675-678; function of, 678-679; improper use of, 674; intelligence, 661-662, 679-682; performance, 682; personality and adjustment, 93, 662-667, 681; reading readiness, 660-661; standardized, 679-680; teacher-made, 680-681; uses of, 679-682
Texas, 464; on arithmetic course, 467-468; on language-arts program, 367; on social-studies activities, 340-342; on the social-studies program, 316-317, 335-336
Textbooks, *see* Books
Thinking, 170, 203-204; and clear expression, 375; as foundation of language, 361-363; diagnosis of, 431, 437
Thomas, John S., on the elementary newspaper, 271-272
Thompson, Merritt M., 248
Thorndike, E. L., 63, 193, 448; on cessation of mental growth, 35; on learning, 163, 164, 188-189; on punishment, 176, 181; on transfer of training, 169

Thorndike, R. L., 208, on newer education, 157
Thorp, Mary T., 281
Thorpe, Louis P., 63, 134, 152, 443, 665; on basic needs, 68, 77
Thought processes, selection of experiences to utilize, 203
Thralls, Zoë A., 283
Thurstone, L. L., 326
Tiegs, Ernest W., 651, 659, 661, 665, 683, 686
Tilley, T. Earl, 641; on art, 617
Time concept, development of, 44
Tinker, Miles A., 27, 448
Tippitt, James S., 251, 260
Tolleris, Beatrice K., 443
Torgerson, T. L., 664, 668, 686
Torgerson Pupil Adjustment Inventory, 664, 668-669
Traditional school, contrast with modern, 205-210; failures of, 204-205; units of, 223-224
Transcriptions, 286-287
Transfer of training, 169-172
Traphagen, Virginia, 135
Traxler, Arthur E., 440, 446, 448; on controlled reading, 398
Trilling, M. B., 645
Trolinger, Leila, 275, 293
Trow, Wm. Clark, conflicting codes of morality, 55
Tryon, Caroline, on sociometric measurement, 102
Tryon, Rolla M., 350
Tuckman, Jacob, on learning, 181
Tulsa, Oklahoma, on oral language, 372
Turner, Clair E., 544, 583
Tyler, E. I., 583
Tyler, I. Keith, 294, 443, 641
Tyler, Leona E., 63
Tyler, Ralph, 193, 651, 657, 662, 678, 683, 686; on educability, 154-155
Type, most effective for reading, 26-27

Uhl, W. L., on reading interests, 414
Underage pupils, emotional health of, 105
Underhill, Orra E., 521
Understandings, development of, in science, 495-496, 504-506; *see also* Concepts *and* Social concepts
UNESCO, 303-305
United Nations, 303-305
Units, 222-260; activities in, 234-238; approaches to, 230-231; background needed for, 230-231, 503-504; child participation in activities of, 229; continuity in, 226-227; culminating activities of, 234, 269-270; definition of, 222; definition of series of, 24; desirable characteristics of, 224-230; development of, 230-234; diagnosis in, 239-240; differences in, 223-224; evaluation in relation to purpose of, 246-247; evaluation of, 224-230, 246-249; evaluation of, by children, 249; experience, 223-224; formulation of problems, 230-232; illustration of significance of, 228; in science, 500 517; language opportunities in, 361-366; log, 224; need for authenticity in, 230; outlines, 252-255; outline of, emphasizing outcomes, 248; planning, 230, 231-232, 242-246; presentation of findings, 233; procedures, overview of, 235; purpose, 221-225; requiring teachers to write, 216; research period, 232-233; resource, 224, 254-255, 342, 556; rôle of teacher in, 227, 249-251, 344-345; sequence in, 226-227; sequence of illustration of, 226-227; significance of material in, 227-228; skills in, 238-240; study techniques in, 240-242; teaching procedures in, 249-251; teaching procedures in social studies, 343-345; traditional, 223-224; types of, 222-224, 467-469; use of plan book in, 227, 229; values of children's questions in, 146-148; variety of activities in, 234-238; within child's comprehension, 225; work period in, 232-234; writing of, 216-217, 224; *see also* Activities *and* Planning
Unit classifications, suggested on two bases, 222-224
Unit outlines, 252-255; advantages of listed, 254; developed by teachers, 253-254; from Burbank, 252-253; from Fort Worth, 510; from Glens Falls, 508; from Madison, 509; from Wauwatosa, 253-254; of resource units, 254-255; terms used in, 252
Unit scales of attainment, 679
University, Chicago, 382, 521; Florida, 307; Kentucky, 307; Oregon, 547; Vermont, 307
Updegraff, R., on feelings of failure, 179
Upton, Clifford B., 454
Utah, 484, 506, 507
Uttley, Marguerite, 241

Values, social, 202, 302-303
Van Alstyne, Dorothy, 663; on relation of vocabulary development to other factors, 57
Vancouver, 264
Van Engen, H., 482
Van Fossen, G. R., 583
Van Til, William, 268, 347

Van Wagenen, M. J., 661
Verse-speaking choirs, 622-624
Veverka, M. Madilene, 205
Vickery, Wm. E., 349
Vicklund, O. U., 517
Viewmaster, 277
Vincent, E. Lee, 28, 62, 132
Virginia, 313, 321; on social functions, 329-331; on sequence, 226; on social-studies abilities, 241, 325; on social-studies attitudes, 326-327
Vision, 567-568
Visual aids, 273-288; in health, 544-545; in science, 517-519; need for careful selection of, 274; *see also* Moving pictures, Pictures
Vocabulary, development in reading, 393-394
Voice, in oral communication, 377-380; problems of low, 397-398; teacher's, 377-378
Volberding, E., 152
Vonqualen, Vivian D., 152; on science interests, 147
Voorhis, Thelma G., 443
Vuchetich, Frank, 431

