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Keeping Pace With the Advancing Curriculum

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TABLE OF CONTENTS

	PAGE
Why the Curriculum Commands National Attention	109
Rapidity of Change in Modern Life—Its Relation to Curricula	112
Complexity of Modern Life—Its Relation to Curricula	112
Increases in School Attendance and Pupil Heterogeneity—Their Relation to Curricula	113
Advances in Educational Science and Psychology—Their Relation to Curricula	113
Educational Theories Affecting Curriculum Building	114
Varied Opinions as to the Purpose of the Public School	114
Two Intermediate Points of View	114
Opposite Poles in Educational Theory	115
Seven Approaches to Curriculum Building	116
Summary and Reconciliation of Curriculum Theories	117
Synthesis of Curriculum Theories Necessary and Possible	118
Decisions Preliminary to the Launching of a Local Program	119
Shall the Curriculum Be Built from the Outside or the Inside?	119
Should the Classroom Teacher Participate?	119
In What Ways Can Teachers Give and Receive Help?	119
What Part Should the Principal Play?	120
How May the Entire Teaching Corps Be Interested?	120
What Form of Committee Organization Results in Maximum Teacher Participation?	120
Should Courses of Study Be Suited to the Abilities of Teachers as Well as Pupils?	121
How May the Local Community Be Interested?	121
What Part Should the Outside Curriculum Specialist Play?	123
What Part Should the Local Research Department Play?	123
How Shall Time Allotments Be Determined?	123
Putting a New Course of Study into Practice	124
Contributions of Research to Curriculum Building	125
Should Research Findings Influence Curriculum Revision?	125
Summary of Research Findings	125
Subject Time Allotments	125
Research and the Curriculum in Handwriting	128
Research and the Curriculum in Arithmetic	131
Research and the Curriculum in Spelling	138
Research and the Curriculum in Reading	141
Research and the Curriculum in Language and Grammar	146
Research and the Curriculum in Social Studies	150
Research and the Curriculum in Health and Physical Education	156
Research and the Curriculum in Music	158
Looking Backward at the Curriculum	162
Books on Curricular Problems Which Have Been Tried and Found Helpful	168
Expert Opinion as to Best Books in General Field	168
Expert Opinion as to Best Books in Subject Fields	168
Bases for Evaluating Courses of Study	179
What Is a Course of Study and What Is It For?	179
Criteria for Evaluating Courses of Study	180
New Courses of Study for Old	182
Nation-wide Curriculum Revision Now in Progress	182
Availability of Local Courses of Study	182
No Brief for Scissors and Paste Pot	182
Legitimate Uses of List of Course of Study Bulletins	182
Intangible Results of Curriculum Revision	183
Index to Volume III	195-199

FOREWORD

By J. W. Crabtree

Three hundred school systems are working this year in the Cooperative Plan for Curriculum Revision sponsored by the National Education Association. Since January 1, 1923, a thousand new course of study bulletins have been issued by the school systems of the country. Great as has been the contribution of the school to social progress the teaching profession is still unsatisfied. It is determined to make the school a still better instrument for the production of citizens with sound intellectual and moral training and with adequate preparation for the everyday activities of life.

The difficult and complex work of curriculum revision is often carried on under severe handicaps. Many courses of study are "developed out of the necessities of life in school systems not highly endowed financially." It is with such systems in mind that this Bulletin has been prepared.

Committees working on programs of curriculum revision will find in this Bulletin the results of a painstaking winnowing of the best available material. It gives a bird's-eye view of what has already been accomplished. It plays the spotlight upon present trends in curriculum progress. It offers superintendents, principals, supervisors, and classroom teachers an opportunity to clarify their thinking concerning the larger aspects of the movement. For those who would gain more than an elementary knowledge of this movement, it tells where carefully selected material for further study may be obtained.

The National Education Association is leading in a nation-wide movement for getting "the entire profession at work on its problems." It takes pride in offering this issue of the Research Bulletin as one of its valuable contributions of material for this work. Owing to its content, arrangement, and timeliness, I predict that this Bulletin will be used as a basis for study and discussion in a larger number of teaching groups than has any other published by this Association. The Research Division has performed several outstanding pieces of work. This is one of the best.

Why the Curriculum Commands National Attention

The twentieth century has given us a new conception as to the function of the public school. Not so long ago, even yet in some communities, the school was looked upon as the means whereby a child might attain skill in a few of the simple tools of life. The work of the school was complete when the child had attained the ability to write a legible hand, to read, and to perform simple mathematical calculations. These hurdles accomplished, the child's education was complete, life could be commenced.

Far different is the present conception of the public school. Its work has only begun when it has drilled a few simple skills into the child's nervous system. It is not enough that the child be able to read aloud in a halting voice. He must learn to read silently, accurately, and with rapidity. He must acquire the habit of reading. He must be given the ability, insofar as his innate capacity permits, to discriminate between trash and literature. No lower ideals than these should be accepted in the teaching of reading if the foundation for intelligent citizenship is to be laid.

And so it is with every subject in the curriculum. The modern school seeks to create an environment made up of real life situations. The period of school attendance is not merely a preparation for future life—it is a section of life lived under the guidance of intelligent teachers. The child acquires the valuable skills known as the three R's; and through their use, in such subjects as history, civics, science, music, and art, under skilled direction, he comes into possession of habits of thought and action destined to be a part of his personality throughout life.

This larger conception of education as a creator of habits of action and attitudes of thought is remaking the school. It is changing it from a formal institution, dealing out a few pellets of knowledge which it is hoped may be used in the future, to one that offers an opportunity to practice life. It accepts the theory that sound character is the outcome of right conduct continued over a period of years until it becomes a habit.

Is the modern school aiming too high? Should it stop when it has succeeded in teaching the three R's better than they have ever been taught before—as all available evidence indicates it is doing—and then turn the child loose to complete his education in the university of hard knocks? "No," must be the answer to both of these questions if we accept the mandates of the people. A recent review of legislation prescribing what shall be taught in the schools arrives at this conclusion:

Schoolmen have frequently been criticised for introducing into the schools many so-called "fads and frills." They have been accused of doing this to the neglect of the fundamental subjects. It is, therefore, somewhat startling to discover that the representatives of the people have almost never made any special provision for reading, writing and arithmetic. Of course these subjects are everywhere taught, but nine States have never passed laws expressly declaring that they must be. It seems to have been taken for granted that the three R's would be adequately cared for.¹

On the other hand, in the last twenty years, there has been a sixty per cent increase in the number of subjects prescribed by legislation. Until recently the schools of California were required to teach no less than 28 subjects among which were: nature study, agriculture, animal life, bird life, music, drawing, elementary bookkeeping, humane education, thrift, manual training, household economics, and fire prevention.

Whatever view may be taken of such legislation, one fact cannot be denied. The people have clearly decreed that they expect the school to do far more than impart a few simple skills.

Not only have the people decreed that the schools shall teach a wide range of subjects, but they hold the school responsible for results far beyond those involved in learning to read and write. Has the school escaped a generous share of the blame for the "crime wave"? Is not the school held jointly responsible with the home and the church for the moral fibre of the nation? Can such a responsibility be based upon the imparting of a few tool skills, or must it be the outcome of a school whose curriculum is as broad as life itself?

¹ J. K. Flanders. "Lawmakers Enroach Upon the Schoolmen." *The New York Times*, September 6, 1925.

The people are not satisfied with explanations. When Chaplain Reed of the Ohio Penitentiary states—"an educational survey of our institution, recently completed, shows the

startling fact that 42 per cent of our inmates are virtually illiterate, while an additional 37 per cent have never received more than a fourth grade education"¹—the people are

¹ T. O. Reed, "Salvaging Man-Power Which Had Gone to Waste." *Trained Men*, November, 1923, p. 246.

ONE MAN~ SCISSORS AND PASTE~ POT



CURRICULUM CONSTRUCTION IN 1900

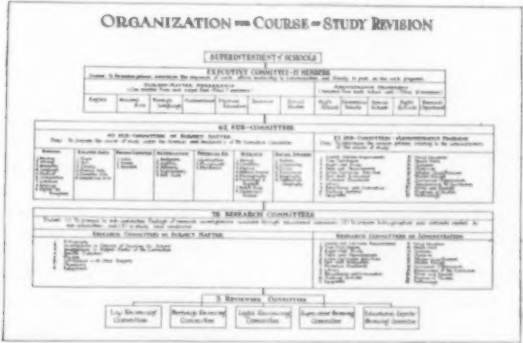
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likely to reply with a stricter compulsory attendance law and a mandate requiring training in morals. The people do not want excuses. They want results. By decree as to what is to be taught and by declarations as to outcomes expected, they demand that the

schools of today do a better job than the schools of yesterday did when they trained the present adult population.

It is not hard to see why hundreds of school systems are struggling with the problem of curriculum revision. If the school is to meet

POOLING OF LEADERSHIP



CURRICULUM CONSTRUCTION IN 1925

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its responsibilities, the curriculum of a generation ago will not do. A new curriculum must be built. The old curriculum called for the mastery of facts and skills, the new curriculum calls for the mastery of life.¹

Life as it is today and as it is to be tomorrow becomes the basis of curriculum content. This makes the problem of drafting a new course of study an extremely difficult and complex task. A consideration of some of the factors involved will reveal the truth of this statement.

Rapidity of Change in Modern Life—Its Relation to Curricula

One has only to consider how large a part of his daily life is the product of that small fraction of human existence, the last century, to realize the rapidity of change in modern life.

Consider a man's food.—A century ago, there was more than an even chance that he either produced it himself or personally supervised its production. Only a small part of his food came from outside the radius of a day's journey. Now the ends of the earth often contribute to the fare of the humblest citizen. Fruit from California, sugar from Louisiana, meat from Australia, coffee from Brazil, and fishing products from New England are not an unusual combination today.

Changes in transportation and communication.—The ship propelled by steam, the train driven by steam, or electricity, the automobile and the aeroplane are all recent developments. In 1825, man used methods of transportation similar to those known for centuries. In 1925, almost all transportation is by means which have been developed during the last century.

Less than a century ago, the possibility of making California a part of the Union was ridiculed in Congress, because transportation was so slow that a Congressman from that section would find it impossible to return to his constituency between sessions. Today, a Congressman from San Francisco may reach Washington in less than four days. The President of the United States simultaneously speaks to audiences scattered from Boston to San Diego and from Cuba to Seattle.

Life as it exists today would be completely disorganized were we suddenly thrown back

to the means of transportation and communication existing a century ago.

A new science in fifty years.—Fifty years ago, Pasteur was still battling to secure the acceptance of the results of his bacteriological researches. "Spontaneous generation" was accepted as the cause of gangrene. But little of the knowledge upon which present medical science and health conservation rest had been accumulated.

When life is being remade within a generation, when it is being fundamentally modified within the space of a decade, a static curriculum is an anomaly. The rapidity of the changes in modern life demands constant revision of the curriculum if the school is to continue to hold its place as a constructive force in advancing civilization.

Complexity of Modern Life—Its Relation to Curricula

There was a time when the frontier was open to those who found the demands of civilization irksome. The amount of knowledge necessary for successful endeavor as an earner and a citizen was small. It was not too much to attempt to read all the books in the town library. Those days are gone forever. The last frontier has been reached. The man who does not receive specific training both for vocation and citizenship, is likely to be a poor earner and ineffective citizen. No one can hope to know all there is to be known in even a limited section of human knowledge.

In short, life has become tremendously complex. We must learn how to get along with our fellow beings. We cannot escape them. We must select from the vast stores of knowledge which the race has built up. We cannot master it all.

This means a new curriculum. Its content must be the result of extremely careful selection. There is no room for material that does not contribute positively and liberally to the equipment for successful living with one's fellow beings. What dead wood should be pruned out? What new topics have a right to come in? How can training for citizenship and morality be most effectively given? These are the questions hundreds of course of study committees are facing. They must be answered correctly or the nation will be vastly poorer a generation hence.

¹ Joy Elmer Morgan. "The New Curriculum." *The Journal of the National Education Association*, December, 1925, p. 269.

Increases in School Attendance and Pupil Heterogeneity—Their Relation to Curricula

Larger numbers of children are enrolled in school today; they attend more regularly, and for a longer period of time.—The age for compulsory school attendance is gradually being extended. In 27 States, attendance is required throughout the State up to the age of 16; and in 13, the upper age limit is 17 to 18, at least in some localities.¹ In 1870, six children out of every ten from five to eighteen years of age were enrolled in a public school. In 1922, eight out of every ten children from five to eighteen were enrolled in a public school. General population increased 183 per cent between 1870 and 1922, while the number of day's schooling provided in public elementary and secondary schools increased 461 per cent.

At one time, it was the brighter and more apt pupils who remained in school. Today, children of all mental and physical conditions knock at the school door and continue their attendance well up into the upper grades. They come by the thousands, speaking many languages, with varying customs, and diverse social and racial backgrounds.

What does this mean in terms of the curriculum? It means that not one but many curricula must be created. The state cannot insure its stability and future progress merely by requiring that larger numbers of children shall be enrolled in school for longer periods of time. Such security can only be the outcome of guaranteeing every child in attendance the training and experiences that will best capitalize his latent talents. And so we find course of study committees facing new problems that are the outgrowth of the increase in numbers and heterogeneity of our school population.

Advances in Educational Science and Psychology—Their Relation to Curricula

Education as a science is almost wholly a creation of the last twenty-five years. Since 1900, research has built up a body of exact knowledge concerning the various subjects of the curriculum which is largely remaking their

organization and content. Consider one of the simple tool subjects—spelling. Twenty-five years ago, "learn the dictionary" was the objective set up before the child.

The fallacy of this procedure has now been demonstrated. We know that the school of yesterday assigned more words than the child could learn to spell in a reasonable amount of time. We now know that the number of new words a child can learn to spell each day is considerably less than we once imagined. Research in spelling has also shown that the number of words used in every day writing is much smaller than it was once believed to be. One thousand words and their repetitions make up considerably more than half of those used in ordinary writing. If the average person can spell the 3000 most common words in the English language, he will seldom find it necessary to use the dictionary. Standard tests now exist which make it possible for a teacher in Maine to compare the spelling ability of his pupils with those in California.

Guesswork need no longer be the only basis for selecting the words to be taught; in deciding as to the proper procedure in teaching them; and in testing the results obtained from that teaching.

Some exact information is available to guide procedure in every school subject. The amount of such information is rapidly increasing. The recent findings of educational science cannot be disregarded in building a modern curriculum. The results of educational research are coming to be as significant for teachers as medical research is for physicians.

Curriculum construction is no longer a casual procedure. It must take account of the new conception of the purpose of the public school. The growing complexity and the rapidity of change which characterize modern life cannot be disregarded. New content and new procedure are essential to meet the needs of a constantly growing and more varied school population. The facts that are rapidly creating the new science of education deserve more consideration with each succeeding year.

These factors have lifted the problem of curriculum revision to a plane of national interest.

¹ *Child Labor in the United States*, Bureau Publication No. 114, U. S. Department of Labor, Children's Bureau, 1924, p. 29.

Educational Theories Affecting Curriculum Building

Varied Opinions as to the Purpose of the Public School

Just what should a school do? What is a school for? All do not give the same answers to these questions. Even educational leaders disagree as to what the answers should be. The publications listed in the section entitled *Books on Curricular Problems Which Have Been Tried and Found Helpful* reveal widely differing philosophies of education, or points of view as to what a school should do and how it should do it.

Is it possible to isolate the conflicting theories and methods of attack growing out of differing viewpoints, so that they may be studied individually and clarity of thinking aided thereby? This difficult task is attempted in the following section. It offers no new contribution. It singles out some of the major educational theories and methods of curriculum attack. Those who desire a more complete grasp of these fundamental prerequisites to intelligent curriculum revision should read extensively from the carefully selected bibliographies and references in this Bulletin.

From the welter of conflicting viewpoints one discovers two opposed philosophies of education. These may be sharply defined by stating them in the exaggerated form in which they appear on the opposite page.

These two educational theories will frequently be encountered in the literature dealing with curriculum construction. They constitute the framework upon which is hung most of the discussions of modern educational philosophy. Which of these theories should be accepted? The answer is—*neither*. Both theories, contrasted on the opposite page, when stated in their most intelligent form, however, have much to recommend them.

Few would deny that most children, at some time in their lives, have to be told to do something and made to do it whether they like it or not. Traffic regulations have to be made and enforced or society ceases to be civilized.

On the other hand, there is an important place for the freest possible self-expression in every child's education.

In attacking the problem of curriculum revision, it is not necessary to be either a "repressionist" or an "expressionist." It is desirable to understand that two opposite poles of educational theory do exist; and that frequently they constitute the real basis of disagreement as to proper procedure in determining curricula.¹

Educational theory determines procedure of curriculum revision.—If a course of study committee accepts the "repression" theory, in its entirety and without modification, it builds a traditional logical course, ignores the psychology of individual differences and makes no provision for the spontaneous activities of children. "The simplicity of the plan renders unnecessary any directions, as to the manner, in which the book is to be taught or studied." For learning, rely on drill; memorization for information, and practice for the skills. The subject-matter will be selected in the hope that some time, somewhere, the pupil will have use for it; and when this occasion arises, somehow, the pupil will immediately take it from his mental cold storage chamber and apply it surely and effectively.

Two Intermediate Points of View

Child activities directed toward social ends.—Between these two extremes in educational theory are various degrees of liberalism and conservatism. Two intermediate points of view deserve mention here. According to the first, the teacher is a trained observer who guides the interests of her pupils into activities that are purposeful and which have social value. In the classroom, subject-matter is still subordinate to activities. Whereas the teacher has clearly in mind a unified and carefully organized core of subject-matter, she does not rigidly require that it shall be covered in any set order.

¹ As a basis for further reading on this subject the following article is suggestive: Mossman, Lois Coffey. An analysis of the Theories Basic to Curriculum Construction. *Teachers College Record*, May, 1925, p. 734-739.

² See page 165.

Opposite Poles in Educational Theory

Theory of Repression

1. Education is preparation for adult life, it ends when maturity is reached. It is primarily a reshaping, reformatory process for the child, who is looked upon as a bundle of original sin.

2. The aim of the curriculum is to prepare for future opportunities and responsibilities. The curriculum necessarily involves much that is distasteful and foreign to the child's immediate interests.

3. The method of teaching is formal drill on set assignments logically arranged. Rigid discipline moulds the child into adult conformity.

4. Training results from acquiring, through memorization, the facts that make up the social heritage of the race.

5. Learning is a cold storage process by which the child stores up facts and skills for future use.

6. Through education the child is inculcated with accepted doctrines and imbued with the sanctity of established institutions and vested rights.

7. School equipment is simple—a room, a teacher of the drill-master type, a rod, and a book.

8. Child activity in itself has no justification. Childhood is merely a period of intensive preparation for successful participation in adult life.

9. Too much education is feared. Education beyond one's station is to be deplored. Early entrance into industry and the early assumption of adult responsibilities should be encouraged.

Theory of Expression

1. Education is life; it continues throughout life. It is an unfolding process. Spontaneous self-expression is the means employed; and unrepressed child nature is its own best guide.

2. The aim of the curriculum is to stimulate and encourage children to grow by providing for them, through a rich and suggestive environment, activities in which they joyously engage.

3. The method of teaching is following the inner urge of the child which results in spontaneous activity. Freedom and self-expression best develop latent talent.

4. Training results from meaningful activity growing out of the child's needs and interests.

5. Learning is the acquisition of facts and skills essential to the fulfillment of the child's immediate interests.

6. Through education the child is imbued with a spirit of irreverence for blind tradition and a critical attitude toward things as they are.

7. School equipment is varied and attempts to duplicate life situations. The teacher is a sympathetic observer of childhood.

8. Childhood is its own justification. It should be a period of carefree self-expression untrammelled by the demands of adulthood with its unfulfilled anticipations.

9. The more education the better. Through education every child can be brought to a higher level or station in life. The period of youth and school attendance should be extended.

Use of child play and socialized recitation.—The second intermediate viewpoint has two varieties of interpretation. In one case child play is the means for organizing adult material. In the second case, the subject-matter is logically arranged, but the method of presenting it is through the socialized recitation. The teacher controls the situation but permits and encourages pupil participation.

Seven Approaches to Curriculum Building

Among the various methods of curriculum construction are these:

1. *Acceptance of tradition.*—According to William McAndrew, superintendent of schools, Chicago, "We have long treasured some old ideas which we call eternal verities, and when we make a course of study we are prone to start with these lest some critic will find them absent from our course and ridicule us."

Tradition gives prestige to certain material in the course, out of all proportion to its present-day life value. "What always has been should be" is apparently the guiding principle of some curriculum writers. To support this viewpoint it is contended that the courses in force in representative schools are the result of careful thought and thorough winnowing by succeeding generations of teachers and hence represent the best thought available.

2. *Imitation or scissors and paste-pot.*—Collecting courses of study from different parts of the country, written from many different standpoints and to meet divergent needs, clipping such sections as appeal to the personal bias of local school officials and fitting these clippings together to form a "new course" has been the method too often followed in the past. As a result, until recently as one reviewed a large number of courses of study, he met certain phrases so frequently that they became familiar friends even though they were seldom dressed up in quotation marks.

3. *Acceptance of prevailing-style-as-shown-by-frequency-of-occurrence.*—Those who argue for this method hold that course of study building represents a progressive development or a "sifting process," and that each time a course of study is built, it represents the selection of what educators at that time considered the most valuable material. Hence, they would build a new course by collecting a suffi-

cient number of courses in present use to be representative of all sections of the country and selecting those topics which occurred most frequently in all the courses collected. For time allotments, they would also take the median or average practice as a safe guide.

Those opposed to this method argue that it is not always wise to follow traditional practices and particularly the median of many discordant practices of school systems which are the result of wholly different ideas of what education is and ought to be.

Some would modify this practice by tallying the frequency of occurrence of topics in a limited number of carefully selected "best courses." Those topics which occur most frequently in these selected courses would form the basis for the new course; and the median or average practice, the time allotment.

4. *Determining activities through occupational or job analyses.*—This method would base the curriculum upon the results of scientific analyses of adult human needs conducted by trained investigators. Such analyses would discover the many specific types of activity in which men engage. For example, investigators have tried to discover the ten thousand words which men spell most frequently, the mathematical operations that are performed in actual business practice, as for instance, the particular knowledge involved in managing a checking account in a bank, the many acts people perform in caring for their health, and so on for the thousands of specific activities involved in modern civilized life.

This method aims at social utility, since it seeks to discover through the analysis of life's most important activities, the abilities which must be developed in the school.

Some of those who employ the method of job analysis admit that it does not decide anything about the spirit, attitude or purpose by which the activity is to be controlled. This is a question of ideals. These ideals must be selected through conference and discussion. Others view the relationship between the activities revealed by an analysis of a job and the factor of ideals in a different light. They look upon the ideal that may be associated with the performance of a particular activity as an integral part of learning how to perform this activity. For example: A boy in learning to drive an automobile is not merely taught how to operate levers and foot-brakes. He

also learns the speed that is safe under varying conditions and that safety requires the rigid observances of certain rules such as passing a street car on the right. Ideals such as these are declared to be an integral part of the process of learning to drive an automobile. They are no more separate from the whole learning process than is the act of operating a foot-brake. If ideals have not been acquired as a result of instruction, the job of teaching has been poorly done.

5. *Statement of adult abilities and selection of pupil experiences necessary to their acquisition.*—When careful scientific analysis of community needs by trained investigators are lacking, this method is suggested. It offers as a substitute the pooled judgment of thoughtful men and women. According to this method, course of study committees make more or less comprehensive lists of human abilities and characteristics which in their judgment are advisable or desirable for men and women in a particular community. After these lists have been classified, each department in the school system selects those, toward the attainment of which it will direct its efforts. The next question faced is this: What are the activities and experiences on the part of the pupils which are necessary for achieving these objectives? The pupil experiences and activities agreed upon are the curriculum.

6. *Study of children and their normal activities.*—Some educators maintain that a study of the mental and emotional life of children should direct the teacher. They hold that the position of teacher is that of guide rather than dictator. His duty is to observe the spontaneous activities of children and to act accordingly.

According to this viewpoint, the kindergarten teacher should be looked upon as the mature member of a social group of immature beings, in which her wider experience, wiser judgment, greater knowledge and technique are at the disposal of the children, when there is need of adult direction.

This viewpoint influences both the selection of curriculum content and the method of teaching. It suggests these two general principles: (1) Subject-matter should be selected because of its inherent significance to pupils; (2) Subjects must be selected, graded and used with the pupil of today, rather than the adult of tomorrow in mind.

7. *Study of errors.*—This method will not produce an entire course in all the subjects of the elementary school curriculum. For particular subjects, however, such as grammar, it has been used as one means of selecting content. Charters, in the October, 1924, issue of the *Journal of Educational Research* writes: "It is extremely difficult to list all the facts of language and grammar which are used in spoken and written English. Not only is it difficult, but it is relatively useless, because many of the 'operations' of English present no difficulties. Consequently, it has been found that if an analysis of the errors of English composition, including both oral and written speech, is made, and if these errors, together with methods and reasons for the methods of correcting the errors, are taken up, the result provides us with a seemingly adequate language curriculum for the grades."

A study of errors is probably more often made for the purpose of determining the amount of emphasis to be put on certain topics. Frequency of error is to some extent a measure of the difficulty or ease of learning. For example: The spelling difficulty of a word is indicated by the relationship of its frequency of use and misspelling.

Summary and Reconciliation of Curriculum Theories

It was pointed out in the preceding section that new courses of study, not merely formal revisions of old ones, were needed for these three reasons:

1. Changes in our economic, social and industrial life
2. Advances in educational science and psychology
3. Increases in school attendance and pupil heterogeneity.

The very causes which demand that new courses of study be built also justify the methods of attack which have been developed.

The survey of adult activities—its place in curriculum building.—If changes in our economic, social and industrial life are to be one of the bases for determining curriculum content, the survey of adult activities furnishes the best means whereby these activities may be discovered with accuracy. In addition to the general survey some would also employ the community survey to determine the activities of special importance to a particular com-

munity. Educational objectives can then be based upon the demands of life, and the training given necessary to meet these demands effectively. The survey or job analysis method of approach to course of study revision is justified, therefore, in so far as we look upon the school as a place which trains children for the responsibilities of adult life.

Children's interests and capacities—their place in curriculum building.—Modern educational science and psychology emphasize the value of work which children understand and appreciate. It is contended that the most effective learning takes place when interest and pleasure in the results accomplished, rather than the rod, are the driving forces in school work.

Psychological investigations have largely discredited the doctrine of formal mental discipline—based upon the belief that results of mental activity in one field are completely carried over into another. This doctrine justified the inclusion in the curriculum of almost anything, so long as it was difficult and abstruse. Modern educational investigation has revealed the fact that the amount of learning gained in one form of mental activity which can be transferred and used in another form of mental endeavor is often disappointingly small. If this is true, then mental training should be specific rather than general; and curriculum content must be selected with this fact in mind.

In so far as one accepts the findings of modern educational science and psychology, he will make a study of children's interests and capacities one of the bases of curriculum building; and he will be unwilling to accept a curriculum founded on the doctrine of formal mental discipline.

Increases in school attendance and pupil heterogeneity—their influence on curriculum building.—In the last half century there has been an increase in the number of children attending school and in the length of the

period they remained in school. At one time the school dealt with a selected group, most of which learned readily in spite of poor instruction. Today practically all children attend school—the mentally and physically handicapped along with the normal and superior. Psychology has revealed the importance of studying each pupil. Case-histories of individual children furnish a scientific basis for meeting individual needs. In so far as one accepts the findings of the psychology of individual differences, courses of study must be remade to minister to a variety of pupil needs. Recognition of pupil differences leads to the inclusion in the course of study of a wide range of material, from which teachers may select to meet the specific needs resulting from varying abilities, school expectancy, local conditions, or temporal interests.

Synthesis of Curriculum Theories Necessary and Possible

No one method of course of study building used by itself results in a satisfactory course. "Education must clearly see child and man but not in a social vacuum." There must be a union of the approaches to curriculum revision that have been discussed.

A curriculum should not be built wholly on the basis of children's interests and spontaneous activities. These must be directed toward goals that are socially desirable.

On the other hand a curriculum should not be built wholly upon the basis of adult needs and activities. The learner must retain his rightful place in the scheme of things. Furthermore, courses of study should not be designed merely for children of one level of ability.

A curriculum can be built which has large social adult values, appeals to the interests of children, is suited to their growth wants, and at the same time is sufficiently differentiated to meet the needs of pupils of varying levels of ability.

THE COMMON school is the greatest discovery ever made by man. Other social organizations are curative and remedial; this is a preventive and an antidote. They come to heal diseases and wounds; this, to make the physical and moral frame invulnerable to them.—*Horace Mann.*

Decisions Preliminary to the Launching of a Local Program

Shall the Curriculum Be Built from the Outside or the Inside?

There are two plans of curriculum revision. In one plan, experts are engaged and they, together with the local supervisors and specialists, construct the course of study and it is handed "ready-made" to the teacher. This is building a course of study from the outside. Another plan calls for the full cooperation of the whole teaching force under the guidance of specialists. This is working from the inside. It is the plan now widely accepted.

In the last analysis, the effectiveness of a course of study depends upon the intelligence with which it is used in the classroom. A course of study revision program must consist of more than getting proper content and technique on a printed page. Teachers must see the significance of it all. The biggest problem in curriculum revision, according to one superintendent of schools, is not in revision at all. It is this: "How may the teachers who are to use the new material be brought into a sufficient familiarity with it, so that its objectives may be realized in their work?"

Should the Classroom Teacher Participate?

Questions such as these are constantly rising in many teachers' minds: "How much time do I spend teaching children facts in which they are not interested and for which they will probably have little use? Is the purpose of the public school civic service or the development of individuals to be financial successes? Isn't the course of study to be covered in grade six too difficult, while that in grade five is comparatively easy? Isn't my method of teaching a particular unit of subject-matter better than that suggested in the course of study, and would it not be used by many

teachers if they had means of knowing about it?"

No longer does the teacher merely raise such questions as these in his own mind. The time has come when they function in the building of a course of study. Today the course of study which no classroom teacher sees until it is handed to him in final printed form is an anachronism. It has no place in a modern school system. Teachers in daily touch with the throbbing life of the nation's children have a vital contribution to make.¹

In What Ways Can Teachers Give and Receive Help?

Under the leadership of specialists, teachers can give and receive help in these seven ways: (1) By reading the best books on the curriculum, (2) by helping to analyze present American life needs, (3) by becoming familiar with the local environment in which pupils are growing up, (4) by evaluating the existing local course of study, (5) by familiarizing themselves with the best current practice, (6) by studying the abilities, interests, and growth wants of developing children, and the special needs of individual children, and (7) by bringing to bear on the problem of curriculum revision the results of their experience as to what is practical and advisable in the way of classroom procedure.

Teachers who have participated in building a course of study come to realize that the task is as big as life itself. Their lack of knowledge in solving the problems which arise motivates them to further study and to seek the aid of specialists and scientific experimentation.

Superintendents of schools generally agree that: "More intelligent and purposeful teaching is the result of teacher participation in course of study revision."

¹ For a more detailed discussion of the question briefly touched upon in this paragraph see: Second Yearbook, *The Elementary School Curriculum*, Part II, National Education Association, 1924. "Participation of Teachers in Curriculum Making," *American Educational Digest*, January, 1925. p. 207. Bonser, Frederick G. *The Elementary School Curriculum*. Macmillan, 1923. p. 5-8.

What Part Should the Principal Play?

In some school systems principals assume leadership in curriculum revision programs. In many places, it is expected that they will help all committee members rather than the members of a particular committee. Some feel that the principal should be concerned with the work of every committee whose subject-matter field is included in the program of studies of his school. His interest, then, is in the whole program and he sees the bigness of the task in a way that he could not, if he were tied down to the work of a particular committee. Whether a principal should be chairman of one committee or ex-officio adviser of several, is a question which local circumstances largely determine.

An important responsibility of the principal, according to Courtland V. Davis, principal, J. E. B. Stuart School, Norfolk, Virginia, is the development of proper teacher attitudes toward curriculum study and revision. He outlines the principal's responsibility as follows:

He will keep his staff informed of the work at every stage. He will encourage and assist those members of his staff who are working on curriculum problems in the various committees. By his attitude in teachers' meetings he will make the teachers feel the importance of the task in which they are engaged. . . . He will lend every assistance which the resources of his plant afford to teachers who are carrying on classroom experiments in connection with curriculum problems. He will make the teachers feel that the problem of building the courses of study is their problem and that he is keenly interested in the work which they are doing.¹

While much of the work of curriculum revision is done through committees not organized about a particular school as a unit, nevertheless it is always the school unit which applies and tests out the finished product. No course of study can function effectively unless it is understood by all teachers and its objectives are worked toward by an effectively functioning school. Whether this will happen or not largely depends upon the principal. His

position makes him the logical leader, who should interpret the course of study in its broader aspects to his teachers, so that they may see their classroom work, not in isolation but in relation to the larger objectives of the whole school system.

Bobbitt² compares the position of the principal in a curriculum revision program to the director of an orchestra who must coordinate all of the parts in the making of one harmonious whole. The teachers initiate plans as to details. The principal initiates the more general plans and policies which control the total work of the building.³

The principal should have sufficient grasp of the fundamentals of curriculum revision so that he can lead his teachers in constructive criticism of the curriculum as it is, and give them a background by which they can worthily represent their school in committee work.

How May the Entire Teaching Corps Be Interested?

What is the first step to take in a program of curriculum revision? Answers to this question will be reported in the 1926 Yearbook of the Department of Superintendence. They will show that motivating the teaching force is often one of the necessary steps in a curriculum revision program. Motivation may be accomplished by: Inviting teachers to point out defects in present courses of study, comparing accomplishments of local pupils with standard norms, presenting the findings of a comprehensive age-grade study, inviting outside speakers to address groups of local teachers, encouraging teachers to study curriculum problems and to participate in a program of curriculum revision under trained leadership.

What Form of Committee Organization Results in Maximum Teacher Participation?

How may committees be organized so as to secure maximum teacher participation? Some

¹ Davis, Courtland V. "The Principal and the Building of Courses of Study." *The Third Yearbook of the Department of Elementary School Principals*, National Education Association, 1924. p. 489-492.

² Bobbitt, Franklin. *How to Make a Curriculum*. Houghton, Mifflin, 1924. p. 280.

³ See also the section in the Second Yearbook of the Department of Superintendence entitled: *The Principal and the Machinery for Devising, Revising, and Supervising the Curriculum* by Worth McClure.

cities have found that this can best be accomplished by having subject committees made up largely of teachers and by having a teacher act as chairman of every subject-matter committee. Most cities find it advisable to have committees distributed among all the schools of the city as far as it is practicable. In the larger cities it is impossible to represent each elementary school on each committee. However, an equitable representation can be secured by selecting committees so that the school which does not have one of its teachers on the arithmetic committee, has one on some other committee.

To secure the interest of all teachers, some principals have helped committee members by giving them opportunity to report on the work of their several committees at the regular faculty meetings of the school. This offers an opportunity to obtain criticisms and suggestions from every teacher in the building.

In answer to the question, Are there advantages in having three sets of committees, one for the elementary schools, one for the junior high schools, and one for the senior high schools? A. L. Threlkeld, assistant superintendent of schools, Denver, Colorado, writes: "Such a plan often insures more complete participation. When all twelve grades are covered by one committee in a given subject-matter field, a certain part of the school system is apt to dominate other parts. Each group of teachers: elementary, junior high school, and senior high school, should each make their contributions in an unrestricted manner and from the viewpoint of the field which they represent."¹

Should Courses of Study Be Suited to the Abilities of Teachers As Well As Pupils?

A course of study which the specialist may rank very high, may not be the best course for a particular community. If teachers who are to use it are not in sympathy with it, do not understand it, and are not trained to carry out

the methods which it suggests or to interpret its contents, it is a poor course for that community. It is like a pipe organ placed in an auditorium where no one is trained to play anything but a common organ.

How May the Local Community Be Interested?

In the curriculum revision program of a large commercial high school, assistance was had from the local papers. One paper sent a reporter to spend a day in the school, writing up the high spots of the school's work as it was reorganized. Another reporter prepared biographical sketches of the leading teachers engaged in the work. This was a part of the school publicity program already in progress.

Heading off misunderstanding.—One school superintendent, recognizing that the junior high school course in social studies introduced many innovations which might be misinterpreted, submitted units of the course as they were compiled, to the local newspaper editors in advance, and secured their criticism privately. In connection with such criticism, the superintendent of schools had an opportunity to give the editors of his city a grasp of the aims and purposes of the modern school. Without any specific request from the superintendent, the newspapers not only refrained from public criticism, but, from time to time, prepared news items about the progress of the work of curriculum revision in the local schools and wrote editorials supporting it. Not only was the curriculum revision program guaranteed smooth sailing, but other phases of the city's educational development became easier.

The curriculum revision program which fails to carry editors, civic leaders, and other intelligent laymen along with it, will encounter active opposition or luke-warm support. It is important that school people realize and clearly face the fact that the modern school is at present developing with unparalleled rapidity. "Interpreting the schools to the public" was never more needed than today.

¹ For additional material on this question so briefly treated here see:

Second Yearbook of the Department of Superintendence, *The Elementary School Curriculum*, National Education Association, 1924. p. 37-49.

Kyte, George C. The Cooperative Development of a Course of Study. *Educational Administration and Supervision*, December, 1923. p. 517-536.

Threlkeld, A. L. Curriculum Revision: How a Particular City May Attack the Problem. *Elementary School Journal*, April, 1925. p. 573-582.

Newspaper publicity by school official.—In another city the primary school supervisor, during the curriculum revision program wrote an article each week entitled, "Snapshots of a Modern Primary School," for one of the local Sunday papers. These articles told of some of the new educational methods and current school practices. Parents read these articles with interest and commented upon the fact that children could be taught to read without learning their A B C's. So great was the lay interest that the primary supervisor was invited to address local men's and women's clubs on the subject of the new curriculum.

Feature articles on curriculum revision.—Front-page news articles dealing with the local program of curriculum revision appeared for thirteen consecutive days in two of the leading local papers in one city. The news stories were written by a special feature writer of the

local news staff. Figure I reproduces a section of one of these. Headlines of other articles follow: (1) What Do You Know About —'s Schools—First of a Series of Articles on Methods of Teaching and the Curriculum; (2) Proper Home Making Now Taught in City's Up-to-Date Schools; (3) Taxpayers Are Saved Much by Crews of Experts Revising Studies to Keep Them Up-to-Date; (4) Child Gets Sciences by Simplest System of Helping Curiosity—Fanciful Names and Unnecessary Facts Ignored in New Methods; (5) History Is Regarded as Social Science in Modern City Schools—Mere Dates and Names Ignored—Study Cause and Effect of Turning Points in Civilization; and (6) Students Disciplined by Teaching Instead of by Old Floggings—Children Schooled to Guide Selves by Developing Social Instinct, Judgment, Loyalty and Moral Stamina.¹

¹ For further information as to how the public may be kept in touch with the advancing curriculum see:

Series of reprints of articles from the *Rocky Mountain News* and the *Denver Times* concerning the curriculum revision program of the Denver Public Schools.

Maryland School Bulletin, *School Publicity a Professional Opportunity and Obligation*, State Department of Education, Baltimore, Maryland. November, 1923.

FIGURE I

[The Denver Times, November 22, 1924]

PUPILS READ WORDS AS UNITS IN METHOD USED IN CITY SCHOOLS

**Old Style of Chanting Aloud Dropped and
Aim Is to Train Youngsters in Rapid
and Silent Recognition**

This is the seventh of a series of articles on Denver schools. New phases of the subject will be covered in articles to be presented in The Times and Sunday News. Watch for them.

BY GEORGE LOOMS

If the reader of this article is 30 years old or older he will recall that before he became an entered apprentice in the art of reading he had his

"A B abs" hammered into his skull. Then he started in with such complex arrangements of letters as "cat" and "rat" and "dog" and "cow" and certain salient and esoteric facts

Laymen serve on course of study committees.—In some communities, informed and interested laymen are invited to serve on course of study committees with members of the local school department. Quickened community consciousness on the subject of education should be one of the big results of curriculum revision.¹

What Part Should the Outside Curriculum Specialist Play?

In one city, specialists were brought in for definite personal work with committees. They came not for general lectures or general discussions, but at a time when committees had their problems defined and were able to state issues clearly and to ask definite questions about them, and were looking to the specialist for specific assistance.

School systems which invite an outside specialist to make initial addresses in a curriculum revision program often find that the teachers accept the speaker's point of view without properly evaluating it or comparing it with those of other specialists. For this reason many argue in favor of a preliminary reading course before an invitation is extended to an outside specialist.

Other superintendents of schools find that the stimulus which an outsider brings acts as a motivating force for the teaching body to engage in a curriculum revision program. As the program proceeds, however, expert guidance and direction, which only the specialist can give, are usually needed.

What Part Should the Local Research Department Play?

Some cities give standard achievement tests throughout the schools before the old courses

of study are displaced. Later the new courses are checked by the same method. Often, the director of research works out with each subject committee a series of tests covering the actual content of the new courses. The aim of these tests is to offer help in evaluating the effectiveness of the content and the method used. In this way the weak spots in the new courses are discovered and the teacher is enabled to analyze better teaching problems.

Many courses of study include standards of achievement in terms of standardized subject tests. Where this item is included, the question arises as to which achievement tests to use and why. When courses are to be differentiated to fit children of various levels of ability, data gathered by the local director of research furnish one of the best bases for differentiation. A carefully made age-grade and progress study with simple and graphic interpretations of its findings has in many cases served as an excellent indication of the necessity of a revised course of study.²

How Shall Time Allotments Be Determined?

Is current practice a safe guide? G. T. Buswell and C. H. Judd answer this question as follows:

... it is appropriate to insert a warning against a tendency which has come to be not uncommon, namely, the tendency to regard the median or average practice in time allotment as a safe guide. There are spheres of school administration, such as the field of finance, in which the forces of outside economic life react upon the judgments of school officers in such a way as to produce a kind of workable average practice. In the organization of the curriculum the influence of such forces is relatively small, and the averaging of many divergent judgments is much less likely to result in

¹ See Second Yearbook of the Department of Superintendence, *The Elementary School Curriculum*, 1924. p. 13-14 and 38, 48-49.

Judd, Charles H. "How Modern Business May Aid in Reconstructing the Curriculum," *Official Report*, Department of Superintendence, National Education Association, 1923. p. 95-100.

² For further practical suggestions showing relation of local directors of research to curriculum revision programs see: Report No. 4 of the Superintendent of Schools, Lincoln, Nebraska. *What Is Being Done to Adapt the School Program to the Needs of the Pupils*. April, 1925. p. 1-27.

Report of the Survey of the Schools of Watertown, New York. Teachers College, Columbia University, 1925. p. 129-136.

Snedden, David. "The Character and Extent of Desirable Flexibility as to Courses of Study and Training for Youths of 12-14 Years of Age." *Proceedings of National Education Association*, 1916. p. 965-976.

Dickson, Virgil E. *Mental Testing and the Classroom Teacher*. World Book Company, 1924. p. 178-181.

a useful figure. It is often the highest exhibition of wisdom to depart from the traditional practices and certainly from the median of many discordant practices of school systems which are controlled by wholly different ideas of what education is and ought to be.¹

Definite standards of achievement—the ultimate goal.—According to Fred C. Ayer,² director, Department of Research, Seattle Public Schools, scientific time allotments cannot be made for a particular subject in any grade until it is agreed officially as to what knowledge and skill in that subject we may rightfully expect of a child in a given grade. For the present the administrator who contemplates a readjustment of the time element in his elementary school program must derive his justification from proposed changes out of the practical experience of our better school systems.³

Putting a New Course of Study Into Practice

After a new course of study has been written the next step is to get every teacher in the school system to use it and to comply with its principles. These are some of the methods commonly used by superintendents of schools:

1. During the building of the course of study secure as much teacher participation and interest as possible by giving all teachers an opportunity to point out the weak spots in the present course and to suggest ways for its improvement.

2. Through meetings of the entire teaching corps, explain the general principles underlying the course of study revision program, the aims to be accomplished through the new course, and the essential points of difference between the new course and the old.

3. Place a tentative mimeographed copy of the new course of study in the hands of each teacher, asking her to give it a fair trial and report her criticisms in writing on a certain date. Ask the supervisors to call monthly meetings to discuss with their teachers the actual working out of the new course. The supervisor may also plan a series of demonstration lessons, showing the best type of work that is being done. This gives teachers a concrete interpretation of a small unit of the new course.

4. Organize the new course of study so that every teacher who reads it can share with the committee who makes the course, the problems which were involved and considerations which were before the committee in arriving at a given solution.

Roscoe L. West points out in the *Journal of Education* for April, 1925, the difficulty of keeping every member of the teaching corps in a large school system in vital touch with all phases of a curriculum revision program. Hence, many teachers are not familiar with the new course when it is introduced. According to Mr. West, "Even if the teacher reads the course thoroughly, the changes fail to sink in and she goes on in the same old way which she has always used."

The solution suggested is to have the new course of study so organized that it will show that the committee was faced with certain problems; "that it consulted certain sources for help on those problems; that it found in these sources certain arguments pro and con concerning the problem; that it presents its solution for reasons given; and that it recognizes that certain other phases of the problem still remain unsolved."

¹ Buswell, G. T. and Judd, C. H. "Summary of Educational Investigations Relating to Arithmetic," Supplementary Educational Monographs, University of Chicago, Chicago, Illinois. Number 27, June, 1925. p. 22.

² Ayer, Fred C. *Studies in Administrative Research*, Bulletin No. 1, Department of Research, Seattle Public Schools. June, 1924. p. 9-25.

³ For extensive studies in the field of time allotments see:

Second Yearbook, Department of Superintendence, *The Elementary School Curriculum*, National Education Association, 1924. p. 138-172.

Kyte, George C. *A Study of Time Allotments in the Elementary School Subjects*. California Curriculum Study, Bulletin No. 1, University of California, 1925.

THE NEW curriculum helps us to vision education as a many-sided process which concerns the entire life of the child on the one hand and the whole life of society on the other.—Joy E. Morgan, *Journal of the National Education Association*, December, 1925, p. 270.

Contributions of Research to Curriculum Building

Should Research Findings Influence Curriculum Revision?

The barber pole reminds us of the time when the barber and the doctor were one. The same person, using an identical instrument, performed both tonsorial and surgical services. That these services are no longer blended is due primarily to medical research.

Those forms of human endeavor that have made conspicuous progress within the memory of man have built upon an expanding foundation of exact knowledge—the product of research. The future advances of the public school in power to serve and in the public's esteem will be very largely determined by the readiness with which it applies the results of scientific research.

Educational research has but little more than begun. A little over two decades ago Rice's¹ pioneer studies claimed the attention and aroused the ire of school people. Yet there now exists a body of exact information that is already remaking our schools.

In the field of the curriculum, research has advanced to the place where its results cannot be ignored by those who would draft a truly modern course of study. In such subjects as spelling, many school systems are already finding in the results of research a firm foundation upon which to base content and procedure. Progress already made encourages one to look forward to the time when research will give us the same grasp of such complex subjects as social science that we now have of the field of spelling.

This does not mean that education is to be mechanized, and that a cold scientific procedure can ever become the sole basis of educational development. But it does indicate

the necessity of some familiarity with scientific investigations of the curriculum on the part of those charged with the education of children.

A Summary of Research Findings

In this section an attempt is made to point out some of the major conclusions affecting the curriculum that need to be held in mind by those charged with drafting courses of study. A complete statement has not been attempted. Even the most important points could be given but brief attention and rather dogmatic consideration. The necessity of such procedure is apparent when one realizes that 212 pages were recently consumed in summarizing the research findings in one subject—arithmetic.

This section will be inadequate for those who would gain a sure grasp of the implications of research for curriculum construction. This can be gained only by consulting the publications upon which the succeeding summary is based² and in many cases it will be necessary to go back to original reports of the investigations upon which these publications are based.

This section should serve these purposes. First, it will indicate some of the methods that have been used to determine what should be included in the curriculum. Second, it will point out a few of the least tentative conclusions that may be based upon these findings. Third, it will offer ready reference to additional publications to be consulted by those seriously attacking the job of drafting better courses of study.

Subject Time Allotments

Chart I compares time allotted to subjects of the elementary schools in 1904 and 1924.³

¹ Rice, J. M. "Educational Research: A Test in Arithmetic," *Forum*, Vol. 34, p. 281-97. October-December, 1902.
"Educational Research: Causes of Success and Failure in Arithmetic," *Forum*, Vol. 34, p. 437-52. January-March, 1903.

² *Scientific Management in Education*. New York. Hinds, Noble and Eldridge, 1912.
³ *Research in Constructing the Elementary School Curriculum*, Third Yearbook, Department of Superintendence, National Education Association, 1925, 424 p.

The Twenty-fourth Yearbook of the National Society for the Study of Education, Part I., Report of the National Committee on Reading, Public School Publishing Company, 1925. 356 p.

Summary of Investigations Relating to Reading by William S. Gray, University of Chicago Press, Chicago, Illinois 1925, 275 p.

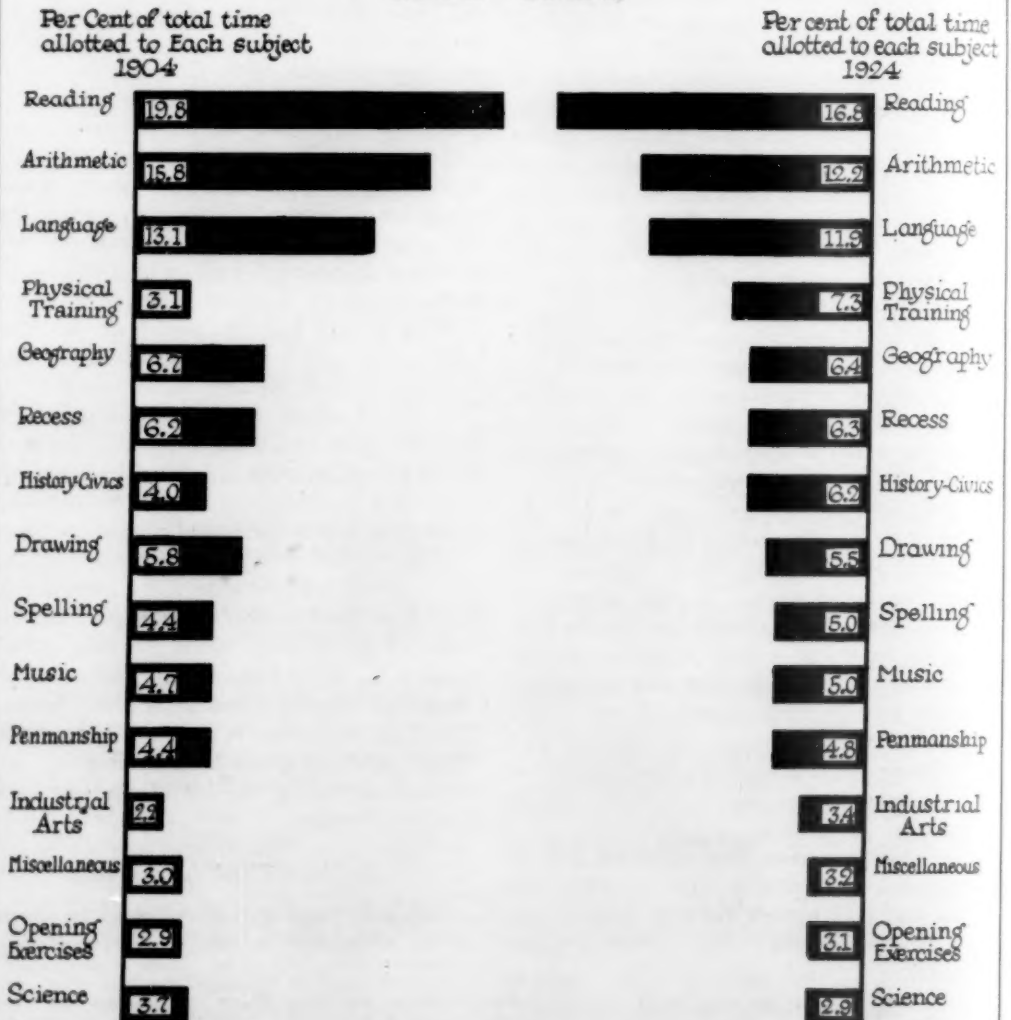
Summary of Educational Investigations Relating to Arithmetic by Guy T. Buswell and Charles H. Judd, University of Chicago Press, 1925, 212 p.

Curriculum Construction by W. W. Charters, The Macmillan Company, 1924, 352 p.

³ While the data in these different studies for a number of reasons are not exactly comparable, they are the best that are available. They should be accepted merely as showing trends. This statement also applies to the data presented in Charts III, V, VII, IX, XI, XIII, XV, XVII.

CHART I

PER CENT OF TIME ALLOTTED TO EACH ELEMENTARY SCHOOL SUBJECT IN GRADES 1-8 1904~1924



*Research Division
National Education Assn.*

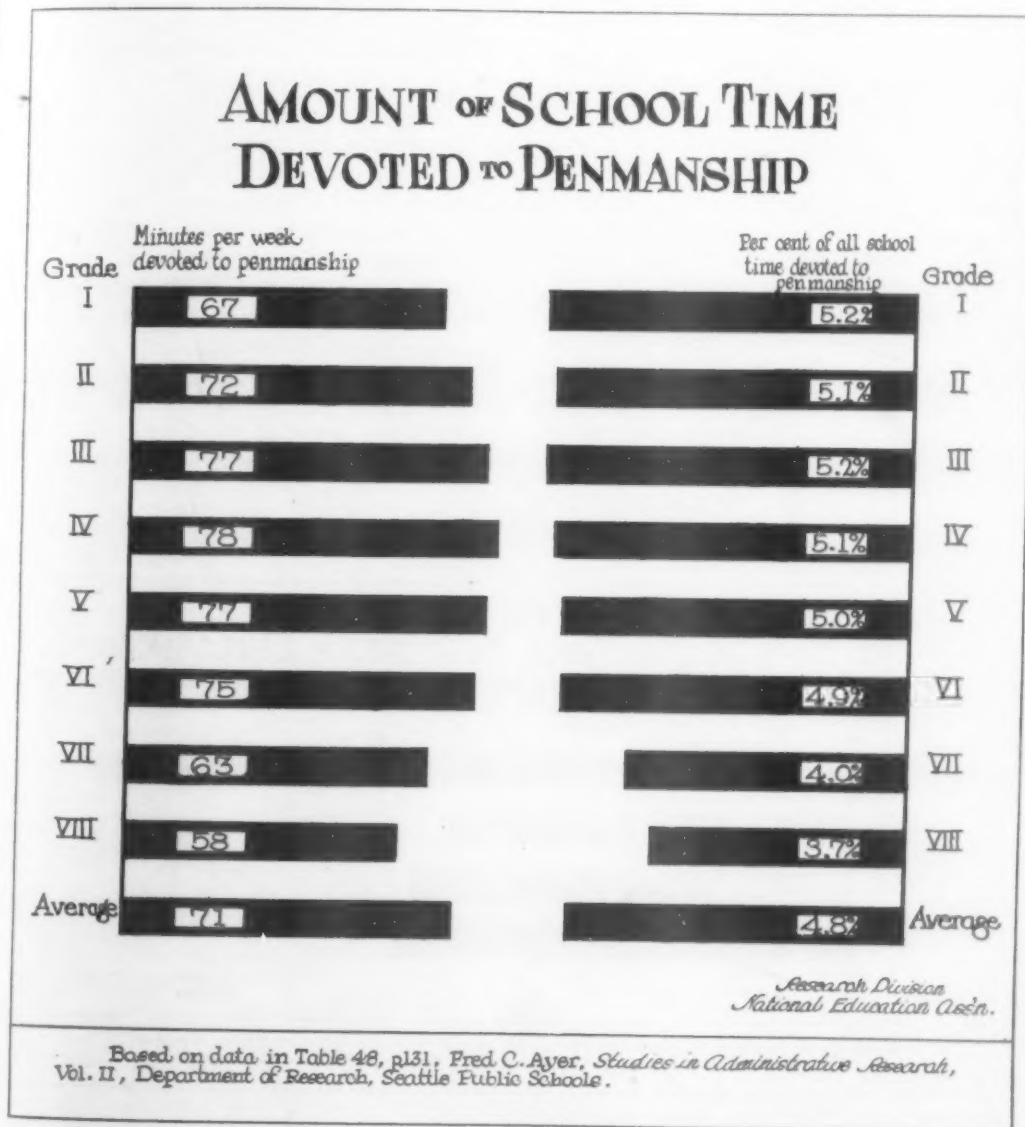
Based on data in Table 49, p. 132, Fred C. Ayer *Studies in Administrative Research*
Vol. II Department of Research, Seattle Public Schools.