Wahlstrom, Ebba L., 460
Waller, C. H., on projective technique, 91
Walraven, Margaret K., 289-295
Wanamaker, Pearl A., 583
Ward, Winifred, 619
Warner, W. L., 20, 134
Warren, Constance, on discipline, 159
Warren, Dorothy E., on business practices of children, 460-462
Washburne, Carleton, 201, 418, 457-459, 481
Washburne, V. Z., on self evaluation, 183
Washington, state, 267, 484, 561, 577, 578
Washington State College, 279
Waterman, Elizabeth, 649
Watson, Goodwin B., on personality and athletics, 552
Watson, John B., on learning, 163
Watts, A. F., 63
Wauwatosa, Wis., 313, 668-669; unit outline used in, 253-254
Way, Katharine, 297
Webb, Jean, 645
Webb, L. W., 683, 686
Webster Grove, Missouri, 463
Weedon, Vivian, 418, 653; on determining interests, 145
Weeks, Ruth Mary, 320, 349, 490
Weinman, Constance, 295
Weight, 565-567
Weitzman, Ellis, 686
Weller, Florence, 521
Wellman, Beth L., 63, 310; on children's thinking, 46; on constancy of I.Q., 38; on social development, 49
Wells, Harrington, 521
We-relationship, work in, basic need, 78-79
Wesley, Edgar B., 291, 328, 349; on social concepts, 321; on study skills, 324-325
West, Joe Young, 493
West, Robert, on speech problems, 378
Wetzel, Norman C., 567
Wetzel Grid, 567
Wheat, H. G., 481, 482
Wheatley, J. M., 584
Wheeler, Edith, 603
Wheeler, Lester R., on newspapers, 399
Wheeler, Raymond H., 164; on development of reasoning, 47; on learning, 174
Wheeler, Viola D., on newspapers, 399
Whelan, Dorothy Clement, on discipline, 160
Whipple, Gertrude, 281, 289, 295, 350; on criteria for reading program, 386; on types of activities, 236
White, Helen M., 473, 481
White, R. K., on democratic schoolroom, 111
White House Conference, on development of muscular control, 31
Whitford, W. G., 645
Wickiser, Ralph L., 645
Wickman, E. K., on teachers' attitudes on adjustment, 77-78, 80, 81
Wiechard, Angela, 649
Wiles, Kimball, on use of radio, 374
Wilkinson, Frances R., on personality adjustment, 86
Willey, R. D., 283, 285, 291, 462; on use of radio, 373, 481
Williams, C. L., 266
Williams, Jesse F., 564, 584
Williamson, Arleigh, on speech problems, 380
Willing, Matthew H., 252, 438
Willison, George F., 649
Willmann, Rudolph, 643
Wilmington, Delaware, 139, 152
Wilson, Clara, 647; on appreciation, 622
Wilson, Florence H., 464; on verse-speaking choir, 623
Wilson, Guy M., 460, 463, 481; on fractions, 453
Wilson, Howard E., 350, 464
Wilson, Louis A., on spelling, 424
Wilson, V. A., 567
Winnetka, 547, 663; Primary Teachers and Research Department, 404

Winnetka Scale for Rating School Behavior and Attitudes, description of, 663-664
Winslow, Leon Loyal, 645; on art, 615
Wipperman, E. G., 258; on teaching procedures, 251
Wisconsin Department of Public Instruction, 256, 260
Wittich, Walter Arno, 278, 294
Witty, Paul Andres, 135, 382, 390, 403, 415, 446, 647; on good qualities of teachers, 120-121; on play development and versatility of play interests, 58-59; on racial differences in intelligence, 35
Woelfel, Norman, 294, 641; on use of radio, 374, 443
Wofford, Kate V., 260, 291
Wolf, Jean S., 134
Wolner, Manuel, 643
Wood, Ben D., 134, 651, 686; on handwriting, 427
Woodcock, Louise P., 135
Woodworth's Personal Data Sheet, 665
Worchester, D. A., on learning, 186
Work experiences, 267
Work period, 232-234
Work-Study skills, 660
Wrightstone, J. Wayne, 20, 193, 207, 217, 221, 349, 651, 660, 686; on evaluation of newer practices, 208-210, 362; on measurement of objectives, 209-210, 652-656; on procedures in developing a unit, 235
Wrightstone's Test of Critical Thinking, 660
Wrinkle, William L., 686
Writing, creative, 625-629; diagnosis of, 431, 433; poetry, 628-629; purposeful, 624-625; relation to other language arts, 353; *see also* Handwriting
Written expression, 417-420; content before form, 417-418; creative, 625-630; errors, 418-420; grammar, 418; texts, use of, 420
Wyoming, Department of Education on language arts programs, 366

Young, H. A., 283, 285, 294; on use of radio, 373
Young, Lyle L., on popularity of [illegible] 102
Youngstown Public Schools, on language arts programs, 366

Zachry, Caroline B., 134; on art and mental hygiene, [illegible]; on "the gang," 52; on pupil purposing, 109; on the latency period, 52
Zaidenberg, Arthur, 646
Zaph, R. M., 485
Ziegfield, Edwin, 644, 646
Zirbes, Laura, 205
Zisman, Samuel B., 274, 280, 291