This and subsequent charts in this section will reveal the practice as to subject time allotments in large cities of the country.

Is such practice a safe guide to those charged with the drafting of courses of study? This question cannot be answered with certainty. The opinion and experience of a considerable number of persons is generally more reliable than that of a few. On the other hand, *the prevailing practice* is not necessarily *the best practice*. An average of the practice resulting from many discordant ideals may be worthless.

Most people would agree, however, that considerable deviation from common practice is justified only for carefully thought out reasons. If for some good reason a city wished to lift the ability of its children considerably above the average standard in a particular subject such as handwriting, an allotment of time to handwriting above that of common practice might be defended. Such an allotment might also be defensible as a part of a scientific experiment. On the other hand, it would be indefensible to deviate significantly from gen-

CHART II



eral practice on no other basis than the vigorously expressed opinion of a few individuals. The amount of time set apart definitely for a subject such as penmanship would also vary according to the attention incidentally given to this subject by the teachers of other subjects. In short, the facts concerning time allotments presented in this section need to be considered, but should not be uncritically accepted as a basis for course of study preparation.

Research and the Curriculum in Handwriting

Penmanship was one of the first subjects to come under the influence of the modern movement for the scientific study of education. The results of a considerable number of thoroughly scientific studies are available in published form. The findings of these investigations cannot be ignored by those who would draft modern courses of study in penmanship. What are some of the questions that confront every committee charged with the drafting of a course of study in penmanship which may be illuminated by the results of research in this field?

How Much Time for Handwriting?

In a careful study made in 1924, forty-nine large cities of the country reported the time

allotments to penmanship indicated in Chart II. These allotments pertain to the eight-grade type of elementary school. It is possible that they do not apply to the upper grades where the junior high school organization exists.

Is the tendency to increase or to decrease the time given to handwriting? This question is answered in Chart III. Much less time is being given to handwriting now than was given a generation ago. The addition of subjects to the curriculum during the last twenty years seems not to have reduced the time allotted to penmanship.

Charts II and III reveal the practice as to the time allotted to handwriting in large cities of the country.

What Quality and Speed in Handwriting Can Children Attain?

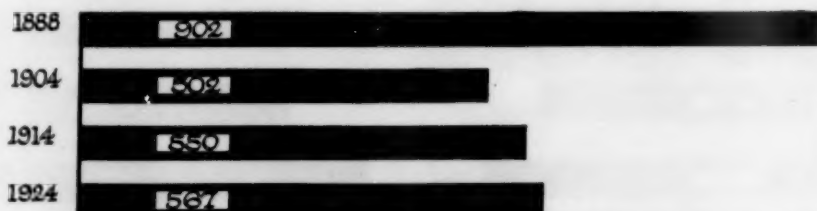
The capacity of children must be a prime consideration in the drafting of all courses of study. Freeman's studies give us reasonably reliable figures as to what speed and quality children attain in handwriting under various amounts and kinds of training.¹

The standards given in Table 1 are the results of testing thousands of children in a large number of school systems scattered throughout the country. The standards given are not the averages for all children tested. They are the

¹ *Research in Constructing the Elementary School Curriculum*. Third Yearbook, Department of Superintendence, National Education Association, Washington, D. C., p. 206.

CHART III

TOTAL MINUTES PER WEEK ALLOTTED TO PENMANSHIP IN GRADES 1-8 IN ELEMENTARY SCHOOLS



Research Division
National Education Assn.

Based on data in *Studies in Administrative Research*, Vol. II, Department of Research, Seattle Public Schools, p. 134.

actual achievements of children in a large number of selected schools taught by teachers with good training and ability using good methods of instruction.

TABLE 1.—ACTUAL ACHIEVEMENT IN SPEED AND QUALITY OF HANDWRITING ON AYRES SCALE IN SELECTED SCHOOL SYSTEMS

	Grade						
	II	III	IV	V	VI	VII	VIII
Speed.....	35	48	56	65	69	73	78
Quality.....	44	46	49	55	59	65	68

Read table thus: In a large number of selected school systems where writing is taught under the best conditions, children in the second grade on the average write 35 letters per minute of a quality 44 on the Ayres Scale. Similarly read the figures for the other grades.

Data from *Research in Constructing the Elementary School Curriculum*, Third Yearbook, Department of Superintendence, National Education Association, Washington, D. C., 1925, Table 24, p. 206.

The scores indicated in Table 1 were not attained as the result of an excessive amount of time given to handwriting. Cities attaining these standards allotted 73.4 minutes per week for penmanship. This approximates the average of 71 minutes given in Chart II.

Speed and Quality Defined

Where figures are given for "speed" in penmanship, they mean number of letters written per minute.

¹ *First Revision of Bibliography of Educational Measurements*, Bureau of Cooperative Research, Indiana University, Bloomington, Indiana. 1925. p. 59.

Quality is measured in terms of the standards of the Ayres Handwriting Scale, Gettysburg Edition. This is necessary since many of the pertinent studies in this field used this scale as an instrument of investigation. Copies of the complete scale should be consulted by those not familiar with it. Figure II indicates what quality of 60 means on this scale.

It should be added that the Ayres is but one of several scales with which course of study committees should be familiar. An excellent annotated bibliography of handwriting scales now available has just been published by Indiana University.¹

A Suggested Standard for Quality and Speed

From the study of a large amount of data and a consideration of the various factors involved, Freeman suggested the tentative norms or standards given in Table 2.

TABLE 2.—PROPOSED STANDARDS FOR QUALITY AND SPEED ON AYRES SCALE

	Grade						
	II	III	IV	V	VI	VII	VIII
Speed.....	36	48	56	65	72	80	90
Quality.....	44	47	50	55	59	64	70

Research in Constructing the Elementary School Curriculum, Third Yearbook, Department of Superintendence, National Education Association, 1925, Table 25, p. 207.

FIGURE II

Score 60 on Ayres Scale, Gettysburg Edition

Four score and seven years ago our fathers brought forth upon this continent a new nation, conceived in liberty, and dedicated to the

These standards are somewhat higher than those found in the majority of cities actually surveyed. They have been attained in some cities, however, and are not unreasonable to expect with an average allotment of time to handwriting, provided capable teachers using good methods are directing children in the use of that time.

Need for Standards

A recent investigation indicates that a disappointing percentage of cities have failed to make the progress that might have been expected in setting up standards for measuring achievement in handwriting. Considering the validity and simplicity of writing tests, now readily available, no city should draft and put into effect a course of study that does not set up definite standards to be attained in this subject in each grade.

Part of the failure in the past in this regard is probably due to the attention that has been given to this matter by the advocates of different systems of handwriting. The standards suggested by six systems of penmanship instruction are reported in a recent study, where they may be consulted by those interested.¹ The value of the standards set up by penmanship systems differ considerably from a scientific viewpoint.

Definite standards for each grade both in speed and quality of penmanship should be a part of every modern course of study. The standards suggested in Table 2 may tentatively be accepted, to be later modified on the basis of experience and further scientific investigation. A better procedure might be for a committee of teachers, under a trained leader, to study the scientific literature on penmanship referred to in this Bulletin and, on the basis of the material in these studies and of their knowledge of particular conditions in their community, to agree upon tentative standards that seem best for their city.

What Quality and Speed in Handwriting Does Life Demand?

In the preceding paragraphs evidence is given indicative of the time schools are giving

to handwriting, and as to the speed and quality in handwriting that children have attained. This evidence is not enough. It might be that the demands of life call for considerably greater skill in handwriting than children are attaining. Increased time and higher standards would then be justified.

What quality and speed in handwriting will life demands require of children when they leave school?

Penmanship Demands in Social Correspondence

A scoring of specimens of writing of a large number of correspondents reveals the fact that 86.5 per cent of adults in social correspondence write with a quality of 60 or less on the Ayres Scale; the average of the whole group being 49.5.

Investigation has also been made of the judgment of adults as to the quality of handwriting adequate for social correspondence. Of 827 adults, made up of various types of individuals, 81 per cent considered the quality 60 or more on the Ayres Scale as satisfactory for social correspondence. A majority of the whole group considered 50 satisfactory. Those who were not teachers set slightly higher standards than did teachers. More than 60 per cent of the non-teachers considered quality 60 on the Ayres Scale satisfactory.

In the light of these facts it appears reasonable to accept the conclusion of Koos that it is difficult to see why, so far as the demands of social correspondence are concerned "a pupil should be required to spend the time necessary to learn to write better than the quality 60. There is even considerable justification for setting the ultimate standard at 50 as this demand touches every member of society. All the children in the schools should be required to attain the standard set."²

Penmanship Demands in Occupations

Information has been gathered concerning the judgment of business firms as to the quality of handwriting demanded in the various types of occupations. The majority of the firms select 60 on the Ayres Scale as being satis-

¹ Ayer, Fred C. *Studies in Administrative Research*, Volume II. p. 80.

² *Research in Constructing the Elementary School Curriculum*, Third Yearbook, Department of Superintendence, National Education Association, Washington, D. C., 1925, p. 210.

factory in quality in the occupations which they represent, although a quality above this was frequently regarded as an asset. In a few specialized callings, such as addressing envelopes, a still higher quality is demanded. Speed is usually recognized as of less importance than quality, although a reasonable degree of speed is desirable.

What to Expect of a Sixth Grade Child

From the evidence given we may tentatively conclude that "at the end of the sixth grade the child should be expected to write a reasonably fluent and a plain, legible hand. More specifically each child should have set before him as a minimum standard a quality equal to 50 on the Ayres Scale and a speed of 70 letters per minute. Those children who have not attained this standard by the end of the sixth grade should be given continued drill in the seventh grade or the junior high school. The class median standard in quality for the end of the sixth grade should be 60 on the Ayres Scale."¹

If these standards are attained the general demands of life in such activities as social correspondence will have been met and a sufficient foundation will have been laid for special training demanded in certain vocations. However, such special training should not be attempted in the elementary school.

The work of the junior and senior high school should result in some improvement without specialized handwriting drill. When special training is demanded as a preparation for particular occupations it should be given in vocational classes in the grades beyond the sixth.

Research and the Curriculum in Arithmetic

Research in arithmetic has provided us with findings which no arithmetic course of study committee can afford to overlook. Three hundred and twenty educational investigations relating to arithmetic have recently been col-

lected and analyzed by Judd and Buswell² of Chicago. Many of these same studies are reviewed in Chapter III of the *Third Yearbook* of the Department of Superintendence.

Those in charge of curriculum revision in arithmetic should carefully study both of these books. In many cases it will be found desirable to consult the original studies which they summarized.

Major Curriculum Problems in Arithmetic

Among the questions which all arithmetic course of study committees face and relative to which there are some scientific data by way of answer are these:

- I. How much time is allotted to arithmetic in the elementary grades?
- II. When should systematic instruction in arithmetic begin?
- III. What are the socially useful processes in arithmetic?
- IV. What topics should be eliminated from traditional arithmetic courses?
- V. According to what criteria should drill be organized?
- VI. What is the best procedure for building up ability to handle concrete or reasoning problems?
- VII. What contributions have psychological studies made to the arithmetic course of study?
- VIII. What help from standard tests?
- IX. What has experimental education to contribute?
- X. What shall be the method of curriculum determination in arithmetic?

None of these questions can be answered with finality, but there is some scientific evidence on each of them.

I. How Much Time Is Allotted to Arithmetic in the Elementary Grades?

The average number of minutes per week and the per cent of all school time devoted to arithmetic in grades one to eight in 49 large cities in 1924 is shown in Chart IV.

¹ *Research in Constructing the Elementary School Curriculum*, Third Yearbook, Department of Superintendence, National Education Association, Washington, D. C., 1925, p. 216.

² Buswell, Guy T. and Judd, Charles H., *Summary of Educational Investigations Relating to Arithmetic*. University of Chicago Press, 1925, 212 p.

Is the tendency to increase or decrease the amount of time devoted to arithmetic? Chart V shows that in the past twenty years the average tendency has been to decrease slightly the time devoted to arithmetic. A review of time schedules in individual school systems, however, shows wide divergence as to time allotted to arithmetic.¹ Criticism of this spread of variation from the median or average practice in any one school system should be

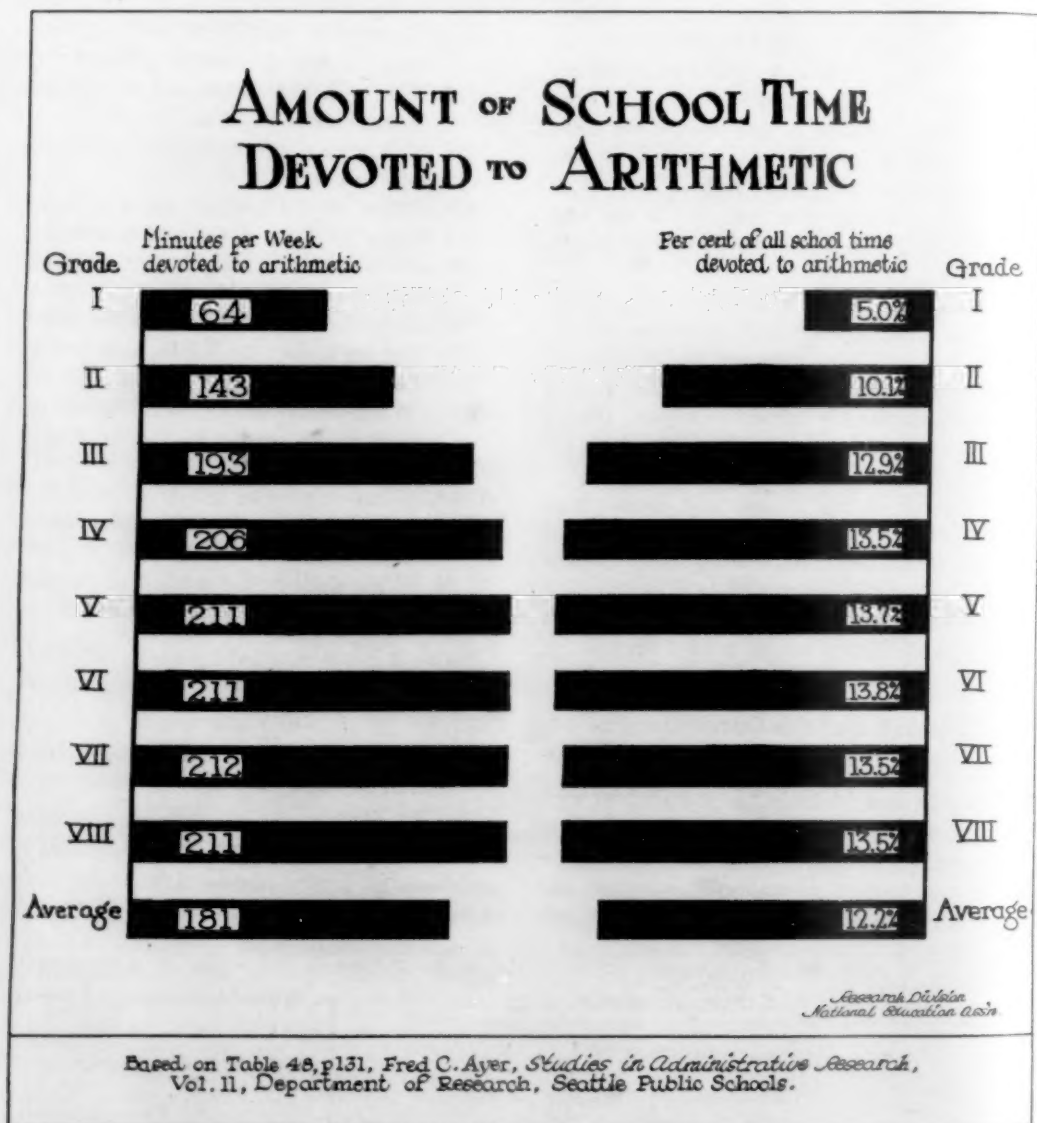
withheld until a careful analysis of local community and individual needs has been made.

II. When Should Systematic Instruction in Arithmetic Begin?

While the available data relative to this question are incomplete, they point to the desirability of more attention to reading ability in the first grade and the omission of formal number work, except for counting.

¹ See Second Yearbook, *The Elementary School Curriculum*, Department of Superintendence, National Education Association, 1924, p. 139-148.

CHART IV



Walter A. Jessup summarized the reports of 754 city school superintendents in 1914 relative to the time for beginning formal arithmetic text-book instruction and found that formal text-book work ordinarily did not begin until the second or third grade and in some cities even later.

From the small amount of available data, one draws the tentative conclusion that the time usually spent on formal number work in the first grade might, perhaps, better be spent in developing comprehension-ability in silent reading. There is some evidence which shows that with this ability developed, children who did not begin formal arithmetic until sometime in the second or at the beginning of the third grade would at the end of the third grade not be handicapped in competition with children who had had formal number work regularly during the first and second grades.

There appears to be agreement on these points:

1. The introduction of number work should deal with concrete objects. Games have been recommended by many supervisors as among the best devices for early number training.

2. Experience must in all cases precede formal work in calculating. There is little or no point to having children attempt to solve problems when the setting of the problem is entirely unknown to them.

III. What Are the Socially Useful Processes in Arithmetic?

What shall be included in the course of study? A number of research studies have attempted to analyze the demands of practical life as a basis for selecting processes used in business practice.

What has been done to determine the demands of business?

1. Tests have been made of the arithmetical abilities of employees in commercial establishments.
2. Statements have been secured from business men as to what arithmetic they actually employ in everyday life.
3. Courtis arithmetic tests have been given to several hundred employees of one of the largest trust companies and one of the largest department stores in Boston and the results achieved compared with those of pupils in the eighth grade in the Boston schools. Courtis arithmetic tests have also been given to members of Rotary and Kiwanis Clubs and results achieved compared with those made by eighth grade pupils.
4. There has been analyzed 14,583 problems contributed by 4,068 different persons representing 155 different occupations to determine the nature of arithmetic used by adults in their social

CHART V

TOTAL MINUTES PER WEEK ALLOTTED TO ARITHMETIC IN GRADES 1-8 IN ELEMENTARY SCHOOLS



Research Division, National Education Assoc.

Based on data on page 133, Fred C. Ayer, *Studies in Administrative Research*, Vol. II, Department of Research, Seattle Public Schools

and business relations. In addition, 7,345 problems were gathered from six states.

5. A study has been made of the arithmetic used in a cook-book, factory payroll, marked-down sales advertisements, and general hardware catalogue.
6. A more or less reliable index of arithmetic needed by the clerk in selling goods and by the consuming public in purchasing goods was secured by an analysis of 4,661 bills of sale.
7. The extent to which mechanical calculating devices are made use of in business houses has been investigated. Inquiry was also made as to the use of short-cut methods, and the nature of arithmetic utilized by salesmen and consumers.
8. Analysis has been made of questionnaires sent to bank employees in nine states, relative to the facts in banking that all people in a community should know.
9. Mathematics necessary to carry successfully a course in freshman chemistry and also a freshmen college course in clothing has been determined by analyzing text-books in each of these subjects.
10. Mathematics employed in the news, special articles, editorials, advertisements, legal notices, market reports, sporting pages, etc., has been discovered by analyzing one issue of twenty newspapers and magazines widely read by the general public.

The findings of each of these studies are reported in Chapter III of the *Third Year-book* of the Department of Superintendence. Course of study committees are referred to this chapter and also to the Judd, Buswell study. A bulletin of this length cannot attempt to set forth in detail findings relative to the ten types of research just listed. Scientific work in each of these fields is available, however, in easily accessible and well summarized form. These findings should be known to every course of study committee responsible for arithmetic revision. Disregard of them can no longer be excused. Such procedure frankly accepts ignorance as a basis for work when intelligence is possible.

As an introduction to further study, the principal conclusions (many of them still tentative), which may be drawn from the ten types of investigations listed above, are indicated below.

Research Findings As to Business Usage of Arithmetic

1. Many arithmetical processes consuming much time can be omitted from the course of study without loss, according to surveys of social and business usage.

2. The schools and the course of study should take into consideration the industrial and commercial interests of the community.

3. Problems solved in actual usage are brief and simple. They chiefly require the more fundamental and more easily mastered processes.

4. Several studies are more or less in agreement in suggesting the inclusion of these topics: Buying and selling of goods, especially food and clothing, saving and loaning money, mortgages, modern banking methods, building and loan associations, keeping simple accounts, investing money, bonds as investments, labor and wages, interest and rent, and insurance.

5. The range of variation in arithmetical ability of even small groups of employees shows that this ability is but one of many factors in determining the efficiency of an employee.

6. In one study of business and social relations, eighty-five per cent of all problems involved the use of money in either the buying or selling of goods.

7. The most common rates of discount are: 5, 10, 20, 25, 30, 35, 40 and 50 per cent.

8. Results achieved in the Courtis tests by pupils in Grade VIII of the Boston schools were lower than the trust company and department store employees in addition; in subtraction, the pupils were slightly slower but more accurate; in multiplication, the pupils solved almost as many problems and were much more accurate; and in division, the pupils excelled the employees in both speed and accuracy.

In general, the members of Rotary and Kiwanis Clubs attempted more exercises than children in the eighth grade, and were more accurate in addition and less accurate in multiplication than the children as indicated by Courtis general standards.

9. Arithmetic needed by any individual for actual computation is limited, and is being further reduced by the introduction of calculating machines.

10. An analysis of the arithmetic required in college chemistry and clothing courses led to the conclusion that with the basic arithmetic taught and with the evident need at hand, college students will master additional arithmetic as needed.

11. The essential processes which represent the minimum requirements in arithmetic work for grade pupils, according to Wilson are:

- a. Writing and reading numbers—integers, common fractions, decimals.
- b. Fundamental processes in integers, common fractions, and decimals.
- c. Simple factoring (L. C. M., G. C. D., and cancellation).
- d. Denominate numbers, addition, subtraction, and one-place reduction.
- e. Use of the common aliquot parts.
- f. Simple percentage, with simple interest and bank discount.
- g. Mensuration—perimeter, surface, and contents of common plane figures and solids. Square root.
- h. Business practices—borrowing, saving, loaning, and investing money; banking; taxes and public expenditures; keeping simple accounts.

12. As to the difficulty of problems, one may conclude from the more or less incomplete studies made up-to-date that if the following types of problems involving the four fundamental operations are included in a course of study, their mastery will assure the great majority of children the successful handling of most of the problems met in daily life. For the most part, the standards suggested below include the greatest degree of difficulty that any one research study recommended, rather than an average of several studies.

(a) **Addition**—problems with not more than five places in any addend or more than six addends. The most common form of problem in certain types of salesmanship consists of adding two three-place numbers.

(b) **Multiplication**—problems in which the multiplicand is not over five figures in width, and the multiplier not over four figures in width. In the vocation of department store selling, Charters found that the chances are

ninety-seven out of one hundred that in multiplication the multiplier will be twelve or less and the multiplicand three places or less.

(c) **Division**—the dividend, five figures in width; the divisor, four figures in width. A study of arithmetic needed in certain types of salesmanship showed that by far the most common problems in division had two or three-place numbers in either the dividend or the divisor.

(d) **Fractions**—the most used are halves, thirds, fourths, fifths, sixths, eighths, tenths and twelfths. Ninths, sixteenths, twenty-fourths and one-hundred-and-forty-fourths are used, but much less frequently.

(e) **Denominate numbers**—the terms most frequently used in problems involving common weights and measures are: Inches, feet, yards, ounces, pounds, dozens, gross and quarts.

IV. What Topics Are Being Eliminated from Arithmetic Courses?

According to the arithmetic report in the *Third Yearbook* of the Department of Superintendence:

Most superintendents of schools today would agree to the elimination of the following processes:

Compound numbers: their addition, subtraction, multiplication, division

Greatest common divisor, and least common multiple beyond the power of inspection

Long confusing problems in common fractions

Complex and compound fractions

Reductions of denominate numbers

Cases two and three in percentage

Annual interest

Compound interest, except savings

True discount

Proportion

Ratio beyond the ability of fractions to satisfy

Partnership with time

Longitude and time

Exchange, domestic and foreign

Apothecaries' weight

Troy weight

Table of folding paper, surveyor's table, table of foreign money

Much of mensuration—trapezoid, trapezium, polygons, frustrums, spheres

Cube root

The metric system.

The curriculum in arithmetic should make no provision for formal drill on the above processes. This does not preclude some informational attention to them, or some special attention whenever one of them is involved in a life situation studied in detail by the pupils.

V. According to What Criteria Should Drill Be Organized?

Judd and Buswell in their *Summary of Educational Investigations Relating to Arithmetic* list thirty-three references dealing directly with the subject of drill. Only the briefest mention is made here of some of the findings of these studies.

1. How much time should be devoted to drill? The great variation in time allotted to drill in arithmetic by different teachers, reflects the lack of scientific information with regard to the amount of time that ought to be provided.

2. Should drill be systematic or incidental? According to the arithmetic report of the *Third Yearbook* of the Department of Superintendence:

The trend of evidence is that in the intermediate grades, when drill is confined to processes that are useful and well understood, regular time spent upon systematic drill gives results unequalled by any other type of procedure.

In general, while research has shown that the effect of drill varies according to the length and distribution of the practice period, no particular length or distribution has been shown to be of outstanding value.

3. Can drill be formulated to meet definite specifications? F. B. Knight lays down these eight specifications for drill organization for maintaining acquired skills:

- a. Drill should be on the entire process.
- b. Drill should come frequently and in small amounts.
- c. Each drill unit should be a mixed drill.
- d. Drills should have time limits.
- e. Drills should have accuracy standards.
- f. Examples in a unit of drill should be in order of difficulty.
- g. Drill units should include verbal problems.
- h. Drills should facilitate diagnosis.

VI. What Is the Best Procedure for Building Up Ability to Handle Concrete or Reasoning Problems?

What are the causes of pupils' failure or inability to reason correctly? Research has shown that some of the causes are these:

1. Lack of general ability in silent reading.
2. Lack of familiarity with technical terms in arithmetic.

3. Carelessness in reading.
4. Lack of experience necessary to understand the "setting of the problem."
5. Inadequate skill in computing.
6. Lack of knowledge of such essential facts as tables of weights and measures.
7. Inability to see the relationships in the problem so as to choose the proper operation.

W. J. Osburn in his *Study of Diagnostic and Remedial Treatment of Errors in Arithmetic Reasoning* states that out of 30,000 errors made by 6,000 children on the Buckingham Problem Test, Form I, "about 60 per cent of the wrong answers are due to failure right in the beginning to understand what is to be done."

8. Inability to do reflective thinking: low mental capacity.

How to increase the ability of pupils to solve arithmetic problems.—Tests have been made to show that problem solving ability can be increased, (1) by teaching pupils to analyze text-book problems, (2) by solving problems containing data from actual life situations, (3) by solving problems without numbers or actual computations, and (4) by studying the difficult words that appear in text-book problems.

Relation of reasoning ability to general intelligence.—Studies have been made which seem to justify the conclusion that there is a closer relationship between reasoning ability and general intelligence than between reasoning ability and skill in computation. Consequently, pupils with low intelligence are unlikely, even under the best instruction, to succeed well in arithmetic reasoning. Conversely, pupils with high intelligence are able to reason fairly well without any systematic instruction in problem solving.

VII. What Contributions Have Psychological Studies Made to the Arithmetic Course of Study?

These statements result from research studies made to discover the psychological principles which should underlie the organization of the curriculum:

1. Arithmetic is the most difficult subject attempted in the school for pupils of low-grade intelligence.

2. Mastery of number is usually a mark of general intelligence.
3. Arithmetic is one of the most serious sources of non-promotion in the schools.
4. Reading of numbers and counting are the two chief uses which the child has for arithmetic in the early grades.
5. Many facts of social life have to be learned by children before certain sections of present courses in arithmetic are intelligible.

VIII. What Help from Standard Tests?

Only the briefest mention is made here of the results derived from the application of arithmetic tests. The reader is referred to Judd and Buswell's *Summary of Educational Investigations Relating to Arithmetic* for discussion of the questions: What kinds of arithmetic tests have been devised? What kinds of standards do the applications of these tests yield? What refinements have been made in the construction and administration of tests? What is the effect on the schools of the use of tests?¹

Chief helps from standard tests.—Research shows that standard tests are helpful in the following ways:

1. They supply both teachers and pupils with objective standards by which they can estimate their rate of progress. This encourages pupils to do better work.
2. By emphasizing tool material, tests according to Wilson, have helped in eliminating the traditional and useless.
3. Properly used tests help in motivating drill on either a class or individual basis. They also show whether or not further drill is necessary.
4. Standardized tests make it possible to write drill specifications that are specific and definite.
5. Standard tests have helped to emphasize the fact of individual differences.
6. Tests have made it possible to develop definite norms of accomplishment that are adapted to different levels of intelligence.
7. By means of tests, difficulties of individual pupils can be diagnosed.

8. Teachers, by the aid of tests, discover the actual needs of classes and of individuals.

IX. What Has Experimental Education to Contribute?

The nature of the various arithmetical processes has been analyzed in a large group of studies.² Only a few questions are raised here.

How many number combinations should be taught in addition? It is generally agreed at present that many more combinations should be taught than formerly. Osburn goes so far as to recommend drill in all the combinations used in column addition up to a sum of 40.

What method of subtraction is most effective? This is one of the most debated questions in arithmetic. Experimental evidence to date seems to favor the "addition" method of subtraction rather than the method of "decomposition."

X. How Shall the Curriculum in Arithmetic Be Determined?

The *Third Yearbook* of the Department of Superintendence suggests these points, drawn directly from accumulated scientific data and experience, as the basis for a tentative curriculum-making procedure in arithmetic.

1. The survey method is employed. This method, as a result of detailed and painstaking study, reveals what arithmetical knowledge and skill is actually used in life, and accepts the "arithmetic of use and application in the common affairs of life" as that which the school should teach. The use of the survey method has greatly modified the content of arithmetic courses. The survey method is valuable not only in determining content, but also in furnishing effective means of overcoming prejudices of parents and of teachers. Custom and tradition give way before the facts which an arithmetic survey of a community brings to light.³

2. Motivation is specifically provided for.—Formal text-book work and meaningless drill bring poor results. Motivation is essential if the most effective learning is to be accomplished. It is not enough that motivation

¹ See also *First Revision of Bibliography of Educational Measurements*, Bureau of Cooperative Research, Indiana University, Bloomington, Indiana, 1925.

² See: Chapter V, *Summary of Educational Investigation Relating to Arithmetic* by Guy T. Buswell and Charles H. Judd, University of Chicago Press.

³ For an excellent discussion of the value of the survey method see: *Report of Committee on Arithmetic Revision*, Addresses and Proceedings of the National Education Association, 1924. p. 324-330.

Also see *How to Make a Course of Study in Arithmetic* by M. E. Herriott, Bulletin, University of Illinois, Urbana, October 12, 1925.

should be hoped for. A course of study should recognize motivation as an integral part of arithmetic instruction.

3. Experience should precede drill.—Drill is important, but drill must keep behind meaning, if it is to avoid becoming a meaningless process. The arithmetic course must, therefore, make definite provision for organizing and extending the knowledge basic to intelligent arithmetical calculation. The course of study should recognize this fact in its suggestions to the teacher for administering the curriculum. The teacher should be offered definite helps whereby isolated written problems may be replaced by those involving life situations—trips, the study of business procedures, the use of the school bank, the review of advertising in local papers—these and other methods should be employed to bring children into close contact with life situations in which arithmetic is used.

Research and the Curriculum in Spelling

Research has perhaps yielded more definite results in the field of spelling than in any other elementary school subject. Courses of study and text-books in spelling are being completely made over as a result of research findings.¹ These are among the questions which course of study committees face, and relative to which some scientific research findings are available.

Time Allotted to Spelling

Chart VI shows the average number of minutes per week, and the per cent of all school time devoted to spelling in grades one to eight in forty-nine large cities in 1924. Chart VII shows that in the past ten years there has been a slight decrease in the total number of minutes per week allotted to spelling. This decrease is probably due to one or more of these factors:

1. A certain amount of spelling is now taught incidentally.

2. Improved methods of teaching require less time.

3. Fewer and more carefully selected words are taught.

What Words Shall be Taught?

The spelling lists in older texts contain many words of infrequent use and unusual difficulty. Economy of time and effort in teaching demand a vitalized spelling list, consisting of words commonly used in the writing of children and adults.

What words are most frequently written in life outside the school? A number of reliable investigations provide us with a minimum list of such words. Word lists, showing frequency of occurrence of each word, have been compiled from thousands of personal and business letters, communications to newspapers and magazines, committee reports, minutes and resolutions, parents' excuses to teachers, letters written by literary men, correspondence of a single individual over a period of years, and letters of application and recommendation. The number of running words included in these studies amounts to several million.²

A study is now under way which brings together all existing data, collected from the above studies, concerning adult writing needs. The total frequency of each word has been determined, the words arranged in order of frequency and the 10,000 most important words listed.

In determining these 10,000 words, account was taken not only of the total number of times a word was used but also of the number of different types of writing in which it was found. Some selected results from this study will be published in the 1926 Yearbook of the Department of Superintendence, available in February, 1926. The words which will appear in this publication should be valuable to those constructing courses of study in spelling.

What is the noun most frequently used in both the English and German languages? What would be your answer to this question on the basis of guesswork? Would it be in agreement with the fact revealed by Horn's

¹ For detailed review of research studies in spelling see:

Research in Constructing the Elementary School Curriculum, Chapter IV, Department of Superintendence, Washington, D. C., National Education Association, 1925.

Eighteenth Yearbook, Part II, National Society for the Study of Education, Chapter III, Bloomington, Indiana, Public School Publishing Company, 1922.

Tidyman, W. F. *The Teaching of Spelling*, Yonkers, N. Y. World Book Company, 1919.

² For an analytical review of these studies, see Chapter IV, *Research in Constructing the Elementary School Curriculum*, Department of Superintendence, National Education Association, 1925.

extensive study of adult writing, that *time* is the most frequently written noun in the English language? Would you have guessed that in a similar study of nearly eleven million German words the noun ranking first in frequency of usage is *Zeit* (time)?

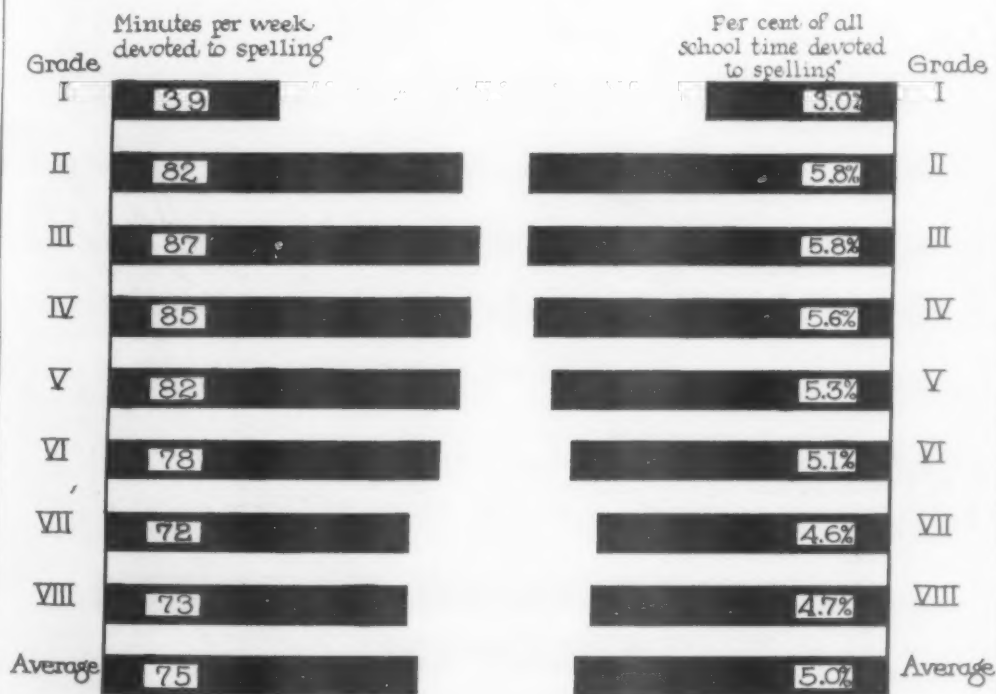
Here is an excellent example of how research may replace opinion with fact. Detailed and patient study such as this is rapidly making curriculum construction a scientific procedure.

What words are most frequently used in writing done in school? To determine what

words, grade for grade, children use in their own free written speech, and what words, therefore, they need to know how to spell in their own writing, a number of studies have been made, involving analyses of from as few as 180 to as many as 75,000 themes. In each study the number of different words used was listed and the frequency of use tallied. Each study showed a relatively small vocabulary in proportion to the total number of words analyzed. Among the lists compiled, there was considerable lack of agreement. Both of

CHART VI

AMOUNT OF SCHOOL TIME DEVOTED TO SPELLING



Research Division
National Education Assn.

Based on data in Table 48, p.131, Fred C. Ayer, *Studies in Administrative Research*, Vol. II, Department of Research, Seattle Public Schools.

these results are probably due to the fact that the list of topics upon which the children wrote themes was too limited to discover the total list of words which a child is capable of using. One author draws this conclusion, "The vocabulary of theme investigation falls so far short of adult requirements as to constitute inadequate preparation for adult needs."

Minimum word lists based on words most frequently missed in children's compositions have also been compiled. To discover what should be the content of a high school spelling course, the misspelled words of all written work, including note-books of a certain group of high school pupils, were listed. Misspelled words in the written work of 2,414 candidates for the College Board Entrance Examination in English over a period of seven years were also listed. These ten words contributed over six per cent of the errors: *too, its, believe, together, their, principal, committee, therefore, separate, and pleasant*.¹

Choice of hypothesis influences to a large degree the course of study in spelling. This point is illustrated by Horn² when he states these two possible bases for selecting the 1,000 most important words:

1. The frequency with which words are written.
2. A combination of these factors: (a) The fre-

quency with which words are written, (b) Difficulty of spelling them.

Discussing these two hypotheses Horn writes:

It is obvious that the 1,000 words selected on the basis of the first hypothesis would be very different from the 1,000 selected on the basis of the second hypothesis. For example, the word *action* is found about ten times as often as the word *accommodate*. It occurs in the first 1,000 words while *accommodate* occurs in the third thousand. If frequency of use is taken as the measure of importance, *action* would be included among the 1,000 most important words and *accommodate* would not. But *action* is misspelled by only one eighth grade student in a hundred, while *accommodate* is misspelled by 61 eighth grade students in a hundred. Taking both use and importance into account, *accommodate* is more than five times as likely to be misspelled as is *action*. Using the product of frequency and difficulty as a measure of importance, *accommodate* would be included among the first 1,000 important words while *action* would not.

How many words can an elementary school pupil of average ability learn to spell? Research has not yet determined a definite maximum number. Horn writes: "We have reliable data to show that, using modern improved methods, it is possible for 'the average boy or girl' by the end of the eighth grade to spell more than 4,000 words with an accuracy of more than 90 per cent."³

¹ *Research in Constructing the Elementary School Curriculum*, Department of Superintendence, National Education Association, p. 143.

² Horn, Ernest. *The Curriculum Attacked Scientifically*. Official Report, Department of Superintendence, 1925, p. 180-182.

³ *Research in Constructing the Elementary School Curriculum*, Department of Superintendence, National Education Association, p. 112.

CHART VII

TOTAL MINUTES PER WEEK ALLOTTED TO SPELLING IN GRADES 1-8 IN ELEMENTARY SCHOOLS



Research Division
National Education Assn.

Based on data in *Studies in Descriptive Research*, Vol. II, Department of Research,
Seattle Public Schools, p. 134.

Principles of Method in Teaching Spelling Derived from Scientific Investigation¹

In Chapter III, Part II, *The Eighteenth Yearbook* of the National Society for the Study of Education, Horn lays down forty-one principles of method in teaching spelling. Naturally some are of greater importance than others. Each principle, however, is based on the findings of one or more research studies. Teachers of spelling should familiarize themselves with these principles of method and test them out, for as yet evidence as to the most economical method of teaching spelling is not complete. In the opinion of Horn, there are five factors of major importance on which evidence is clear. Horn expresses these five factors in the following rules:

1. Test all words before teaching.

Note: This will make it possible for each pupil to work on those words which he has missed. The only practicable way of obtaining reliable information relative to the difficulty of words for a particular child is the use of a preliminary test.

2. Let each child work only on the words difficult for him and provide him with a definite method of learning them.
3. Provide for rigorous reviews.
4. Show the pupil his progress daily, weekly, monthly, and yearly.
5. Keep up the interest.

Should the Pronunciation, Meaning, and Use of Words be Taught as Part of the Spelling Lesson?

According to Tidyman, the pronunciation, meaning, and use of words are more properly taught in connection with other phases of language work. He writes:

The old practice of spending one-half to two-thirds of the time in spelling in laboriously working out, with dictionary in hand, the pronunciation, meaning, and use of words was a natural consequence of the teaching of large numbers of strange, technical and unusual words. The new content of spelling renders this extreme emphasis unnecessary. By selection, the words that we teach are the words with which the child is familiar in his oral and written composition.²

Research and the Curriculum in Reading

Three notable summaries of research findings in the field of reading.—Studies are available which provide concrete evidence that habits of intelligent reading are essential both to successful participation in the activities of modern social life and to satisfactory progress in school. A larger number of research studies have probably been made in the field of reading than in any other elementary school subject. Within the past year three outstanding publications, analyzing and summarizing research studies in reading, have been issued.

Four hundred and thirty-six reading investigations were summarized in Gray's study for the Commonwealth Fund.³ This report provides school officers and teachers with the facts and principles which must be considered in any serious effort to reorganize courses of study in reading or to improve the technique of teaching. It not only gives a complete statement of progress to date in the scientific study of reading, but also suggests additional problems for investigation.

Part I of *The Twenty-Fourth Yearbook*⁴ of the National Society for the Study of Education contains a 309-page report of the National Committee on Reading. This Committee was appointed to prepare recommendations concerning debatable issues in the field of reading, based on experimental evidence as far as possible, and on expert opinion when evidence was lacking. Recommendations of this outstanding committee are made relative to twelve major problems in reading. These recommendations are of particular help to course of study committees, since they differentiate clearly between what is known in the field of reading, what is merely the best opinion, and what is yet unknown and in urgent need of investigation.

This same Committee, under the leadership of William S. Gray, prepared Chapter V of the *Third Yearbook*⁵ of the Department of

¹For more detailed discussion see: Chapter III, Part II, *The Eighteenth Yearbook* of the National Society for the Study of Education.

²Tidyman, Willard F. *The Teaching of Spelling*, World Book Company, 1919. p. 34-44.

³Gray, William S. *Summary of Investigations Relating to Reading*, University of Chicago Press, 1925. 275 p.

⁴*The Twenty-Fourth Yearbook* of the National Society for the Study of Education. Part I, Public School Publishing Company, Bloomington, Ill., 1925. 356 p.

⁵*Research in Constructing the Elementary School Curriculum*, Department of Superintendence, National Education Association, 1925.

Superintendence. In this Chapter the results of a large number of reading investigations, relating to these twelve specific problems which arise in organizing courses of study in reading are briefly summarized:

1. Aims of reading instruction
2. Fundamental habits in oral and silent reading
3. Growth periods or rates of progress in important phases of reading
4. Children's interests in reading
5. Results of investigations of reading materials
6. Scientific studies in the field of literature
7. Studies of reading vocabularies
8. The evaluation of teaching technique
9. The place of phonetics in teaching reading
10. Provision for individual differences
11. Diagnosis and remedial work
12. Time allotment

Only the briefest mention is made here of the research findings relative to a few of the topics mentioned in the three recently completed summaries just cited. Those engaged in revising reading courses and teachers of reading will want to study these three books and, in many cases, review the original research studies which they summarize.

Among the questions which all reading course of study committees face and relative to which some research findings are available are these:

Time Allotted to Reading

Chart VIII shows that in forty-nine large cities in 1924, more time was given to reading in the first grade than in any other grade; that the amount of time given to reading decreased more or less gradually from the first to the eighth grade; and that approximately seventeen per cent of all school time during the whole eight grades was devoted to reading.

Chart IX shows that the amount of time devoted to reading in 1924 was slightly less than that formerly devoted to reading. This does not mean, however, that less reading is done in the elementary school. Encouragement of silent reading, improved methods of instruction, and provision for many more sup-

plementary books have probably resulted in more reading being done both in school and out of school in less time.

Studies of time allotments show: (1) Wide differences among cities and within school systems as to the amount of time devoted to reading in any one grade; and (2) there is a tendency, particularly in the seventh and eighth grades, to give less attention than formerly to arbitrary daily time allotments.

What Consideration Should Be Given to Silent Reading?

Silent reading is of greater social value than oral.—Oral reading exercises formerly had a prominent part in the daily school program of all elementary pupils. Today teachers recognize that reading is primarily "a means of extending experience and stimulating the thinking powers of boys and girls." Furthermore, the chief purpose of adult reading is to secure information and to keep in touch with current events. Practically all adult reading is done silently. Hence, "if elementary reading fulfills its obligation, it must provide adequate training in habits of intelligent silent reading. This means, not only more reading than is found in the classroom today, but, in addition, more interesting, significant, and thoughtful reading."¹

Children read faster and comprehend more when they read silently.—Several studies have been made to discover the number of words per second adults can read silently and orally. The findings show that many adults read silently from three to five times as rapidly as they read orally. Children also read silently with greater speed.

Studies have been made which show that both children and adults reproduce ideas, gained from silent reading, more clearly than those gained from oral reading. Tests have been made covering definite periods of time, such as two minutes, and also those which required the reading of passages of prescribed length, such as two hundred words. These studies show clearly that comprehension is usually better in silent than in oral reading.

Scientific evidence of the greater social value, economy, and efficiency of silent as compared with oral reading shows the need for the development of effective habits of silent

¹ Gray, William S. "The Importance of Silent Reading." *The Elementary School Journal*, January, 1924, p. 352.

reading in the elementary school. This does not mean that oral reading is to be neglected even though it is to receive relatively less emphasis than formerly. It still has a definite place in the elementary school program.

How Much Reading Should Be Required of Elementary Pupils?

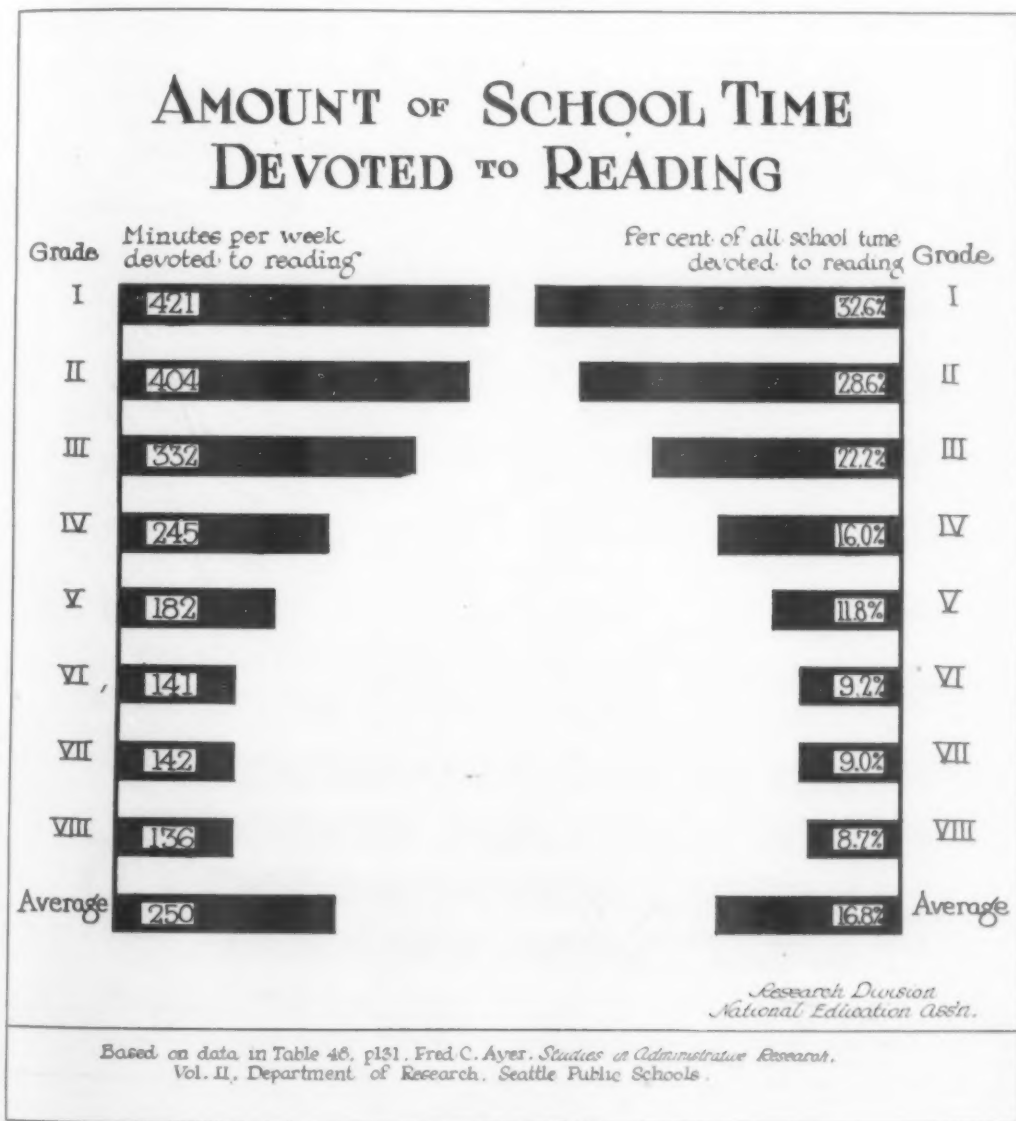
How many pages are read in the first grade?
Woody¹ reports that the median number of

pages read in the first grade in ten school systems of Michigan in 1923 was 157 for the first five months and 371 for the second five months. The range was from less than twenty-four pages to nearly nine hundred pages.

Recommendations based on current practices.—On the basis of the above findings, Woody suggests as a reasonable requirement 175 to 200 pages for the first five months, and

¹ Woody, Clifford. *Practices in Teaching First-Grade Reading in the Public Schools of Michigan*. Bureau of Educational Reference and Research Bulletin 58. Ann Arbor, Michigan. School of Education, University of Michigan, 1923. p. 34.

CHART VIII



as limits of a "zone of safety," 140 to 250 pages; for the second five months, he suggests 375 pages as a reasonable requirement.

A large number of readers and supplementary books should be provided.—A study¹ made in Louisiana shows that in one year the average number of basal texts read in Grades I-VII was increased from two and three-fourths to twelve and that in addition, on the average, seven supplementary books were read in each grade. In the second grade fifteen readers were read. In every grade, the rate and comprehension of the pupils, as measured by the Monroe Standardized Silent Reading Tests, were decidedly below standard at the beginning of the year and distinctly above standard at the end of the year.

From these data one draws the conclusion that: *The ability of children to read more rapidly and to understand better what they read increases with the amount read.*

How Shall Individual Differences Be Provided for in the Teaching of Reading?²

Seven ways of providing for individual differences in teaching reading.—A survey³ of current practice shows that among the methods most frequently used by teachers of reading are these:

1. Testing individual abilities in rate and comprehension
2. Arranging pupils in small groups on an ability basis
3. Grading materials read to fit individual abilities
4. Varying amount of reading practice through:
 - (a) Voluntary reading in free periods
 - (b) Home reading
5. Giving personal attention to individual pupils through:
 - (a) Special help for specific defects
 - (b) Use of better pupils to help poorer
6. Choosing materials to suit individual interests
7. Using one or more of these four methods of instruction:
 - (a) Centering attention upon thought, either through silent reading or through the use of thought questions
 - (b) Motivation
 - (c) Word and phonetic drills
 - (d) Phrase drills.

Experimentation is needed to test out the relative merits of these practices.

¹ Ford, F. A. "Diagnostic Supervision," *Journal of the Louisiana Teachers Association*, April, 1924. p. 30-35.
² See Chapter VII, *Summary of Investigations Relating to Reading*, by William S. Gray, University of Chicago Press.
³ Theisen, W. W. "Provisions for Individual Differences in the Teaching of Reading," *Journal of Educational Research*, September, 1920. p. 560-71.

CHART IX

TOTAL MINUTES PER WEEK ALLOTTED TO READING IN GRADES 1-8 IN ELEMENTARY SCHOOLS



Research Division - National Education Assn.

Based on data on p. 33, Fred C. Ayer, *Studies in Administrative Research*, Vol. II, Department of Research, Seattle Public Schools

Children's Interest in Reading

Children's interest in reading is of vital concern to all teachers, and particularly to committees engaged in outlining courses of study in reading.

Children prefer prose to poetry.—Several studies have been made which show that children favor prose. The data available do not provide evidence as to whether this seeming dislike for poetry is due to the inherent nature of poetry, to the specific selections assigned them in the past, or to the methods of teaching employed.

Fiction is popular among girls and adventure among boys.—This is one of the points on which studies made of children's interests in reading agree. Until further study is made of children's reading interests, it would appear that the only safe guide for teachers to follow is to provide a rich variety of carefully selected reading material and to study the interests of individual pupils.

Scientifically graded book lists based on children's interests can be compiled.—Until recently, graded book lists have been based upon the observation of teachers and librarians, who know in a general way which books are suitable for children of different schools, grades, and ages. The Winnetka Graded Book List¹ when published will include seven hundred books which boys and girls have read and enjoyed, annotated with the children's own comments, and based on the opinions of 36,750 children in thirty-four cities and towns. The age and the *exact degree of reading ability* of each of these children were taken into consideration in grading the seven hundred books, as well as statements from twenty-five or more children as to how well and why they liked each book. Teachers, librarians and parents will find this list a help in answering the perplexing question, What books should I recommend to my boys and girls?

Children's reading interests a fertile field for further study.—The whole question of children's interests in reading is a complicated one, and will remain so until experimentation reveals just how far it is possible to develop

interests in particular directions as a product of good teaching. It is interesting to note, however, that completed studies indicate some disagreement among librarians as to what material is intrinsically of greatest interest to children.

The expressed preferences of children for certain books also show some disparity with book lists suggested by librarians. This whole question offers a large field for experimentation. Forward looking work in the study of children's reading interests should yield large returns in the next few years.

What Help from Standard Tests?

Objective tests of reading are essential both to successful school practice and to the scientific study of reading problems. The fact that forty different reading tests and scales are now on the market—2,000,000 copies of one test were sold in 1924—bears witness to the fact that school people find reading tests helpful. William S. Gray states that a review of current reading tests shows that they represent widely different views of reading and that they measure different types or phases of reading ability. Among the phases of reading measured by standard tests are: (1) Accuracy of word recognition, (2) rate and accuracy of oral reading, (3) rate of silent reading, and (4) comprehension in silent reading. If the names of standardized tests which measure these phases of reading are desired, see list recommended by the National Reading Committee on pages 44, 54, and 63, Part I, *Twenty-fourth Yearbook* of the National Society for the Study of Education.

Appropriate Materials for Instruction in Reading

The National Committee on Reading divides the program of instruction in reading into these five periods:²

First period. "The period of instruction and experience which is prerequisite to reading." (Kindergarten and frequently the early part of the first grade.)

Second period. "Instruction to introduce pupils to reading as a thought-getting process and to develop considerable independence in word

¹ Washburne, Carleton, and Vogel, Mabel, "Books Children Like," *Journal of the National Education Association*, January, 1926.
———, ———, *Winnetka Graded Book List*, American Library Association, 86 East Randolph St., Chicago, Ill., 1926.

² See Part I, *The Twenty-Fourth Yearbook* of the National Society for the Study of Education. p. 177.

recognition." (Following Period 1 in Grade I and sometimes extending into Grade II.)
 Third period. "Vigorous emphasis on the fundamental attitudes, habits and associations." (Grades II and III.)
 Fourth period. "Period of wide reading." (Grades IV, V, and VI.)
 Fifth period. "The period of refining reading and study habits." (Junior and senior high schools.)

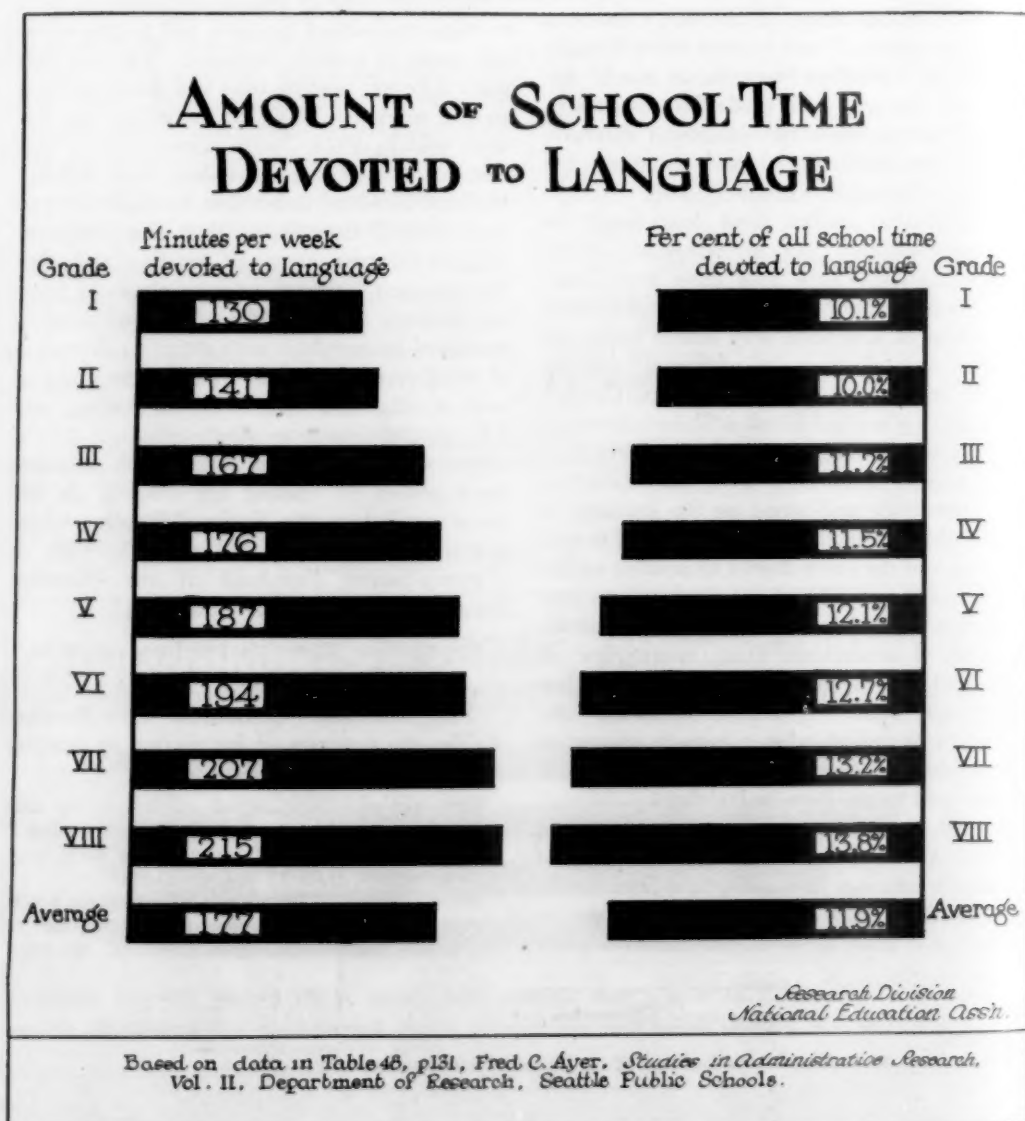
For each of these five periods, this Committee on Reading has made specific recommendations as to books from which children will get training and enjoyment. All teachers

of reading will be interested in reviewing the children's book lists presented in Chapter VII of Part I, *Twenty-fourth Yearbook* of the National Society for the Study of Education.

Research and the Curriculum in Language and Grammar

A review of the research studies available in the field of grammar leads to the conclusion that an important function of a course in grammar is to give a rational basis for the elimination of the oral and written language

CHART X



errors of school children. In other words, from the day children enter school, one of the responsibilities of the teacher is to discover what errors in grammar each individual child is in the habit of making, and to try and help him correct these. Whether or not this is accepted as the chief function of a course in grammar, no course of study committee can afford to overlook the basic investigations which have been made of children's oral and written grammatical errors.

These investigations are reported in *The Sixteenth Yearbook* of the National Society for the Study of Education, Part I; Charters' *Curriculum Construction*, Chapter XVII; and the Third Yearbook of the Department of Superintendence, *Research in Constructing the Elementary School Curriculum*, Chapter VIII. Only the briefest mention is made here of a few of the research findings relative to language and grammar.

Among the questions upon which research throw some light are these:

Amount of Time Devoted to Language

Chart X shows that in 49 cities in 1924, the average number of minutes devoted to language, increased from 130 minutes in the first grade to 215 minutes in the eighth grade. Despite the fact that some formal grammar has been dropped from the course of study, the total number of minutes per week devoted to language in grades 1-8 has increased in the

past ten years. See Chart XI. As has been previously stated the average of prevailing practice need not necessarily be looked upon as correct practice.

Objectives of Language and Grammar

What language skills seem necessary for men in various occupations? To find an answer to this question J. W. Searson consulted 7752 persons in forty-two states. His findings are summarized in Table 3, page 149.

Somewhat similar to the language objectives listed by Searson are those reported by Pendelton¹ who also studied actual linguistic usages of many adults.

Children's Grammatical Errors the Basis of a Course in Grammar

What type of oral errors are most frequent? According to Charters:

All the investigators agree in the finding that errors in verbs are most frequent, constituting, as they do, around sixty per cent of the grammatical errors, except Randolph, whose stenographic reports show the verbs to be about ten.²

The question arises, Are the most frequent errors the most serious? They are according to the teachers of Pittsburgh, who listed what they considered the ten worst errors, and then compared them with a second list based on frequency of occurrence.

What are the twenty-three most frequent grammatical errors? The teachers of Pitts-

¹ Pendelton, Charles S. *The Social Objectives of School English*. Nashville, Tennessee, George Peabody College for Teachers.

² Charters, W. W. *Curriculum Construction*, Macmillan, 1923. p. 201.

CHART XI

TOTAL MINUTES PER WEEK ALLOTTED TO LANGUAGE IN GRADES 1-8 IN ELEMENTARY SCHOOLS



Research Division, — National Education Ass'n.

Based on data on pl33, Fred C. Ayer, *Studies in Administrative Research*. Vol. II. Department of Research, Seattle Public Schools.

burgh listed a total of 23,676 grammatical errors. Among these the twenty-three errors which occurred from 1555 to 202 times were the following:

Error	Frequency
was for were.....	1555
seen for saw.....	1513
ain't	1361
can for may.....	1150
done for did.....	895
is for are.....	777
don't for doesn't.....	721
this here	684
John, he went.....	671
didn't have no.....	531
them things	479
that there	472
ain't got	443
have got	439
ain't got no.....	435
come for came.....	350
It was (is, ain't) me.....	340
why, there was.....	330
didn't do nothing.....	302
lay for lie.....	280
off for from.....	276
went for gone.....	245
give for gave.....	202

What should be the order of teaching emphasis in correcting language errors of high school pupils? R. I. Johnson tabulated the errors in 83,064 words of written compositions of 132 high school freshmen and 66 college freshmen in Kansas City, Missouri. From these data, he derived the following order of teaching emphasis upon the different classes of errors, the first being most important:

1. Mistakes in capitalization
2. Mistakes in the use of the apostrophe
3. Mistakes in punctuation
4. Mistakes in the use of adjectives and adverbs
5. Mistakes in spelling
6. Mistakes in pronouns, not including case
7. Careless omissions and repetitions
8. Mistakes in the use of verbs
9. Mistakes in the use of prepositions and conjunctions
10. Sentence meaning not clear
11. Sentence structure not grammatical
12. Mistakes in the use of quotation marks
13. Mistakes in the cases of pronouns.¹

Can children's grammatical errors be used as a basis for determining what grammatical rules should be taught? Charters and Miller developed a technical grammar for Kansas

City by means of an investigation of children's errors. Its purposes were to find:

1. What errors in the use of oral and written language forms, violating rules of grammar, were made by the children of the Kansas City elementary schools?
2. What rules in grammar were necessary in order to include and understand these items?
3. What items in the course of study in Kansas City are unnecessary?
4. What items should be omitted?

Building a course in grammar according to this method involved, first discovering the grammatical errors made by children, then the statement of rules broken by these errors. For instance, the simple statement of error, *Subject of the verb not in the nominative*, had to be changed to a statement of the rule broken, namely, *The subject of a verb is in the nominative case*. This procedure, carried out for all the errors made, resulted in a list of about sixty rules, which had been broken by the children. The next step was to discover, in connection with each rule, the definitions necessary to understand it. The rules and definitions thus determined were accepted as the technical grammar necessary to comprehending the reason for correct grammatical speech.

What can be omitted from the present courses in grammar?

In the Kansas City study (referred to above), it was found that the following could be omitted from the course of study which was in operation in the schools at the time of the investigation: The exclamatory sentence, the conjunction, the appositive, the nominative of address, the nominative by exclamation, the objective complement, the adverbial objective, the indefinite pronoun, the objective used as a substantive, the classification of adverbs, the noun clause, the conjunctive adverb, the retained objective, the moods (except, possibly the subjunctive of *to be*), the infinitive (except the split infinitive), the objective subject, the participle (except the definition and the present and past forms), the nominative absolute, and the gerund.²

What is the relative difficulty of a course of study based on grammatical errors of children? Charters in his *Curriculum Construction* and in Chapter VIII of the *Third Year-book* of the Department of Superintendence summarizes the grammatical rules and definitions included in the course of study, based on the errors of Kansas City children. Char-

¹ Johnson, R. I. "The Persistency of Errors in English Composition," *School Review*, October, 1917.

² Charters, W. W. *Curriculum Construction*, Macmillan, 1923. p. 207.

ters writes that a review of this course of study outline shows:

Grammar is greatly simplified as to both the complexity of the sentences used and the narrow range of facts to be learned. Much of the difficulty of grammar is eliminated. Unusual tenses, gerundives, infinitive constructions, and most of the mood forms are among those in which mistakes are infrequently made or not made at all.

Investigations seem to indicate that the amount of technical grammar included, in some courses at least, is greater than the use, in every day life of the grammatical forms involved, justifies. Apparently much of the

technical grammar being taught children owes its presence in the course to the force of tradition or to the belief in the doctrine of formal mental discipline. Committees charged with revision of grammar courses may well study their local curricula for the purpose of discovering the percentage of technical grammar which can be justified only on the bases just stated. The question may well be raised as to whether time consumed in teaching certain technical grammar cannot better be devoted to actual practice in correct writing and speaking.

TABLE 3.—LANGUAGE SKILLS NECESSARY FOR ORDINARY SUCCESS IN LIFE
(7,752 PERSONS FROM 42 STATES)

Language skills demanded by public	Merchants	Traveling salesmen	Clerks	Farmers	Semi-skilled laborers	Unskilled laborers	Lawyers	Physicians	Ministers	Teachers	Authors and editors	Total
	714	406	759	2,187	397	1,193	129	133	207	1,136	481	7,752
Speaking Skills:												
Accurate pronunciation.....	527	370	682	937	103	257	121	120	204	1,102	256	3,677
Good conversation.....	493	392	691	1,020	216	313	107	118	200	1,019	313	4,884
Clear presentation.....	61	351	547	530	119	91	116	109	205	1,114	215	3,458
Persuasive skill—												
With customers.....	702	402	709	861	19	14						2,701
With juries.....							109	14				123
With parishioners.....									197			197
With constituents.....	4		11	190	37	75	119	122	14	760	359	1,392
After dinner speaking.....	12	92	14	79	28	12	90	72	167	131	194	891
Trade and civic addresses.....	391	149	82	185	71	7	98	68	131	78	287	1,547
Directing work of others.....	613	38	103	1,797	212	188	89	51	169	1,136	347	3,743
Total of Speaking Skills.....												22,613
Reading Skills:												
Books.....	312	219	307	1,290	197	417	129	133	205	1,130	472	4,811
Newspapers.....	641	384	563	1,993	340	818	128	127	198	1,044	479	6,715
Magazines.....	403	361	283	795	251	536	126	131	195	961	408	4,450
Technical journals.....	299	97	81	1,431	72	79	97	109	65	568	103	3,001
Plans and specifications.....	32	18	16	130	29	117	102	27	15	93	98	677
Definite directions.....	98	377	541	1,863	101	488	127	116	26	1,107	411	5,255
Letters, orders, contracts.....	701	395	231	1,813	179	613	124	120	185	1,119	375	5,845
Description of goods.....	691	389	639	759	81	114	91	12	19	38	312	3,145
Signs and advertisements.....	522	112	119	481	113	609	72	81	48	123	410	2,690
Total of Reading Skills.....												38,689
Writing Skills:												
Correct spelling.....	631	365	509	1,213	309	512	118	126	192	1,131	465	5,771
Good penmanship.....	594	380	561	1,633	312	538	101	114	167	1,096	319	5,815
Business letters, forms, briefs, reports.....	603	396	413	817	72	71	128	96	193	1,101	178	3,068
Social correspondence.....	37	29	68	411	9	12	19	13	141	365	31	1,135
Technical articles.....	49	11	21	112	12	4	53	41	13	15	93	424
Specifications and directions.....	127	151	27	117	93	412	97	103	76	781	361	2,345
Clever advertisements.....	299	96	58	103	6	18	4	9	15	16	372	996
Clever new stories.....	81	28	19	211	9	2	16	29	61	41	401	898
Total of Writing Skills.....												20,452
General Language Skills:												
Skill to gather, organize, interpret facts.....	376	288	18	873	79	18	123	118	176	1,081	465	3,515
Thinking clearly, cleverly.....	315	216	119	1,079	164	213	121	126	188	1,059	421	4,521
Expression—sense.....	219	187	121	512	92	16	82	89	156	653	189	2,316
Total of General Language Skills.....												11,352

Read Table 3 as follows: Of the 714 merchants questioned, 527 stated that they needed skill in accurate pronunciation, etc.

Research and the Curriculum in Social Studies

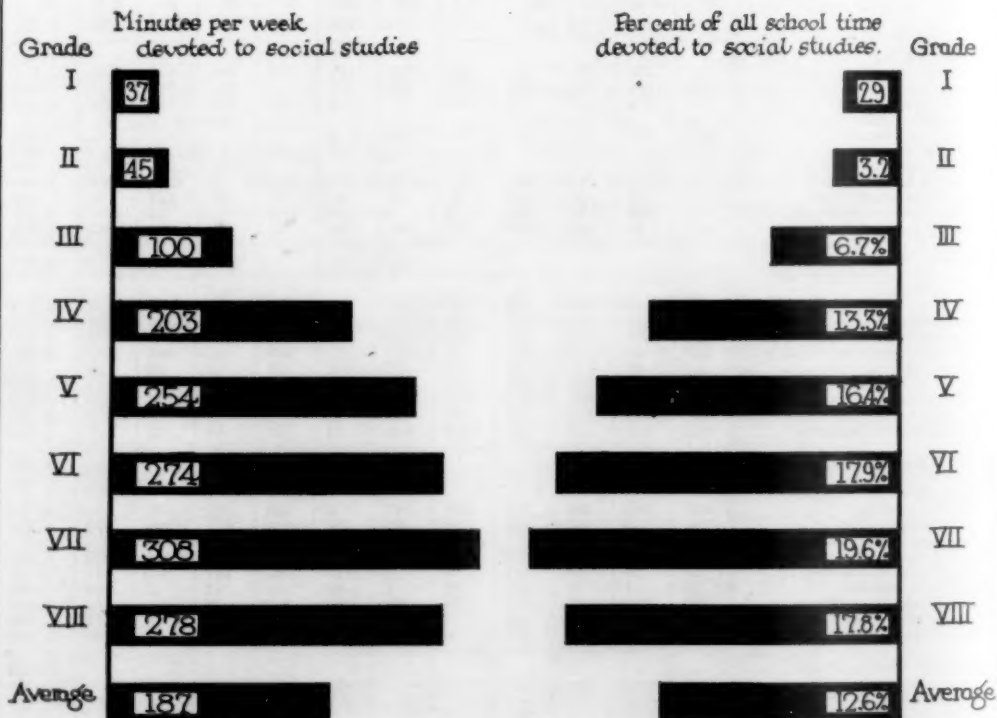
Research has made available certain evidence concerning the socially valuable activities of citizens. While this evidence is not conclusive, in some instances, it does indicate certain trends as to what facts, topics, and

problems are of greatest social value. Space permits only the briefest mention of the findings of a few of these studies. Course of study committees will want to review the social science research studies included in the Yearbooks of the National Society for the Study of Education¹ and also the *Third Yearbook* of the Department of Superintendence,

¹ See: The Fourteenth, Fifteenth, Sixteenth, Seventeenth, Nineteenth, Twentieth, and particularly the Twenty-second Yearbooks of the National Society for the Study of Education, Bloomington, Illinois, Public School Publishing Co.

CHART XII

AMOUNT OF SCHOOL TIME DEVOTED TO SOCIAL STUDIES (GEOGRAPHY, HISTORY, & CIVICS)



Research Division
National Education Association

Based on data in Table 48, p131, Fred C. Ayer, *Studies in Administrative Research*, Vol. II, Department of Research, Seattle Public Schools

Research Methods Most Frequently Used

Research workers have used a variety of methods to determine the topics or problems of contemporary society to be included in the social studies curriculum. Most of them may be listed under one of these heads: (1) Asking laymen what problems should be taught, (2) analyzing political platforms, (3) using the judgment of "frontier thinkers," (4) listing social problems discussed in periodicals, and (5) compiling evidence as to what historical and geographical facts are needed in the intelligent reading of current books and periodicals.

What are some of the questions faced by every committee on social studies, which may be illumined by investigations, using these methods?

Time Allotted to Social Studies

The studies on time allotment by Ayer list separately the average number of minutes per week for each grade in geography, history and civics. In Charts XII and XIII these have been combined under the heading, "Social Studies." Chart XII shows that the per cent of total time devoted to social studies, increases rapidly from the first grade to the seventh.

To help children orient themselves in the complex social conditions of modern life, more time is being given to the social studies in the elementary schools today than ever before. See Chart XIII.

¹ See *Research in Constructing the Elementary School Curriculum*, Third Yearbook, Department of Superintendence, National Education Association, 1925. p. 225-227.

How Determine Content of Social Studies?

What topics do representative citizens want emphasized in the teaching of citizenship? In answer to this question, an attempt was made to obtain a cross section of the public opinion of a whole state.

Table 4 lists the ten most frequently and the ten least frequently mentioned topics out of 274 suggested by 593 people, representative of leading professions and vocations.¹

What specific traits should be promoted in any program of citizenship training? "Development of good citizenship" is frequently given as the chief aim of our public schools. This statement is of little value, unless one discovers, specifically by investigation, what are the detailed duties or responsibilities of a citizen. As yet no detailed "job analysis" of citizenship has been published.

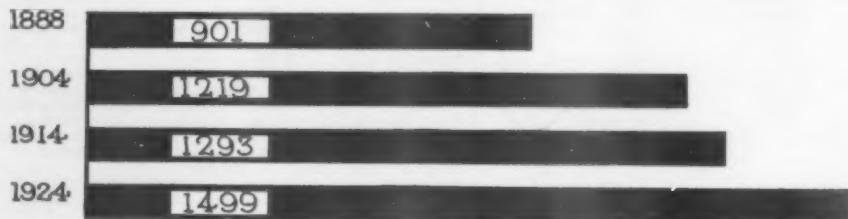
A summary was made of the five or more traits considered most essential to efficient citizenship by 148 people listed in "Who's Who," and representing fifteen occupations and professions in which the majority of the American people are engaged.

This summary of traits or qualities supposedly essential to an efficient citizen shows that he:

must be honest and industrious, he must be intelligently interested in the affairs of the nation, the state, and the community, and actively participate in them, he must respect and obey the law and advocate its enforcement. Loyalty, patriotism and

CHART XIII

TOTAL MINUTES PER WEEK ALLOTTED TO SOCIAL STUDIES (GEOGRAPHY, HISTORY & CIVICS) IN GRADES 1-8 IN ELEMENTARY SCHOOLS



Research Division, - National Education Ass'n.

Based on data on p133, Fred C. Ayer, *Studies in Administrative Research*, Vol. II, Department of Research, Seattle Public Schools.

public spirit must rank high in characterizing him. He must have religious ideals developed within him. To these traits must be added courage, tolerance, intelligence, integrity, open-mindedness, good health, willingness to serve, liberal education, co-operation, unselfishness, and character.

What civic instruction will make intelligent voters? To determine the questions upon which people have most frequently been called upon to vote, B. B. Bassett analyzed the national platforms of all political parties since the first national convention in 1832 and also many State platforms. Table 5 summarizes the results of his investigation.¹

¹ For a more detailed report of this study see: *Seventeenth Yearbook* of the National Society for the Study of Education, Part I. 1918. p. 63-80.

TABLE 4.—TOPICS SUGGESTED BY LAYMEN TO BE EMPHASIZED IN THE TEACHING OF CITIZENSHIP

Topic	Number of times mentioned
Individual duties, responsibilities, and privileges as a citizen.....	224
Duty to vote.....	221
Respect and obedience for law.....	213
Responsibility of the individual to the community.....	143
Cooperation in community affairs.....	126
Public Health.....	125
Honesty.....	122
Government, its purpose, importance, growth, benefits, and principles.....	116
Payment of taxes willingly.....	102
Respect for the rights of others.....	101
Confidence in men.....	1
Symbolic meaning of our national capitol.....	1
Tolerance.....	1
Memorizing orations.....	1
Boy Scouts.....	1
Respect for war veterans.....	1
Memorizing oath of allegiance.....	1
Efforts toward advancement.....	1
Pride in local state.....	1
Work a cure for idleness.....	1

TABLE 5.—PROBLEMS MENTIONED MOST FREQUENTLY IN PARTY PLATFORMS

Rank	All Parties	Democratic Party	Republican Party	Democrat and Republican	Highest Five in Each Campaign
1.	Finance.....	Finance.....	Finance.....	Finance.....	Finance.....
2.	Office.....	Foreign relations.....	Foreign relations.....	Foreign relations.....	Moral reform.....
3.	Foreign relations.....	Office.....	Office.....	Office.....	Foreign relations.....
4.	Moral reform.....	State rights.....	Commerce.....	Nat'l resources.....	Office.....
5.	Immigration.....	Territories.....	Nat'l resources.....	Works.....	Corporations.....
6.	Nat'l resources.....	Legislation.....	Corporations.....	Labor.....	Labor.....
7.	Labor.....	Corporations.....	Immigration.....	Territories.....	Monetary system.....
8.	Monetary system.....	Nat'l resources.....	Justice.....	Defence.....	Parties.....
9.	Defence.....	Works.....	Monetary system.....	Immigration.....	Constitution.....
10.	Works.....	Defence.....	Defence.....	Commerce.....	State rights.....
11.	Legislation.....	Moral reform.....	Labor.....	Moral reform.....	Territories.....
12.	Commerce.....	Immigration.....	Territories.....	Monetary system.....	Nat'l resources.....
13.	Territories.....	Constitution.....	Moral reform.....	Pensions.....	Legislation.....
14.	Personal rights.....	Personal rights.....	Suffrage.....	State rights.....	Immigration.....
15.	Suffrage.....	Pensions.....	Postal system.....	Constitution.....	Pensions.....
16.	Constitution.....	Monetary system.....	Constitution.....	Justice.....	Personal rights.....
17.	Pensions.....	Commerce.....	Parties.....	Personal rights.....	Industry.....
18.	Parties.....	Parties.....	Personal rights.....	Legislation.....	
19.	State rights.....	Education.....	State rights.....	Parties.....	
20.	Education.....	Suffrage.....	Education.....	Suffrage.....	
21.	Postal system.....	Health.....	Health.....	Postal system.....	
22.	Justice.....	Industry.....	Industry.....	Education.....	
23.	Industry.....	Postal system.....	Pensions.....	Health.....	
24.	Health.....	Justice.....		Industry.....	

lems. Topics, having to do with issues concerning immigration, land, industry and business, population, community life in the American city, education, governmental problems, and world affairs, have been compiled. Besides these major types of insistent problems, detailed questions have been listed under each

major head. The topics listed under the heading *Immigration* are illustrated by Table 6. In Table 7 examples are given of other problems involved in some of the major social issues.¹

What social problems are discussed in current magazines? This question is answered

¹ For a more detailed statement of this method of investigation and of its results see: Harold O. Rugg, "Problems of Contemporary Life as the Basis for Curriculum Making in the Social Studies," Chapter XV. *The Twenty-third Yearbook*, National Society for the Study of Education, Bloomington, Illinois, Public School Publishing Company, 1923.

TABLE 6.—CONTEMPORARY PROBLEMS OF IMMIGRATION USED AS A BASIS FOR SOCIAL SCIENCE CONTENT

(Selections from a larger-list)

- No. 1. Problem of determining on what bases to admit immigrants.
- No. 2. Problem of safeguarding the transportation of immigrants from their homes to America.
- No. 3. Problem of assimilating immigrants into American industry so that at the earliest possible moment they will be economically independent.
- No. 4. Problem of devising methods by which immigrants can be effectively distributed among the different regions of the United States.
- No. 5. Problem of improving conditions under which immigrants work.
- No. 6. Problem of raising the immigrant to the American standard of living.
- No. 7. Problem of utilizing public schools effectively in the education of adult immigrants and their children.
- No. 8. Problem of naturalizing the immigrant so that he can participate intelligently at the earliest possible moment in our political life.
- No. 9. Problem of getting the American business man and the immigrant to cooperate in buying and selling.
- No. 10. Problem of securing the cooperation of the foreign language press as an agency for assimilation.

TABLE 7.—SOME CONTEMPORARY SOCIAL PROBLEMS

- A. Problems of Immigration. (Samples were included in Table 6.)
- B. Problems which deal with Natural Resources.
Examples: 1. How can we provide for the wide-spread ownership and development of farm land and homes?
2. Problem of making available adequate rural credits.
- C. Problems of Industry and Business.
Examples: 1. Problem of securing the fullest cooperation between labor and capital.
2. Problem of providing continuous employment for all.
3. Problem of utilizing government control to secure efficient and fair administration of concentrated forms of industry and business.
4. Problem of determining what shall constitute a fair price.
- D. Problems Involved in Developing and Maintaining an Adequate and Efficient Transportation System in America.
Example: 1. Problem of correlating our rail, water, and motorized transportation.
- E. Problems of the American City.
Example: 1. Problem of how to give to community life, both urban and rural, the physical situation and the intimate neighborhood relations which are typical of the American suburban community.
- F. Problems of Education and the Formation of Intelligent Public Opinion.
Examples: 1. Problem of adult education in citizenship.
2. Problem of adult education by the dissemination through the press of the essential facts concerning contemporary economic, social, and political matters.

TABLE 8.—SOCIAL SCIENCE TOPICS MOST FREQUENTLY MENTIONED IN CURRENT MAGAZINES

Topics	Frequencies from Study I	Frequencies from Study II
World state	235	26
Congress	164	1
Immigration	159	12
Bolshevism	129	9
Costs	111	9
Asiatic exclusion	104	0
Expansion and imperialism	99	7
Employer's organizations	97	6
Unemployment	87	2
Taxation	76	5
Socialism	71	7
Regulation and enforcement of prohibition	68	7
Housing	66	..
Electoral systems	66	3
Electoral representation	64	..
Party control	64	5
Conservation of mines	58	4
Freedom of speech	58	3
Recreation	56	15
Negro problem	55	..

by two studies—one based on an analysis of 205 issues of twenty-one standard magazines, and another based on the Readers' Guide to Periodical Literature. The most frequently mentioned topics in both studies are listed in Table 8.¹

This study shows that courses in the social studies, to be of value in giving students the necessary background to read understandingly current periodicals, have to cover a wide range of economic, sociological, and political topics.

What civic questions do children meet in their own homes? Another investigation sought to determine civic knowledge most needed by the child outside the school, by asking school children to bring a record of recent civic transactions of members of their families. Transactions reported included: Purchase of War Savings Stamps, income tax, census report, property sale, property tax, dog license, organization of corporation, etc. In one study made by eighteen civics classes, 1784 specific situations were reported in which civic knowledge was required by laymen.²

What Are the Basic Facts in Geography?

What map locations should all children know?—In geography it is impossible to teach the location of all cities, countries, rivers, mountains, islands, etc. To determine the relative importance of map locations in present day life, these criteria have been used:

1. Population. Used as one criterion for determining relative importance of cities, both of the United States and foreign countries.
2. Foreign trade. Total exports and imports averaged for several years. Used as a measure for the commercial importance of countries.
3. Bank clearings. A measure of the commercial importance of the cities of the United States.
4. Area. Used as a minor measure of importance of countries.
5. Frequency of use by "frontier thinkers" in critical magazines and books.
6. Number of articles, dealing with map locations, in all important magazines.
7. Number of references to each geographic fact found in random samplings of magazines and newspapers.

On the basis of these criteria the following rankings have been made:³

¹ For a more detailed report of this study see: *Research in Constructing the Elementary School Curriculum*, Third Yearbook, Department of Superintendence, National Education Association, 1925. p. 231-232.

² See pages 266-269 of the *Third Yearbook* of the Department of Superintendence of the National Education Association.

³ See: *Research in Constructing the Elementary School Curriculum*, Department of Superintendence, National Education Association, 1924. p. 234-238 for complete lists.

TABLE 9.—MOST FREQUENTLY MENTIONED PERSONS IN BOOKS AND CYCLOPEDIA ARTICLES

Person	Different problems	Number of times mentioned	Product
Books			
Roosevelt, President	10	25	250
Cleveland, President	7	9	63
McKinley, President	5	9	45
Smith, Adam	5	11	55
Taft, President	4	11	44
Jackson, President	4	11	44
Grant, President	5	8	40
Mill, John Stuart	5	8	40
Wilson, President	6	6	36
Garfield, President	4	8	32
Malthus	4	8	32
Montesquieu	3	7	21
Eliot, Charles W.	4	4	16
Hamilton, Alexander	4	4	16
Harrison, President W. H.	3	5	15
Walker, Francis	3	5	15
Hughes, Charles Evans	3	4	12
Lincoln, Abraham	3	4	12
Bryce, James	3	3	9
Clay, Henry	3	3	9
Cobden, Richard	3	3	9
List, Frederick	3	3	9
Washington, President	3	3	9
Cyclopedia Articles			
Cleveland	4	6	24
Taft	4	6	24
Roosevelt	3	4	12
Wilson	2	5	10
Wright, Francis	2	2	4

For a more detailed discussion of this study see: *Seventeenth Yearbook* of the National Society for the Study of Education, Part I, Bloomington, Illinois, Public School Publishing Company, 1918, p. 81-89.

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study of

1. The thirty most important cities in the United States
2. The fifty most important foreign cities
3. The thirty most important countries of the world
4. The forty most important sections and regions of the world
5. The twenty rivers of greatest importance in the world
6. The ten most important mountains
7. The twenty-five most important bodies of water
8. The twenty-one most important island groups.

These rankings offer at least a tentative basis for the selection of minimal essentials in map location, and evidence as to desirable relative emphasis. Such lists are not accepted in modern curriculum construction as a primary basis for content in the social sciences. The old method whereby geography aimed at converting children's minds into encyclopedias of unrelated and often meaningless facts is now discredited. Knowledge of location should come as a by-product of good instruction in the social sciences. The lists which have been cited do offer a means of determining what locational geography should be given emphasis, as a part of such instruction.

Historical Information Essential to Intelligent Understanding of Modern Civic Problems

What historical facts should all children know? Attempts have been made to tabulate the facts of history which all children should know as a basis for the understanding of modern civic problems. One of these studies, completed in 1918, gave the evidence found in Table 9 as to the most frequently mentioned persons in books and cyclopedia articles.

The findings of this study doubtless would not apply to 1925. A current study would probably replace the name, Roosevelt with Coolidge. Studies similar to the above have ascertained the most frequently mentioned dates, periods in history, etc.

General conclusions which may be drawn from these investigations are:

1. The historical facts referred to by writers of books on modern problems are quite different from those referred to in school histories.
2. The majority of persons and dates mentioned by writers of books on modern problems have to do with recent history—that of the United States since the Civil War.

The above conclusions may well raise questions such as these in the minds of course of study committees:

1. Does social science instruction tend to become formalized and run in traditional ruts?
2. May studies of the type cited above be undertaken with advantage by committees of classroom teachers concretely to illustrate disparity between instruction and life?
3. Can a course of study in social science ever be finished?

Do History Text-Books Put Emphasis Where It Belongs?

Several research studies have been made, in which widely used history text-books were analyzed for references to persons, dates, topics, etc., and comparisons were made to see to what extent socially valuable materials were included and whether text-book materials were organized in accordance with the laws of learning.

Among the findings are these:

1. The material presented in elementary American history text-books is predominantly political and military history.
2. In the accounts of more recent wars, less space is devoted to battles and campaigns and more to causes and results.
3. The persons named most frequently in elementary history text-books are those associated with political development and with military and naval affairs.
4. Most of the books mention a much larger number of names than the average pupil will be likely to remember. Certain names, however, are made to stand out through repetition. A careful frequency count in one study revealed the fact that eight current histories mention 1409 different persons but that *only 109 of these historical characters are common to all eight text-books.*

One of the questions that committees on course of study revision may wish to raise is this, Should there be greater agreement as to what historical characters should appear in elementary history texts? This does not mean that a single final list need be decided upon; nor does it mean that any list should be memorized.

There is a clear tendency in modern history instruction to substitute for the old cyclopedic method of fact memorization the use of

the "problem" with its consequent development of the ability to exercise judgment in dealing with historical facts. This tendency will be readily recognized in a review of the more recent courses of study and history texts.

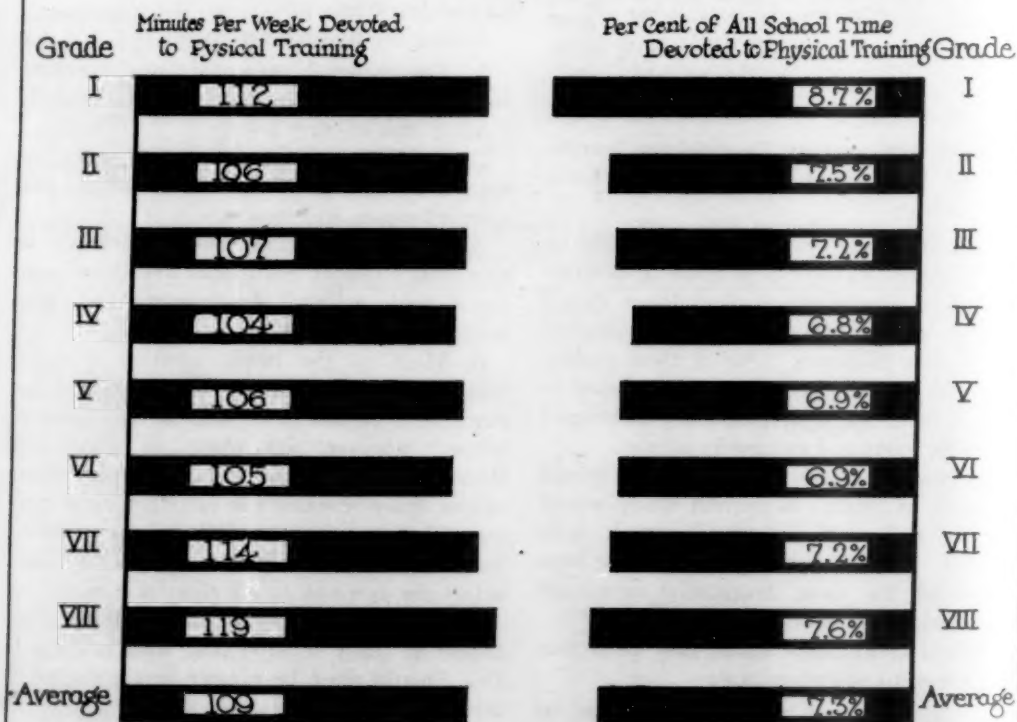
Research and the Curriculum in Health and Physical Education

The questions which confront the makers of curricula in the field of health and physical education cannot in any instance be completely and fully answered by available research. In

the meantime, the schools of the country are looking for the best available guidance, relative to immediate health teaching. What has been needed for some time is a report which gives an authoritative compilation of technical statements and a consensus of professional opinions relative to health education. Fortunately, this was the purpose of the 1925 Report of the Joint Committee on *Health Problems in Education* of the National Education Association and the American Medical Association. Cooperating with them was the

CHART XIV

AMOUNT OF SCHOOL TIME DEVOTED TO PHYSICAL TRAINING



Research Division
National Education Assoc.

Based on data in Table 46, p131, Fred C. Ayer, *Studies in Administrative Research*, Vol II, Department of Research, Seattle Public Schools.

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Technical Committee of Twenty-seven, composed of subcommittees of educators, physicians, educational psychologists, dentists, nutrition experts, physical educators, and biological and public health experts. All teachers of health education as well as those engaged in building new courses of study will want to make much use of this notable report,¹ which incorporates practically all the scientific research bearing upon instruction in health and physical education.

Time Devoted to Physical Training

A study of time allotments for physical training in the elementary schools over a period of years, see Chart XV, shows that in the past ten years the total amount of time devoted to this subject has almost doubled. Chart XIV shows that in 1924, in 49 large cities, in no elementary grade was the per cent of the total time devoted to physical training less than 6.8 per cent.

The following statements, based on research studies reported in Chapter X of the *Third Yearbook* of the Department of Superintendence, show trends in health and physical education. Course of study committees will want to consult this section of the Yearbook which reviews twelve completed research studies related to curriculum construction in health and physical education and lists four-

teen additional studies which have been undertaken.

Summary of Trend of Research Findings in Health Education

1. A survey of the local community health needs and of the health needs of individual children is the most valid basis for the construction of the curriculum in health education.

2. It is necessary for the school, the home and the community to cooperate if the health education program of the school is to be effective.

3. The tendency in health education is to measure and evaluate results in terms of its effectiveness in solving the actual health problems of the individual and the community rather than in terms of knowledge alone.

4. Although the final measurement of health education values consists in evaluation of its usefulness in solution of health problems, it is also necessary to devise measures of the informational or knowledge aspects of the health education program. Health information tests should be made and tried out to give an experimental basis for placing information in suitable grades.

5. Available research does not enable one to make a definite statement regarding standards of achievement for any grade.

6. The subject matter of health education should not emphasize the value of health as an end in itself so much as the value of health as a means to accomplishing interesting and worth-while things. With elementary school children the emphasis should be on the relationship of health to the activities of the immediate present rather than the distant future.

¹ *Health Education*, Report of the Joint Committee on Health Problems. Washington, D. C., National Education Association, 1925. 165 p., price \$1.00.

CHART XV

TOTAL MINUTES PER WEEK ALLOTTED TO PHYSICAL TRAINING IN GRADES 1-8 IN ELEMENTARY SCHOOLS



Research Division, National Education Assn.

Based on data on p133, Fred C. Ayer, *Studies in Administrative Research*, Vol. II, Department of Research, Seattle Public Schools.

Summary of Trend of Research Findings in Physical Education

The research studies in physical education point out several definite factors which should be carefully considered in a program of curriculum construction. They are as follows:

1. A study of age, grade, weight, and height is suggested as a satisfactory means of classifying students for physical education activities.
2. The use of a four-point classification (age, grade, height, and weight) has proved a satisfactory means of grouping high school boys for inter-scholastic athletics.¹
3. The relationship of physical efficiency may be a potent factor in adjusting pupils to the correct grade placement.
4. One study points out that a child's physical ability and development should be considered in classifying him as to acceleration or retardation in school progress.
5. An experiment shows that play is more effective than formal exercise as a means of reaching the objective laid down in a physical education program.
6. Group competition is desirable whenever possible for two reasons:
 - a. It stimulates pupils to increase their individual achievement.
 - b. It is socially effective in that the individual is urged to greater self-realization in keeping with the best group interests.
7. Little difference exists in height and weight between sexes in the last four years of elementary school.
8. The amount of kinetic energy used in running, jumping, etc., has been calculated. From data thus obtained it has been found that only 270 individuals out of one million tested, fell out of the distribution curve.
9. A plan has been evaluated which is physiologically sound whereby basketball tournaments may be conducted, limiting the physical strain of the contesting athletes.
10. A plan has been evolved for grouping physically defective high school pupils into similar groups for corrective work.
11. Underweight causes a lessening of motor efficiency, equivalent to from one-half to one year of retardation.

Research and the Curriculum in Music

While the amount of scientific research in the teaching of public school music, up-to-date has been limited, there are some findings which are of interest to course of study committees.

Time Devoted to Music

A study of the amount of time allotted to music shows that music has not only been accorded a definite place in the curriculum of practically all elementary schools, but Chart XVII shows that an increasing amount of time is devoted to music. A comparison of Charts II and XVI shows that in 49 of the larger cities the average number of minutes per week devoted to music, during each of the first six grades in 1924 was practically the same as that devoted to penmanship. While the average of current practice need not necessarily be the guide in the matter of time allotment or in any other phase of the curriculum, nevertheless it is of interest to course of study makers.

Of all subjects of the curriculum, music is likely to be most influenced by radio. Were scientific data available they would probably show a great increase during this decade in the time spent listening to music. Just what this calls for in terms of music instruction cannot be decided offhand. It is a problem which deserves both careful consideration and exact research. If the school is to keep pace with modern life, course of study committees will want to revise the music curriculum to take account of the extensive change in the consumption and appreciation of music which the expenditure of from a half billion to a billion dollars yearly for radio development is bringing about.

Chart XVI shows that in 1924 the average number of minutes per week in 49 cities, devoted to music varied between grades by not more than seven minutes.

To What Extent Should the Course of Study in Music Recognize Individual Differences?

Musical talent—a measurable quantity.—Musicianship, on the sensory side, has been analyzed by Seashore into six measurable elements. These are: Sense of pitch, time, intensity, consonance, rhythm, and tonal memory.

Measures of musical talent are of value to both pupils and teachers.—For the child, the

¹ In connection with this point, the following study should be noted: Rogers, J. F., *Problems in Physical Education*. U. S. Bureau of Education, Physical Education Series No. 5.

Teachers of health and physical education will find the bulletins in both the Physical Education Series and School Health Studies published by the U. S. Bureau of Education, helpful.

Seashore tests according to the Music Committee of the 1925 Yearbook of the Department of Superintendence, have these five values:

1. They may be used for the discovery of talent hitherto unrecognized and undeveloped.
2. They show the breadth of variation in the musical capacities of individuals. In the average classroom, one child is often one hundred times more sensitive to pitch than another.
3. They reveal deficiencies, such as lack of a sense of rhythm, which may not be suspected.

4. They may reveal ear defects that need immediate attention.

5. They may aid the pupil in selecting an instrument suited to his ability.

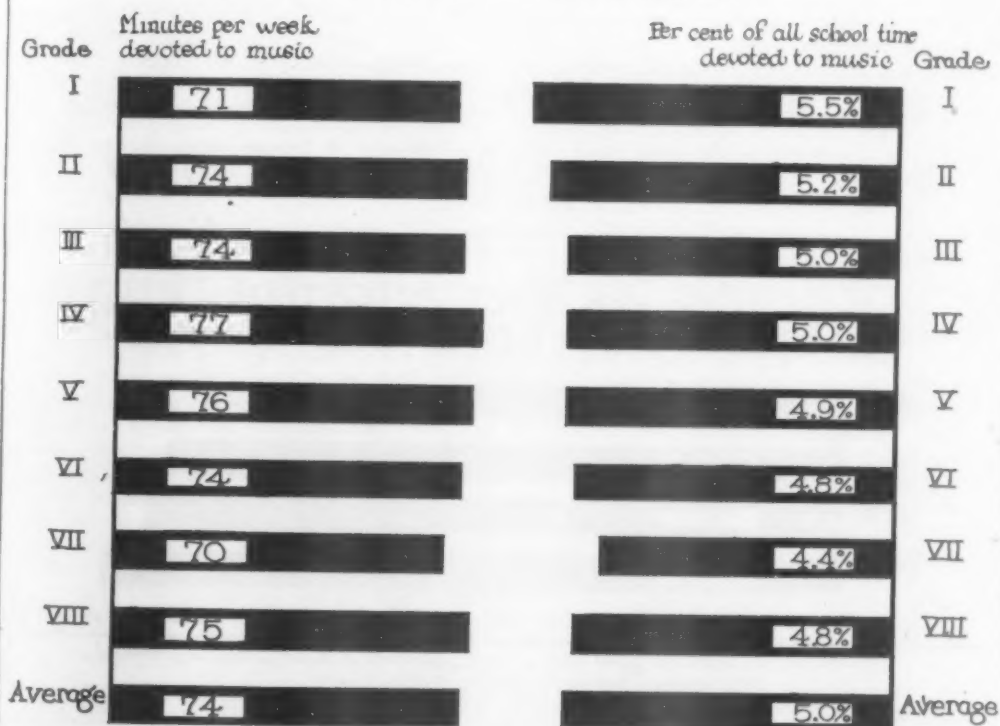
For the teacher the tests of musical ability have these three values:

1. They help him to know the amount of musical talent each child possesses. Knowing this, he can adapt the training in music to the nature of the child. Unfortunately, this is as far as he can go for the teacher can not create musical talent.

2. They may serve the teacher as placement

CHART XVI

AMOUNT OF SCHOOL TIME DEVOTED TO MUSIC



Research Division
National Education Ass'n.

Based on data in Table 48, p131, Fred C. Ayer, *Studies in Administrative Research*, Vol. II, Department of Research, Seattle Public Schools.

tests. According to Seashore, if children were grouped according to innate capacity and ability to achieve, much more progress could be made with music instruction in the public schools.

3. They may be employed by the teacher as a check on what the child is doing and is capable of doing.

Courses in Public School music should be differentiated according to pupil's ability.—According to the report of the Music Committee in the 1925 Yearbook of the Department of Superintendence. "As educators realize more and more the magnitude and significance of individual differences, special courses of study in music will be devised for the more homogeneous groups, and uniform curricular requirements for all grade school children will be a thing of the past."

At what age can musical talent be tested?

It is recommended that the measures of music talent be introduced in the fifth grade first, for this is the earliest age for which music talent testing can be made satisfactorily, and it is early enough to make serious arrangements for a musical education. The tests should be repeated in the eighth grade, just before the great sorting of children into vocations of practical life, and into elective courses in high school.¹

¹ Research in Constructing the Elementary School Curriculum, Department of Superintendence, National Education Association, 1925. p. 357.

Does Rhythmic Training Improve Sense of Rhythm?

The sense of rhythm is more or less innate and hence relatively fixed.—Experimental investigations to date lead to the tentative conclusion that intensive rhythmic drill adds little to one's sense of rhythm.

Experiments show that musical training as well as drill in such exercises as marching to music, beating time, breathing in such a way as to maintain a concurrence between beats and inhalation of breath, etc., do little to improve one's sense of rhythm.

Shall Scientific Testing and Standardization Have a Place in the Music Course of Study?

Musical accomplishment testing is possible and necessary.—The *Third Yearbook* names specific musical accomplishment tests and states that:

The standardized test is, at the present time, one of the best aids the music teacher can employ to raise the standards of school music.

Scores of a reliable test have definite meaning and permit of definite comparisons. Those need-

CHART XVII

TOTAL MINUTES PER WEEK ALLOTTED TO MUSIC IN GRADES 1-8 IN ELEMENTARY SCHOOLS



Research Division, National Education Assn.

Based on data on p154. Fred C. Ayer, *Studies in Administrative Research*, Vol. II, Department of Research. Seattle Public Schools.

WHAT ARE the distinctive contributions of research to curriculum making? First, it produces the objective data—the bricks, out of which the curriculum must be built. Second, it eliminates mere personal opinion and individual bias. This elimination is peculiarly necessary in education because of the intrenchment of traditional beliefs.—Ernest Horn, 1925 *Official Report*, Department of Superintendence. p. 180.

ing special training may be discovered and weak points in the music course detected. Remedial methods may then be applied in an effort to bring the music work up to the level of attainment indicated by the norms.

What Are Reasonable Attainments in Music for a Sixth Grade Pupil?

Seven definite attainments in music.—The Educational Council of the Music Supervisors' National Conference in 1921 recommended these seven definite attainments for sixth grade pupils:

1. Every child shall have acquired the use of his singing voice and pleasure in song as a means of expression.

2. Every child shall have acquired a repertoire of songs which may be carried into the home and social life, including "America" and the "Star-Spangled Banner."

3. Every child shall have developed the aural power to know by sound that which he knows by sight and vice versa.

4. Every child shall have the ability to sing at sight, using words, a unison song of hymn tune grade, and the easiest three-part songs; these to be in any key; to include any of the measures and

rhythms in ordinary use; to contain any accidental signs and tones easily introduced; and in general to be of the grade of difficulty of folk songs such as the "Minstrel Boy"; also knowledge of the major and minor keys and their signatures.

5. Every child talented in musical performances shall have opportunity for its cultivation.

6. The children shall have developed a love for the beautiful in music and taste in choosing their songs and the music to which they listen for the enjoyment and pleasure which only good music can give.

7. The children shall have acquired the ability to appreciate the charm of design in songs sung; to give an account of the salient features of structure in a standard composition after a few hearings of it; to identify at least the three-part song form from hearing; and to recognize and give titles and composers of a reasonable number of standard vocal and instrumental compositions.

To ascertain the feasibility, and the extent to which each of these seven attainments were being realized in five large cities distinguished for their public school music work, objective measurements were devised and applied. This survey showed that many children failed to reach the attainments set by the Council.¹

¹ For a detailed account of this survey, see *Research in Constructing the Elementary School Curriculum*, Third Year-book, Department of Superintendence, National Education Association, 1925. p. 364-366.

OUR PRESENT methods of revising the curriculum belong to a period in our school history when revision was not expected or sought. Our administrative machinery was made up with energy set aside for the examination and employment of teachers, with energy set aside for the collection and disbursement of revenues, with energy for the enumeration of children and their instruction in the classroom. There is not now in most systems and has not been in the past any energy for curriculum studies or current importations into the schools of the ideas developed by contemporary science and letters. It is this deficiency in our school administration and in our practice which has now come vividly to consciousness. We have been seeing it in negative terms during the past few years. We have felt a need for something which we do not have. The ground is now sufficiently cleared of other issues that the curriculum begins to take on a new prominence and importance. It is today an issue of paramount importance.

The task of solving the problems connected with reconstruction of the curriculum is peculiarly the task of a great organization capable of drawing to its aid agencies from all sections of the country. This is an undertaking requiring the broadest kind of cooperation. In this country where schools have always been isolated and local in their organization, there is a peculiar helplessness in taking up a task which calls for nation-wide cooperation. If we do not set aside some of the provincialisms which grow out of our past history and really discover methods of cooperative attack on the curriculum, we shall continue to be weak and wasteful in our efforts to solve our present problem.—Charles H. Judd, 1925 *Official Report Department of Superintendence*, p. 178-179.

Looking Backward at the Curriculum

Is the modern school a better school than that of a half century ago? Has the energy consumed in recent years to make the public school a better educator of children borne fruit?

The school of the "good old days when I was a boy" may be compared with that of today through their curricula—the knowledge and experience each sought to communicate to the children under their charge.

Arithmetic Instruction—Past and Present

Problems in arithmetic formerly aimed to give "mental discipline." If a problem resulted in the proper "mental gymnastics," it mattered not how uninteresting, ridiculous, or foreign to a child's experience it might be. Here are three examples taken from old arithmetic texts:

1. In the midst of a meadow,
Well stored with grass,
I've taken just two acres,
To tether my ass;
Then how long must the cord be,
That feeding all around;
He mayn't graze less or more, than
Two acres of ground.
2. A man, when he was married, was three times as old as his wife; after they had lived together 15 years, he was only twice as old. How old was each when they were married?
3. In a mixture of copper, tin, and lead, 36 lbs. more than $\frac{1}{4}$ the whole was lead; 4 lbs. more than $\frac{1}{8}$ of the whole was copper; and there was as much tin as both lead and copper. How much was there of each kind?

Modern courses of study reject the idea that sound educational results come from beating the child through a series of distasteful mental stunts. It is maintained that sounder educational results can be obtained by dealing with subjects and materials that children know about and in which they are or can be interested. We all work harder at things we are interested in and get better results from such work. Modern arithmetic seeks to give children practice in arithmetical computations under conditions conducive to the most vigorous mental effort. It aims to make the con-

tent of each problem valuable in itself so that as a by-product of his arithmetic work the child will obtain the knowledge and acquire the attitudes and ideals that will make him a good citizen.

Compare the problems given above with these taken from the 1924 Arithmetic Course of Study of the Detroit Public Schools:

1. This is an arithmetic problem that ties up with good health:

Teacher may measure and weigh all children in room—then by comparison with table giving average heights and weights, each one may determine the amount he is above or below standard.

2. Here is a problem in fractions leading to a better knowledge of practical "home activities":

Canning. Strawberries shrink when cooked so that it takes about $1\frac{1}{2}$ quarts of fresh fruit for 1 quart of canned fruit. How much should you buy to fill 12 quart jars? If you bought a bushel (32 quarts) how many cans of fruit would you get? Raspberries shrink about $\frac{1}{2}$. Peaches shrink so that 1 bu. fresh makes 18 qt. canned. Cherries shrink so that $2\frac{1}{2}$ qt. fresh makes 1 qt. canned.

3. This is the set-up of an eighth grade problem dealing with the investment of money:

I. Activities.

(1) Suppose each child in room has \$2,000 to invest. Let each child study carefully the different places in which he may invest it, either as a whole or in parts. Make on board list of the possibilities open, and let each one choose the way he wishes to invest his money. During the period given to this topic, the rate of interest on bonds may vary, the price of real estate may go up or down, rents may vary—children may sell and buy again. Have each one compute net income for a year.

II. Content.

- (1) To give general information about:

- (a) Safe places to invest.
- (b) Variations between returns from different investments.

- (2) To give practice in computing returns on investments.

III. Information.

Places to invest money safely: (1) Postal savings deposits; (2) government bonds; (3) municipal bonds; (4) savings banks; (5) lending money on notes or mortgages well secured; and (6) buying property wisely.

Geography Teaching—Then and Now

Formidable lists of questions such as the following and those in Figure III below were once hammered into children's heads as a basis of their geographic education:

1. Name the group of islands east of Chinese Tartary.
2. What peninsula is south of Siam?
3. What empire is east of Afghanistan?
4. What mountain is in the northeast part of Turkey?

5. What bounds Ohio on the North? East? South? West?
6. In what latitude is the mouth of the Amazon?
7. What cape in Africa is in nearly the same latitude as the mouth of the La Plata?
8. What isthmus is between the Bay of Campeche and the Gulf of Tehuantepec?
9. For what is Sour Lake noted?

You say these questions cannot be answered by members of the United States Consular Service? The first five questions are from *First Lessons in Geography for Young Chil-*

FIGURE III

MANUAL
OF
GEOGRAPHY,
COMBINED WITH
History and Astronomy
DESIGNED FOR
INTERMEDIATE CLASSES IN PUBLIC AND PRIVATE SCHOOLS
~ 1877 ~

LESSON LX.

Q. For what are Massachusetts, Rhode Island, New Hampshire, and Connecticut noted?

A. For the manufacture of cotton and woolen goods.

Q. What other articles are manufactured in Connecticut?

A. Clocks, buttons, pins, axes, paper, and tin and wooden ware.

Q. What State excels in whale-fishery?

A. Massachusetts has nearly as many men engaged in the whale-fishery as all the world beside.

Q. What part did Massachusetts take in the Revolution?

A. Massachusetts furnished more soldiers and money than any other State.

Q. What great battle was fought near Boston?

A. The Battle of Bunker Hill, June 17th, 1775.

Q. What was the size of each army in the Battle of Bunker Hill?

A. The Americans, 1500, commanded by

Colonel Prescott, the British, 3000, commanded by General Howe.

Q. What was the loss in killed and wounded?

A. The Americans lost 450; the British, 1000. Among the Americans who were killed was General Warren.

Q. From what did Massachusetts derive its name?

A. From Massachusetts Bay; so called from a tribe of Indians.

Q. From what did Cape Cod derive its name?

A. From the cod-fisheries near it.

Q. What can you say of the harbors of Massachusetts?

A. Massachusetts has more good harbors than any other State, except Maine.

Q. Why do the rivers of Connecticut flow south?

A. Because the surface slopes toward Long Island Sound.

Q. In what State was the first cotton-factory in the United States built?

A. In Rhode Island; so called from an island of that name in Narragansett Bay.

dren, published as late as 1874. The last four questions are copied from *An Improved System of Geography*, published in 1876.

Did the catechism method work? This quotation from the Boston School Survey of 1845 answers the question:

In a few schools, the children seem to have been taught orally, and upon correct principles; but generally they were lost when taken out of the common routine of questions. They could bound states and countries; name capitals, capes, and mountains; enumerate rivers, lakes, and bays; and answer a series of questions put by the master, of half an hour's duration; but questioned as to drainage of countries, their capacities for commerce, the causes which direct streams and determine the force of water,—their want of comprehension of these and other similar objects, showed plainly, in almost every school, that they had learned geography as if it were a catalogue of names of all the divisions of water, from ponds up to oceans; of land, from towns to empires.

Today scientific research measures the relative importance of countries, cities, mountains, rivers, etc., and determines which ones every child should be taught to locate. See page 154 of this Bulletin for a discussion of the *basic facts in geography*. Such lists, however, do not become the basis of a catechetical grind. They merely offer the teacher guidance as to what locations need to be emphasized in geography instruction, which seeks to give the child a grasp of the significance of this subject in human development.

These two projects taken from the 1924 Baltimore City Course of Study in Geography for Grades IV-VI are illustrative of modern methods used in geography teaching:

1. Geography of city of Baltimore: Discuss advantages of location, industrial importance, commercial advantages, and living conditions.
2. List of articles used in your home that come from foreign countries. Class visits the Baltimore docks to see the ships that bring supplies, and to learn what they bring and from what places they come.

Language Instruction—Yesterday and Today

You may be able to write fluently and speak with conviction, but can you answer these questions? They were copied from *A Prac-*

tical New Grammar with Exercises of Bad English or an *Easy Guide to Speaking and Writing the English Language Properly and Correctly* written in 1779:

1. Which consonants are double and which are single?
2. What is a mute?
3. Which letters are liquids?
4. What is meant by the word, prosody?
5. How many rules have we for joining words right together in a sentence; or for English concord?

It is a far cry from such questions as the above to these topics in oral and written composition taken from the 1923 Language Course of Trenton, New Jersey for Grade IV:

1. Conversation and discussion lessons on subjects within range of the child's experiences and interests. Suggestive sources of topics: (a) Duties of home life, and (b) world workers—the baker, grocer, iceman, postman; modern trades and workers in them.
2. Writing a reply to a letter received from the teacher assigning or criticizing work done by the pupil.

In the "good old days" children were "exposed" to formal grammar, but did it "take"? This excerpt from the Boston survey¹ of 1845 shows the uselessness of many of the rules of formal grammar children were required to learn:

The questions in grammar are the best proof that scholars may parse technically, and point out the relations of words, their mood, tense, case, person, number and gender; and yet, in the very sentences which they make use of to express these relations, and in quoting rules in justification of what they write, be continually making blunders; and may parse their sentences grammatically, in the most ungrammatical language. The whole number of answers given was 4,183, and these contained 962 errors in spelling, 2,247 errors in grammar, and 8,980 errors in punctuation.

Spelling—Oral Contests vs. Written Usage

Have you ever used one of the following words in a letter or other writing?

chirography	malachite
reconnaissance	quassia
trichina	mnemonics
duodecimo	metonymy

¹ Caldwell, Otis W. and Curtis, Stuart A. *Then and Now in Education, 1845:1923*. Yonkers-on-Hudson, New York. World Book Company. 1924. p. 52.

The above words appeared in a spelling book for grammar grades, used in the schools as late as 1905. The learning of such lists may have produced "winners" of oral spelling matches, but aside from that, it was purely a "cold storage process." Children learned to spell words which they had never heard spoken, or had never seen in print, outside their spelling books, supposing that some day they would be called upon to spell them. It is safe to assume that most children's ability to spell such words soon atrophied from disuse.

Courses today no longer expect a child to do the impossible—to learn all the words in the dictionary. Research has shown that 1,000 words make up more than one-half of all words used in ordinary writing. We know that if the average person can spell the 3,000 most common words in the English language he will seldom find it necessary to refer to the dictionary. With a sure grasp of such a list of words plus proper habits in the use of the dictionary, most practical spelling needs are met. It has been determined with definiteness what words are most often misspelled. Here are some of the words in the English language that are most frequently misspelled:

too, their, believe, principal, separate.

Is it wise to drill children on a few thousand words that they will use, giving special attention to such difficult words as "believe" and "separate," or to strive to teach them thousands of unused words such as "mnemonics" and "metonymy"? Modern courses of study accept the former view.

Can children today spell as well as they could in the "old days"? In Alleghany County, Maryland, some of the parents boasted of how much better they could spell than their children. The assistant superintendent of schools tells how he brought the matter to proof:

I had the children in one of our most progressive communities challenge their parents to spell against them. Fifteen parents and fifteen children stood up on opposite sides. I pronounced the words. The parents all went down with nine children still spelling. . . . Since that evening I have not heard anybody in the county brag about the spelling of adults.¹

¹ Maryland School Bulletin, Volume V, No. 3, November, 1923. State Department of Education, p. 14-15.

History Teaching—Mediaeval and Modern

Today one of the chief reasons for studying past events is that one may better understand the present. Formerly history was taught as a series of facts. These statements are copied from a lesson in *The Child's History of the United States* designed in 1831 as a First Book of History for Schools:

New Hampshire was settled next to Massachusetts, by people who came from England. They settled at a place called *Dover*, on the river *Piscataqua*. This was in 1623.

New Jersey was settled next—in 1624. It was settled by people from Norway. The town first begun was called *Bergen*, after a city of that name in Norway. It lies on the Hudson, three miles from the city of New York.

Questions

1. What state was settled next to Massachusetts? By whom? What place did they settle? On what river? In what year?
2. What state was next settled? In what year? By whom? What town did they settle? How far is this town from New York? On what river?

In the preface of this *First Book of History*, the author, commenting upon its facts and questions wrote: "The simplicity of the plan renders unnecessary any directions, as to the manner, in which the book is to be taught or studied." One wonders, however, whether this history catechism fired the imagination of our grandparents who studied it, and whether it gave them a vision of the life of romance and hardship which the early colonists endured.

Does this outline, taken from the 1924 *Denver Social Science* course of study give children a better idea of colonial life?

Unit V—The Westward Movement and Growth of Transportation

General Aim—to help the child experience the life of the explorer and the pioneer, historically, geographically, and socially.

Specific Aims—1. To develop an appreciation for the courage and perseverance of the early explorer and pioneer in the conquest of the continent.

2. To show how geographical influences have determined, to a large extent, the lives of people.

3. To show how a transportation system was developed with this great westward movement.

Selected Topics to be Treated—1. Contrasts between present-day transportation and communication and that of the past.

2. America compared in historical age with other countries.

3. Settlements of the white man.

4. Life of the pioneer.

Reading—Then and Now

Today the psychologist tells us that *reading is putting thought into the printed page* and not getting thought from it. Hence, people are engaged in research to discover what are the basic experiences which a child needs to have before attempting the reading process. When he does attempt it, what selections shall he read? While as yet we do not have hard and fast answers to these questions, we, at least, no longer require elementary pupils to read such poems as this taken from *Miscellanies, Moral and Instructive in Prose and Verse*, collected from various authors in 1787 "for the use of schools and improvement of young persons of both sexes":

Resignation

Thou Pow'r Supreme, by whose command I live,
The grateful tribute of my praise receive;
To thy indulgence, I my being owe,
And all the joys which from that being flow.
Scarce eighteen suns have form'd the rolling year,
And run their destin'd courses round the sphere,
Since thou my undistinguish'd form survey'd,
Among the lifeless heaps of matter laid;
Thy skill my elemental clay refin'd.

Very different from the above selection are those included in the 1924 Saint Cloud, Minnesota, reading course, which sets up these five objectives for reading in the elementary grades:

1. To cultivate a love for the reading of good literature.
2. To develop proper eye-movement habits.
3. To develop skill in silent reading through the use of life motives.
4. To develop reasonable skill in oral reading through the use of life motives.
5. To develop independence in word recognition necessary for intelligent and rapid silent reading.

Compare the above selection with the carefully graded poems recently voted by the

teachers of the nation as most suitable for use in achieving the reading objectives just cited. This selection is for use in Grade IV.¹

The Arrow and the Song

HENRY WADSWORTH LONGFELLOW

I shot an arrow into the air,
It fell to earth, I knew not where;
For, so swiftly it flew, the sight
Could not follow it in its flight.

I breathed a song into the air,
It fell to earth, I knew not where;
For who has sight so keen and strong,
That it can follow the flight of song?

Long, long afterward, in an oak
I found the arrow still unbroke;
And the song, from beginning to end,
I found again in the heart of a friend.

Character Training—Moral Catechism vs. Habits of Right Conduct

Noah Webster included in his American Spelling Book, published in 1822, a Moral Catechism, for "facilitating the education of youth, and enabling teachers to instil into their minds, with the first rudiments of the language, some just ideas of religion, morals and domestic economy." These are direct quotations:

A Moral Catechism

Question. What is moral virtue?

Answer. It is an honest upright conduct in all our dealings with men.

Question. What is humility?

Answer. A lowly temper of mind.

Question. What is industry?

Answer. It is diligent attention to business in our several occupations.

Question. Do not careless, slovenly people work harder than the neat and orderly?

Answer. Much harder. It is more labor to destroy a growth of sturdy weeds than to pull them up when they first spring from the ground. So the disorders and abuses which grow out of a sloven's carelessness, in time become almost incurable. Hence, such people work like slaves and to little effect.

Question. What is justice?

Answer. It is giving to every man his due.

The exclusion of such questions and answers relative to conduct from our present courses of study has lead some to say that the modern school is Godless. As a matter of fact, the schools are giving more attention to right conduct today than ever before.

¹ Journal of the National Education Association, November, 1925. p. 264.

Experience, however, has shown that moral preachments too often miss the mark. A child may know the definition of virtue, humility, industry, and justice, but it does not follow that he practices these virtues. Good character is the result of "doing" rather than merely "knowing"—it is the outcome of right conduct continued over a period of years until it becomes a habit.

In order that habits of right conduct may be built up, teachers seek to arrange the school environment today so that in every class and in all school activities pupils get pleasure out of being honest, cooperating effectively with their neighbors, reverencing things worthy of veneration, and meeting social situations squarely.

These illustrations are taken from the 1924 Boston *Course in Citizenship through Character Development*:

The Law of Clean Play.—Clean play is best taught when "the play is on." At such times the teacher should use every opportunity to work into

the moral fibre of pupils these big principles which underlie fair play: Justice for all; To win or lose with a pleasant spirit; and To prefer to play and lose rather than not to play at all.

The Law of Self-Reliance.—Provide practice in activities such as these: Allow student councils to handle breaches of discipline; Conduct socialized recitations; Have pupils make list of ten self-reliant men in history; and Discuss questions of moral and physical courage.

An Old Time School—A Daguerrotype Picture

Caldwell and Curtis¹ after reviewing the Boston school survey of 1845 draw these conclusions:

The children's business was to learn and recite; that of the teachers to expound and to appraise; and the function of the training given was supposed to be preparation for living. There were usually one small blackboard to a school, a few small globes, no maps, no supplementary reading, and no legitimate child activity, much routine memorization, endless drill and recitation, and constant repression of childish desire for exercise and play.

¹ Caldwell, Otis W. and Curtis, Stuart A. *Then and Now in Education*, 1845:1923. Yonkers-on-Hudson, New York. World Book Company, 1924. p. 18.

WE MUST have a new theory of education. Schooling must no longer be the mere acquiring of facts and skills to give back on demand at examination time. The new school must be the effort to educate for life through life. It must seek continually to remake life to ever higher and richer levels.

This means a new conception of curriculum. Mere conventional and traditional learning, however deeply entrenched in public esteem, must give way to really educative experiences. Everything accepted into the curriculum must be really practical, that is influencing life for good. Especially the new school must really build moral character. This can be done. It must be done. So the new curriculum will be no narrow, or one-sided affair. The substance of the three R's will be learned, but the enrichment of life and the building of character will be the main objectives, the enrichment of child life and through it the enrichment of adolescent life and through it the enrichment of adult life—one continuous process.—William H. Kilpatrick, *The New Republic*, November 12, 1924, p. 3.

The making of the curriculum is therefore seen to be a cooperative enterprise, enlisting the services of the most expert educational leaders for permanent purposes and values; of supervisors and teachers for that selection and development of immediate purposes and interests which will lead to the use of the socialized values represented by the permanent elements of race experience; and of the children themselves through their expressions of interest and activity which need the help of the school in order that they may be satisfied, enriched, and kept ever growing toward higher levels and values.—Frederick G. Bonser, *The Elementary School Curriculum*, p. 7-8.

Books on Curricular Problems Which Have Been Tried and Found Helpful

Expert Opinion as to Best Books in General Field

A study of scientific work already done in curriculum revision, and a review of frontier thinking as to how further work can best be done, is one of the early steps in an intelligent program of curriculum revision.

What are the books in the general curriculum field, which those who have had experience have found most helpful? To answer this question, this section has been prepared with the aid of sixty-eight representative educators. These included forty-one general curriculum or subject specialists and twenty-seven superintendents of schools or members of their staffs in charge of curriculum problems in cities where curriculum revision has been in progress for some time. To secure the list of books dealing with general curricular problems, letters were sent to curriculum specialists and to superintendents asking for a list of ten general books which they felt would be of greatest help to course of study committees,

composed largely of local teachers. Table 10 is a compilation of their answers. The first twelve books in this table were mentioned from four to seventeen times by the nineteen educators submitting lists of the ten most helpful books dealing with general curricular problems.

Expert Opinion as to Best Books in Subject Fields

A review of some of the best books dealing with general problems of curriculum revision offers opportunity to compare one's own philosophy of education and experience with that of others. One of the next steps in preparation for the revision of a course of study in a particular subject is to review scientific work, already done in that subject and to secure the best thought as to further desirable developments. Fortunately the results of scientific work and progressive thought have been concentrated in a number of texts dealing with different subjects of the elementary curriculum.

TABLE 10.—BOOKS DEALING WITH GENERAL CURRICULAR PROBLEMS

Title	Author	Publisher	Year of Publication
Curriculum Construction.....	Charters, W. W.	Macmillan.....	1923
How to Make a Curriculum.....	Bobbitt, Franklin....	Houghton, Mifflin.....	1924
The Elementary School Curriculum.....	Bonsor, Frederick G....	Macmillan.....	1922
The Curriculum.....	Bobbitt, Franklin....	Houghton, Mifflin.....	1918
Minimum Course of Study.....	Moore, Ernest C.....	Macmillan.....	1923
How to Organize a Curriculum.....	McMurry, Charles A....	Macmillan.....	1923
Child Life and the Curriculum.....	Meriam, Junius L.....	World Book Co.....	1921
Junior High School Education.....	Davis, Calvin O.....	World Book Co.....	1924
Curriculum Making in Secondary Schools.....	Clement, John A.....	H. Holt.....	1923
Curriculum Adjustment in the Secondary School.....	Cox, Philip W.....	Lippincott.....	1925
Research in Constructing the Elementary School Curriculum.....	Department of Superintendence.....	National Education Association.....	1925
An Experiment with a Project Curriculum.....	Collings, Ellsworth....	Macmillan.....	1923
Curriculum Making in Los Angeles.....	Bobbitt, Franklin....	Univ. of Chicago Press.....	1922
Principles of Secondary Education.....	Inglis, Alex. J.....	Houghton, Mifflin.....	1918
Motivation of School Work.....	Wilson, H. B. and Wilson, G. M.....	Houghton, Mifflin.....	1916
Types of Elementary Teaching and Learning.....	Parker, S. C.....	Ginn.....	1923
The Elementary School Curriculum 1924 Yearbook.....	Department of Superintendence.....	National Education Association.....	1924
Elementary School Standards.....	McMurray, F. M.....	World Book Co.....	1913
Junior High School Ideas.....	Van Denburg, Joseph K.....	H. Holt.....	1922
Principles of Secondary Education.....	Monroe, Paul.....	Macmillan.....	1914
What the Schools Teach and Might Teach.....	Survey Committee of Cleveland Foundation.....	Cleveland Foundation.....	1916
Twenty-fourth Yearbook, Parts I and II.....	National Society for the Study of Education.....	Public School Publishing Co.....	1925
Cardinal Principles of Secondary Education.....	Committee on the Reorganization of Secondary Education.....	U. S. Bureau of Education.....	1918
Modern Methods in Teaching.....	Wilson, H. B., Kyle, G. and Lull, Herbert C.....	Silver, Burdett.....	1924

TABLE 10.—BOOKS DEALING WITH GENERAL CURRICULAR PROBLEMS
(CONTINUED)

Title	Author	Publisher	Year of Publication
Sociological Determination of Objectives in Education...	Snedden, David S.	Lippincott.....	1921
Teaching the Elementary School Subjects.....	Rapeer, L. W.	Scribner's.....	1917
A Project Curriculum.....	Wells, Margaret E.	Lippincott.....	1921
Schools of Tomorrow.....	Dewey, John and Dewey, Evelyn.	Dutton.....	1915
The Child and the Curriculum.....	Dewey, John.....	Univ. of Chicago Press..	1902
Present Curriculum Practices in Junior High School and Grades 5-6.....	Glass, James M.	Univ. of Chicago Press..	1924
Conduct Curriculum for Kindergarten and First Grade..	Burke, Agnes; and others	Scribner's.....	1923
Democracy and Education.....	Dewey, John.....	Macmillan.....	1916
Fourteenth, 16th, 17th, and 18th Yearbooks.....	National Society for the Study of Edu- cation.	Public School Publishing Co.	1919
Baltimore County Course of Study.....	Prepared by Lida Lee Tall; Isobel Davidson under direction of Albert S. Cook.	Warwick and York.....	1921
Public Elementary School Curricula.....	Payne, Bruce R.	Silver, Burdett.....	1905
The Education of the Consumer.....	Harap, Henry.....	Macmillan.....	1924
High School Education.....	Johnson, Charles H.	Scribner's.....	1912
Psychology of High School Subjects.....	Judd, Charles H.	Ginn.....	1915
The Redirection of High School Instruction.....	Lull, Herbert C. and Wilson, H. B.	Lippincott.....	1921
Foundations of Method—Informal Talks on Teaching....	Kilpatrick, William H.	Macmillan.....	1925
Syllabus in the Principles of Secondary Education.....	Uhl, Willis L.	Univ. of Wisconsin.....	1923
Self-Directed School.....	Miller, Harry L. and Hargreaves, R.	Scribner's.....	1925
Nineteenth Yearbook, Part I.....	National Society for the Study of Edu- cation	Public School Publishing Co.	1920
Twentieth Yearbook, Part I.....	National Society for the Study of Edu- cation	Public School Publishing Co.	1921
Junior High School Life.....	Tindal, E. V. and Myers, J. D.	Macmillan.....	1924
Junior High School.....	Briggs, Thomas H.	Houghton, Mifflin.....	1920
Human Nature and Conduct.....	Dewey, John.....	H. Holt.....	1922
Principles of Curriculum Making.....	Salisbury, Ethel I.	Board of Education, Berkeley, California	1921
Psychology of the Common Branches.....	Freeman, Frank N.	Houghton, Mifflin.....	1916
Junior High School Curricula.....	Hines, Harian C.	Macmillan.....	1924
The Educative Process.....	Bagley, W. C.	Macmillan.....	1913
The Child and His School.....	Hartman, Gertrude..	Dutton.....	1922
Modern Methods and the Elementary Curriculum.....	Phillips, Claude A.	Century.....	1923
Supervised Study in the Elementary School.....	Hall-Quest, Alfred L.	Macmillan.....	1924
Extra-curricula Activities in High School.....	Poster, Charles R.	Johnson.....	1925
Activity Curriculum.....	Salisbury, Ethel I.	Harr Wagner.....	1924
Types of Teaching.....	Earhart, Lida B.	Houghton, Mifflin.....	1915
Education on the Dalton Plan.....	Parkhurst, Helen Huss.	Dutton.....	1922
The School as a Social Institution.....	Robbins, Charles L.	Allyn.....	1918
Junior High Schools of Rochester.....	Bd. of Ed., Junior High School Council.	Bd. of Ed., Rochester, New York.	1923
A Short Course in the Teaching Process.....	Strayer, George D.	Macmillan.....	1911
The Reorganization and Administration of an Elementary School to Meet the Needs of a Community.....	Kyte, George C.	Univ. of California.....	1925
Studies in Secondary Schools.....	Morrison, Henry C.	Univ. of Chicago Press..	1923
The Child's Mind in the Common Branches.....	La Rue, Daniel W.	Macmillan.....	1924
Development of High School Curricula in the North Cen- tral States from 1860-1918.....	Stout, John Elbert..	Univ. of Chicago Press..	1921
Home and Community Life—Curriculum Studies for the Elementary School.....	Hartman, Gertrude..	Dutton.....	1923
Educational Psychology.....	Thorndike, E. L.	Teachers College.....	1914
The Principles of Education.....	Coursault, Jessie H.	Silver, Burdett.....	1920

Among the contributors to the above list were: Herbert B. Bruner, Teachers College, Columbia University, New York City; Walter D. Cocking, Division of Research, City Public Schools, St. Louis, Missouri; Philip W. L. Cox, School of Education, New York University, New York City; C. O. Davis, University of Michigan, Ann Arbor, Michigan; O. G. Frederick, Assistant Superintendent of Schools, Detroit, Michigan; Armand J. Gerson, Assistant Superintendent of Schools, Philadelphia, Pennsylvania; T. V. Goodrich, Director Bureau of Measurements and Research, City Public Schools, Lincoln, Nebraska; Henry W. Holmes, Dean, School of Education, Harvard University, Cambridge, Massachusetts; George C. Kyte, Associate Research Director, California Curriculum Study, University of California; Berkeley, California; Ida Odelle Rudy, Primary Supervisor, Dayton Public Schools, Dayton, Ohio; J. F. Hsieh, Teachers College, Columbia University, New York City; Fred M. Hunter, Superintendent of Schools, Oakland, California; Maude L. Rupel, City Public Schools, Dayton, Ohio; J. W. Searson, Professor of English, University of Nebraska, Lincoln, Nebraska; F. E. Spaulding, Dean, School of Education, Yale University, New Haven, Connecticut; David A. Ward, Superintendent of Schools, Wilmington, Delaware; Carleton W. Washburne, Superintendent of Schools, Winnetka, Illinois; C. C. Willard, Assistant Superintendent of Schools, Chicago, Illinois; and H. B. Wilson, Superintendent of Schools, Berkeley, California.

To locate the best of these, letters were sent to subject specialists asking them to name six books in their subject which would be most helpful to local curriculum revision committees. Letters were also sent to others interested in the whole field of the curriculum asking them to name ten outstanding books dealing with single subjects of the curriculum.

Table 11 is a compilation of answers. It is interesting to note the variation in length of the lists relative to single subjects. In some cases this indicates a shortage of books on the particular subject concerned; in others it indicates a lack of agreement as to which books are considered most helpful to course of study committees. The books mentioned most frequently head each subject list.

TABLE 11.—BOOKS DEALING WITH SINGLE SUBJECTS
ARITHMETIC

Title	Author	Publisher	Year of Publication
The New Methods in Arithmetic.....	Thorndike, E. L.....	Rand, McNally.....	1921
Psychology of Arithmetic.....	Thorndike, E. L.....	Macmillan.....	1922
Corrective Arithmetic.....	Osburn, Worth J.....	Houghton, Mifflin.....	1924
Teaching of Arithmetic.....	Klapper, P.....	Appleton.....	1916
Teaching of Arithmetic.....	Brown, J., and Coffman, L.....	Row, Peterson.....	1914
Yearbooks of the National Society for the Study of Education—16th, 17th, 18th.	National Society for the Study of Education	Public School Publishing Co.	1917-19
Research in Constructing the Elementary School Curriculum, Chap. III.	Arithmetic Committee, Dept. of Superintendence.	National Education Association.	1925
The Reorganization of Mathematics in Secondary Education (Bulletin No. 32).	Committee on Reorganization of Secondary Education.	U. S. Bureau of Education	1921
How To Teach Primary Number.....	Stone, J. C.....	Sanborn.....	1922
The Teaching of Arithmetic.....	Lennes, N. J.....	Macmillan.....	1923
Survey of Business and Social Usage of Arithmetic.....	Wilson, G. M.....	Teachers College, Columbia University.	1919
Principles and Method of Teaching Arithmetic.....	Overman, James R.....	Lyons and Carnahan.....	1920
The Teaching of Primary Arithmetic.....	Suzzallo, Henry.....	Houghton, Mifflin.....	1912
Denver Course of Study in Mathematics.....	Denver Board of Education.	Denver Board of Education.	1925
Teaching Arithmetic Through Games and Other Pupil Activities.	Guiler, Walter S.....	Edwards Brothers, Ann Arbor, Michigan.	1924
Prevention and Correction of Errors in Arithmetic.....	Myers, Garry C.....	Plymouth Press.....	1925
Teaching Arithmetic.....	Stone, J. C.....	Sanborn.....	1918
A Tentative List of Objectives in the Teaching of Junior High School Mathematics with Investigations of their Validity.	Schorling, Raleigh.....	George Wahr, Ann Arbor, Michigan.	1924
Advanced Arithmetic.....	Smith, David E.....	Ginn.....	1905
Report of the Committee on the Reorganization of Secondary School Mathematics.	National Committee on Mathematics Requirements.	Mathematics Association of America.	1923
Junior Business Training.....	Nichols, Frederick George.	American Book Co.....	1923
Number Projects for Beginners.....	McLaughlin, K. L. and Troxell, E.	Lippincott.....	1923
Fundamentals of High School Mathematics.....	Rugg, Harold O., and Clark, John R.	World Book Co.....	1920
Teaching Junior High School Mathematics.....	Barber, Harry C.....	Houghton, Mifflin.....	1924
Denver Course of Study in Arithmetic (Grades 1-6).....	Denver Board of Education.	Denver Board of Education.	1924
Progress of Arithmetic in the Last Quarter of a Century. Curricular Practices in Junior High School and 5th and 6th Grades.	Smith, David E.....	Ginn.....	1923
Teaching the Common Branches.....	Glass, James M.....	University of Chicago Press.	1924
Arithmetic (Bulletin No. 15).....	Charters, W. W.....	Houghton, Mifflin.....	1913
Manual for Teachers.....	Minneapolis Board of Education.	Board of Education, Minneapolis, Minnesota.	1924
A Foundational Study in the Pedagogy of Arithmetic.....	Stone, J. C.....	Sanborn.....	1914
	Howell, Henry Budd.	Macmillan.....	1914

Among the contributors to the above list were: Herbert B. Bruner, Teachers College, Columbia University, New York City; John R. Clark, Editor, *The Mathematics Teacher* National Council of Teachers of Mathematics, New York City; Walter D. Cocking, Division of Research, City Public Schools, St. Louis, Missouri; O. G. Frederick, Assistant Superintendent of Schools, Detroit, Michigan; Armand J. Gerson, Associate Superintendent of Schools, Philadelphia, Pa.; J. F. Hoist, Teachers College, Columbia University; Josephine A. Kelley, Supervisor of Grades, Eau Claire Public Schools, Eau Claire, Wisconsin; George C. Kyte, California Curriculum Study, University of California; Garry C. Myers, Cleveland Heights, Ohio; W. J. Osburn, Supervisor of Educational Measurements, State Department of Public Instruction, Madison, Wisconsin; Maude Rupel, City Public Schools, Dayton, Ohio; F. E. Spaulding, Dean, School of Education, Yale University; John C. Stone, Montclair State Normal School, Upper Montclair, N. J.; C. C. Willard, Assistant Superintendent of Schools, Chicago, Illinois; G. M. Wilson, Boston University, Boston, Massachusetts; H. B. Wilson, Superintendent of Schools, Berkeley, California; Clifford Woody, Director, Bureau of Educational Reference and Research, University of Michigan, Ann Arbor, Michigan.

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Value of Selected Bibliographies

Since the influences, which may have resulted in the choice of particular books, are not known, the number of times that any one book is mentioned should not be given too much weight. The fact that some of the books listed are more recent than others, and hence not so well known, undoubtedly accounts for their not being mentioned more often. Rela-

tive to the total lists of books presented in Tables 10 and 11, it would appear that they represent:

1. A recent and reasonably comprehensive list of books, dealing with general problems of curriculum construction and with those confronted in revising particular subject courses.

2. A rough indication as to which of these books have been found most helpful to course of study committees.

ART EDUCATION

Year of Publication	Title	Author	Publisher	Year of Publication
1921	How Children Learn to Draw.....	Sargent, Walter and Miller, Elizabeth E.	Ginn.....	1916
1922	Composition: A Series of Exercises in Art Structure for Use of Students and Teachers.	Dow, A. W.....	Doubleday, Page.....	1924
1924	Beginnings of Art in Public Schools.....	Mathias, Margaret E.	Scribner's.....	1924
1917-19	Organisation and Teaching of Art.....	Winslow, Leon L.....	Warwick and York.....	1925
1925	Industrial Arts for Elementary Schools.....	Bonser, Frederick G. and Moseman, L. C.	Macmillan.....	1923
1921	Elementary Industrial Arts.....	Winslow, Leon L.....	Macmillan.....	1922
	The Enjoyment and Use of Color.....	Sargent, Walter.....	Scribner's.....	1923
1922	Principles of Design.....	Batchelder, E.....	Inland Printer.....	1904
1923	Applied Drawing.....	Brown, Harold H.....	Atkinson, Mentzer.....	1916
1923	Art Education.....	Bailey, Henry T.....	Houghton, Mifflin.....	1914
1919	Art in the School.....	Boas, Belle.....	Doubleday, Page.....	1924
	Social and Industrial Studies for the Elementary Grades.....	Welling, Jane B. and Calkins, C. W.	Lippincott.....	1923
1920	Essentials of Design.....	Degarmo, Charles and Winslow, L.L.	Macmillan.....	1924
1925	Applied Art: Drawing, Painting, Design and Handicraft.....	Lemos, Pedro J.....	Pacific Press.....	1920
1924	Fine and Industrial Arts in Elementary Schools.....	Sargent, Walter and Miller, Elizabeth E.	Ginn.....	1912
1925	Bookbinding for Beginners.....	Bean, F. O. and Brodhead, John C.	School Arts.....	1914
1918	Teaching of the Industrial Arts in the Elementary School.....	McMurry, Oscar L., Eggers, G.W., and McMurry, C. A.	Macmillan.....	1923
1905	The Significance of the Fine Arts.....	American Institute of Architects, Committee on Education.	Jones Marshall Co.....	1923
1923	Industrial Arts Design.....	Varnum, W. H.....	Scott.....	1916
1923	Freehand Perspective.....	Norton, Dora M.....	Dora M. Norton, Brooklyn.	1909
1920	Instruction in Art in the U. S., Bulletin 1918, No. 43.....	Sargent, Walter.....	U. S. Bureau of Education.	1918
1924	How to Enjoy Pictures.....	Emery, Mabel S.....	Prang Publishing Co.....	1898
1924	Supplement to the Eighteenth Yearbook of the National Society for the Study of Education.	Ayer, Fred.....	Public School Publishing Co.	1919
1923	Illustrative Handwork for Elementary School Subjects.....	Dobbs, Ella V.....	Macmillan.....	1917
1924	Art Simplified.....	Lemos, Pedro J. and Lemos, J. T.	Prang Publishing Co.....	1921
1913	Art Education.....	Lemos, Pedro J.....	Pacific Publishing Co.....	1925
1924	Art in the Schools.....	Boas, Belle.....	Teachers College.....	1924
1914	Vision and Design.....	Fry, Roger E.....	Brentanos.....	1921
1914	Nature, Practice, and History of Art.....	Mongonile, Harold V.	Scribner's.....	1924
	Industrial and Applied Arts. Eight Books.....	Bush, Elmer E. and F. L.	Mentzer, Bush and Co.....	1922-1924
	Industrial Arts Textbook. Eight Parts.....	Snowden, Bonnie E. and Froehlich, Hugo.	Prang Publishing Co.....	1915

Among those contributing to the above list were: O. G. Frederick, Assistant Superintendent of Schools, Detroit, Michigan; J. F. Hsieh, Teachers College, Columbia University, New York City; C. Valentine Kirby, Director of Art, Pennsylvania State Department; Walter H. Klar, Supervisor of Art and Handwork, Springfield, Massachusetts; Ethelwyn Miller, John Herron Art School, Indianapolis, Indiana; C. E. Newell, Department of Manual Arts, School Committee of the City of Boston; Clara P. Reynolds, Director, Fine and Industrial Arts, Seattle Public Schools, Seattle, Washington; W. H. Varnum, Associate Professor of Applied Arts, University of Wisconsin, Madison, Wisconsin; Jane Betsy Welling, Director of Art Education, Toledo, Ohio; Leon L. Winslow, Director of Art, Baltimore, Maryland.

HEALTH AND PHYSICAL EDUCATION

Title	Author	Publisher	Year of Publication
Organization and Administration of Physical Education..	Williams, J. F.....	Macmillan.....	1922
School Program of Physical Education.....	Hetherington, Clarke W.	World Book Co.....	1922
Pedagogy of Physical Training.....	Crampton, C. W....	Macmillan.....	1922
Practice of Organized Play.....	Bowen, Wilbur P. and Mitchell, Elmer D.	A. S. Barnes and Co.....	1923
How to Live.....	Life Extension Institute	Funk and Wagnall's.....	1919
Body Mechanics and Health.....	Thomas, Leah C. and Goldthwaite, Joel Ernest	Houghton, Mifflin.....	1922
Hygiene of the School Child.....	Terman, Louis M....	Houghton, Mifflin.....	1914
Education in Health.....	Payne, Enoch G....	Lyons and Carnahan.....	1921
Health Education Bulletins.....	Wedgewood, Hazel and Harriet; Reaney, Bernice C.; Hutchinson, Dorothy, and others.	U. S. Bureau of Education.	1920-1924
Health Education—A Program for Public Schools and Teacher Training Institutions.	Joint Committee of National Education Association and American Medical Association.	National Education Association.	1924
Health Education in Rural Schools.....	Andreas, James M....	Houghton, Mifflin.....	1919
How to Make a Curriculum—Chapter X.....	Bobbitt, Franklin....	Houghton, Mifflin.....	1924
The Elementary School Curriculum—Chapter XVI.....	Bonsar, F. G.....	Macmillan.....	1922
A School Program in Physical Education.....	Hetherington, Clarke W.	World Book Co.....	1922
Health and Safety in the New Curriculum.....	Payne, E. G.....	American Viewpoint Society.	1925
Textbook of Physiology and Anatomy.....	Williams, Jesse F....	Saunders.....	1923
Elementary Anatomy and Physiology.....	Mulliner, Mary R....	Lea.....	1924
Plays and Games for Indoors and Out.....	Parsons, Belle Ragner.	Pitman.....	1911
Teaching Hygiene in the Grades.....	Andreas, James Mace	Houghton, Mifflin.....	1918
Most Wonderful House in the World.....	Haviland, Mary S....	Lippincott.....	1921
Health and Success.....	Andreas, James Mace and Evans, W. A.	Ginn.....	1925

Contributors: C. O. Davis, University of Michigan, Ann Arbor, Michigan; Walter W. Davis, Department of Physical Education, Seattle Public Schools, Seattle, Washington; Armand J. Gerson, Associate Superintendent of Schools, Philadelphia, Pa.; J. F. Hosc, Teachers College, Columbia University, New York City, and F. W. Maroney, Department of Health Instruction, Atlantic City Public Schools, Atlantic City, New Jersey.

HOME ECONOMICS

Title	Author	Publisher	Year of Publication
Home Economics in Elementary and Secondary Schools..	Hanna, Agnes K....	Whitcomb and Barrows..	1922
Teaching Home Economics.....	Cooley, Anna M., Winehell, Cora M.; Spohr, W. H. and Marshall, J. A.	Macmillan.....	1919
Food Facts for Every Day.....	Winehell, Florence E.	Lippincott.....	1924
Food Planning and Preparation, A Junior Course in Food Study.	Wellman, Mabel....	Lippincott.....	1923
Dietetics for High School.....	Williard, Florence and Gillet, Lucy H.	Macmillan.....	1920
Economics of the Family.....	Wardell, R. A. and Taber, Clarence W.	Lippincott.....	1923
Elementary Home Economics, First Lessons in Sewing and Textiles, Food and Cookery, and the Care of the House.	Matthews, Mary L....	Litt'e Brown and Co.....	1921
Household Arts for Home and School.....	Cooley, Anna M. and Spohr, W. H.	Macmillan.....	1920
First Course in Homemaking.....	Calvert, Maude R....	Turner Smith and Co....	1924
Principles of Clothing Selection.....	Buttrick, H. G.....	Macmillan.....	1923
A Manual of Homemaking.....	V a n Rensselaer, Martha and Flora, Rose.	Macmillan.....	1919
Reorganization of Home Economics—Courses in Secondary School (Bulletin, 1922, No. 5).	Commission on Re-organisation of Secondary Education.	U. S. Bureau of Education.	1923
Home Economics in American Schools.....	Trilling, Mabel T....	Department of Education, University of Chicago.	1920
Basic Study in Home Economics, Educational Problems.	Robertson Annie I..	Bureau of Research in Household Arts Education, Teachers College, Columbia University.	Unpublished

HOME ECONOMICS (Continued)

Title	Author	Publisher	Year of Publication
Home Economics Education, Organization and Administration (Bulletin No. 23).	Bawden, Wm. T. . . .	Federal Board of Vocational Education, Government Printing Office.	1923
Course of Study for High Schools—Home Economics	Arkansas State Department of Education.	State Department of Education.	1922
Home Economics for Girls	Florida State Department of Instruction.	Florida State Department of Instruction.	1924
Practical Arts Below the Seventh Grade	Indiana State Department of Public Instruction.	Indiana State Department of Public Instruction.	1916
Home Economics State Course of Study for Secondary Schools.	Indiana State Department of Public Instruction.	Indiana State Department of Public Instruction.	1923
Course of Study in Home Economics for the Public Schools of Louisiana.	Louisiana State Department of Education.	Louisiana State Department of Education.	1924
Syllabus for Homemaking and Home Economics	University of the State of New York.	University of the State of New York.	1924
Course of Study for Home Economics (Home Economics Bulletin No. 3, 1924).	Oklahoma State Department of Education.	Oklahoma State Department of Education.	1924
Home Economics for Elementary Schools (Home Economics Bulletin No. 2, 1924).	Oklahoma State Department of Education.	Oklahoma State Department of Education.	1924
Syllabus—Home Economics (Bulletin No. 9, Home Economics Series No. 1).	Pennsylvania State Department of Public Instruction.	Pennsylvania State Department of Public Instruction.	1924
A Two-year Course of Study in Home Economics for County High Schools of Tennessee.	Tennessee State Department of Education.	Tennessee State Department of Education.	1924
Suggested Outlines for Study of Vocational Home Economics in Rural and Small High Schools in Texas.	Texas State Board for Vocational Education.	Texas State Board for Vocational Education.	1923
Food Planning and Preparation	Wellman, Mabel T. . . .	Lippincott	1923
School and Home Cooking	Greer, Charlotte C. . . .	Allyn	1920
Domestic Science Books, I, II, III	Austin, Bertha J.	Lyons	1915
Spending the Family Income	Donham, S. Agnes	Little Brown Co.	1921
Meal Planning and Table Service	Bailey, N. Beth	Manual Arts Press	1924
Successful Canning and Preserving	Powell, Ola	Lippincott	1919
Housewifery	Balderson, L. R.	Lippincott	1921
Home Economics in Education	Bevier, Isabel	Lippincott	1924
Textile Fabrics	Dyer, Elizabeth	Houghton, Mifflin	1923
Report of Survey of the Public School System, Stamford, Connecticut.	Institute of Educational Research.	Teachers College, Columbia University.	1922
Report of the Survey of the Public School System of Baltimore.	Cooley, Anna G.	Teachers College, Columbia University.	1920

Among those contributing to the above list were: Adelaide Steel Baylor, Chief, Home Economics Division, Federal Board for Vocational Education, Washington, D. C.; Henrietta W. Calvin, Director, Division of Home Economics, Philadelphia Public Schools, Philadelphia, Pennsylvania; C. O. Davis, University of Michigan, Ann Arbor, Michigan; Ula M. Dow, School of Household Economics, Simmons College, Boston, Massachusetts; O. G. Frederick, Assistant Superintendent of Schools, Detroit, Michigan; Treva E. Kauffman, Supervisor of Home Economics Education, the University of the State of New York, Albany, New York; Wilhelmina Spohr, School of Practical Arts, Teachers College, Columbia University, New York; and Mabel W. Trilling, Department of Home Economics, University of Chicago, Chicago, Illinois.

INDUSTRIAL ARTS

Title	Author	Publisher	Year of Publication
Industrial Arts for Elementary Schools	Bonser, Frederick G. and Mossman, L. C.	Macmillan	1923
Elementary Industrial Arts	Winalow, Leon L.	Macmillan	1922
Social and Industrial Studies	Welling, Jane Betsy and Calkins, C. W.	Lippincott	1923
The Place of Industries in Elementary Education	Dopp, Katherine E.	University of Chicago Press	1903
The Elementary School Curriculum	Bonser, F. G.	Macmillan	1922
Primary Handwork	Dobbs, E. V.	Macmillan	1914
Illustrative Handwork	Dobbs, E. V.	Macmillan	1917
Teaching of Industrial Arts in Elementary Schools	McMurry, C. Eggers, W. and McMurry, O.	Macmillan	1923
Manual Arts in Junior High Schools (Bulletin 1924, No. 1)	Roberts, W. E.	U. S. Bureau of Education	1924

Contributors: F. G. Bonser, Teachers College, Columbia University; J. F. Hosc, Teachers College, Columbia University; Clara P. Reynolds, Director, Fine and Industrial Arts, Seattle Public Schools; W. E. Roberts, Supervisor of Manual Arts, Cleveland Public Schools, Cleveland, Ohio.

LANGUAGE AND COMPOSITION

Title	Author	Publisher	Year of Publication
Yearbooks, National Society, 16th, 17th and 20th	National Society for the Study of Education.	Public School Publishing Co.	1917-21
Speaking and Writing English	Sheridan, Bernard M.	Sanborn	1917
Teaching English in Elementary and Junior High Schools; a manual of method.	Klapper, Paul	Appleton	1925
Standards in English	Mahoney, John J.	World Book Co.	1919
The Teaching of English in Elementary and Secondary Schools.	Carpenter, G. R. and others.	Longmans	1913
Our Living Language: How to Teach It and How to Use It.	Driggs, Howard R.	University Publishing Co.	1920
The Teaching of English in Elementary and Secondary Schools.	Chubb, Percival	Macmillan	1902
Literature in the Elementary School	MacClintock, Porter L.	University of Chicago Press.	1907
Course of Study in Grammar based upon the grammatical errors of school children of Kansas City, Missouri.	Charters, W. W. and Miller, Edith.	University of Missouri	Bulletin 1915
The Reorganization of English in Secondary Schools, (Bulletin 1917, No. 2).	Hosic, J. F.	U. S. Bureau of Education.	1917
Teaching the Language Arts: Speech, Reading, Composition.	Hinsdale, B. A.	Appleton	1897
English in Service	Hatfield, Walter W. and McGregor, A. L.	Doubleday, Page	1922
Self-Improvement in English	Davis, H. W.	Doubleday, Page	1925
Elementary Course in English	Hosic, J. F.	University of Chicago Press.	1917
Report of the Committees on Secondary School Subjects of the National Education Association.	Committee on Reorganization of Secondary Education.	U. S. Bureau of Education.	1921
Essential Principles of Teaching Reading and Literature	Leonard, S. A.	Lippincott	1922
Supervised Study of English	McGregor, A n n a Laura.	Macmillan	1921
The Teaching of Oral English	Bolenius, Emma M.	Lippincott	1916
English Composition as a Social Problem	Leonard, S. A.	Houghton, Mifflin	1917

Contributors: C. O. Davis, University of Michigan, Ann Arbor, Michigan; J. F. Hosic, Teachers College, Columbia University, New York City; George C. Kyte, California Curriculum Study, University of California, Berkeley, California; Maude L. Rupel, Dayton Public Schools, Dayton, Ohio; J. W. Searson, University of Nebraska, Lincoln, Nebraska; C. C. Willard, Assistant Superintendent of Schools, Chicago, Illinois; and H. B. Wilson, Superintendent of Schools, Berkeley, California.

SPELLING

Title	Author	Publisher	Year of Publication
Teaching of Spelling	Tidyman, Willard F.	World Book Co.	1919
Eighteenth Yearbook of the National Society for the Study of Education, Part II, Chapter III.	National Society for the Study of Education.	Public School Publishing Co.	1922
Guide to the Teaching of Spelling	Pryor, Hugh E. and Pittman, M. S.	Macmillan	1921
The Teaching of Spelling: A Critical Study of Recent Tendencies in Method	Sussallo, Henry	Houghton, Mifflin	1913
Horn-Ashbaugh Speller for Grades One to Eight (Preface)	Horn, Ernest and Ashbaugh, Ernest J.	Lippincott	1921
Research in Constructing the Elementary School Curriculum, Chapter IX	Committee on Spelling.	National Education Association	1925
The Child and His Spelling	Cook, William A. and O'Shea, M. V.	Bobbs-Merrill Co.	1914
Types of Elementary Teaching and Learning, Chapter IV.	Parker, Samuel C.	Ginn	1923
Teaching Elementary School Subjects (Chapter on Spelling)	Rapeer, Louis W.	Scribner's	1917

Among those contributing to the above list were: E. J. Ashbaugh, Assistant Director, Bureau of Educational Research, Ohio State University, Columbus, Ohio; Helen R. Gumlick, Supervisor, Primary Grades and Kindergarten, Denver Public Schools, Denver, Colorado; Ernest Horn, College of Education, State University of Iowa, Iowa City, Iowa; J. F. Hosic, Teachers College, Columbia University, New York City; W. F. Tidyman, State Teachers College, Fresno, California.

PENMANSHIP

	Title	Author	Publisher	Year of Publication
1917-21	The Teaching of Handwriting..... How to Teach Handwriting.....	Freeman, Frank N..... Freeman, F. N. and Dougherty, M. L.	Houghton, Mifflin..... Houghton, Mifflin.....	1914 1923
1917	Research in Constructing the Elementary School Curriculum, Chapter VI.	Penmanship Committee, Dept. Superintendence.	National Education Association.	1925
1925	A Preliminary Study of Penmanship Systems (Chapter IV of Studies in Administrative Research, Bulletin No. 2, Seattle Public Schools).	Ayer, Fred C.....	Seattle Public Schools....	1925
1919	Teaching Elementary Subjects.....	Rapeer, L. W.....	Scribner's.....	1917
1920	Measuring the Work of the Public Schools (Chapter IV in Cleveland Survey Report).	Judd, Charles H.....	Cleveland Foundation....	1916
1902	Educational Tests and Measurements.....	Monroe, W. S., Devoss, J. C. and Kelly, F. J.	Houghton, Mifflin.....	1917
1907	Fourteenth Yearbook of the National Society, Part I, Chapter V.	Freeman, F. N.....	Public School Publishing Co.	1919
etin 1915	Eighteenth Yearbook of the National Society, Part II, Chapter I.	Freeman, F. N.....	Public School Publishing Co.	1919
1917	The Teaching of the Common Branches.....	Charters, W. W.....	Houghton, Mifflin.....	1917
1897	Teaching of Penmanship.....	Houston, Harry.....	Harry Houston, 162 Willard Street, New Haven Connecticut.	1913
1922	A Course of Study in Handwriting. Board of Education Bulletin No. 6.	Department of Public Instruction, Boston, Massachusetts.	Board of Education, Boston Public Schools.	1920
1925	The Teaching of Penmanship.....	Department of Public Instruction, Trenton, N. J.	Board of Education, Trenton Public Schools.	1912
1917	Psychology and Pedagogy of Handwriting.....	Thompson, Mary E..	Baltimore Warwick, York.	1911
1922	Normal Child and Primary Education.....	Gesell, A. L. and Gesell, B. C.	Ginn.....	1912
1921	The Primary School.....	Moore, Annie E.....	Houghton, Mifflin.....	1925
1916	Handwriting Movement.....	Freeman, Frank N.....	University of Chicago Press.	1918
Among those contributing to the above list were: Theodocia Carpenter, Supervisor of Handwriting, Grand Rapids, Michigan; O. G. Frederick, Assistant Superintendent of Schools, Detroit, Michigan; Frank N. Freeman, University of Chicago, Chicago, Illinois; Harry Houston, Supervisor of Penmanship, New Haven Public Schools, New Haven, Connecticut; George C. Kyte, California Curriculum Study, University of California, Berkeley, California; Joseph S. Taylor, District Superintendent of Schools, New York City; H. C. Walker, Supervisor of Penmanship, St. Louis Public Schools, St. Louis, Missouri; and H. B. Wilson, Superintendent of Schools, Berkeley, California.				

READING

	Title	Author	Publisher	Year of Publication
ear of blication	Materials for Reading: Their Selection and Organization.	Uhl, W. L.....	Silver, Burdett.....	1924
1919	Yearbooks of the National Society, 16th, 17th, 18th and 20th.	National Society for the Study of Education	Public School Publishing Co.	1919-21
1922	Silent and Oral Reading.....	Stone, Clarence P...	Houghton, Mifflin.....	1922
1921	The Teaching of Reading.....	Wheat, Harry G.....	Ginn.....	1923
1913	Reading Objectives.....	Anderson, C. J. and Davidson, Isobel	Laurel Book Co.....	1925
1921	Essential Principles of Teaching Reading and Literature in the Intermediate Grades and High School.	Leonard, S. A.....	Lippincott.....	1922
1925	Summary of Investigations Relating to Reading.....	Gray, W. S.....	University of Chicago Press.	1925
1914	How to Teach Reading.....	Pennell, M. E. and Cusack, A. M.	Houghton, Mifflin.....	1923
1923	Fundamental Reading Habits (Supplement Educational Monthly, Number 2)	Buswell, Guy T.....	Department of Education, University of Chicago.	1922
1917	Silent Reading.....	Germane, C. E. and E. G.	Row, Peterson.....	1922
	Silent Reading.....	O'Brien, J. A.....	Macmillan.....	1921
	Psychology and Pedagogy of Reading.....	Huey, E. B.....	Macmillan.....	1908
	Experimental Study of the Eye-voice Span in Reading..	Buswell, Guy T.....	University of Chicago Press	1920
	Silent Reading: A Study of the Various Types.....	Judd, Charles H. and Buswell, G. T.	University of Chicago Press.	1922
	Interest Factors in Primary Reading Material.....	Dunn, F. W.....	Teachers College.....	1921
	Teaching Children to Read.....	Klapper, Paul.....	Appleton.....	1916
	Deficiencies in Reading Ability: Their Diagnosis and Remedies	Gray, T. C.....	D. C. Heath.....	1922
	Teachers Word Book.....	Thorndike, E. L.....	Teachers College, Columbia University.	1921

READING (Continued)

Title	Author	Publisher	Year of Publication
Standards in English.....	Mahoney, J. J.	World Book Co.	1919
Empirical Studies in School Reading.....	Hosie, J. F.	Teachers College, Columbia University.	1921
Reading for Fun.....	Green, Jenny L.	Richard G. Badger.	1925
Course of Study in Reading.....	St. Cloud Board of Education	Board of Education, St. Cloud, Minnesota.	1914
Literature in the Elementary Schools.....	MacClintock, Porter L.	University of Chicago Press.	1907
Phonics in Reading.....	Haliburton, Margaret	Johnston.....	1908
Children's Interests in Reading.....	Jordan, A. M.	Teachers College.....	1921
Research in Constructing the Elementary School Curriculum Chapter V	Reading Committee, Dept. of Superintendence	National Education Association.	1925
Twenty-fourth Yearbook of the National Society for the Study of Education, Part I	National Committee on Reading	Public School Publishing Co.	1925
How to Teach Phonics.....	Dougherty, Mary L.	Houghton, Mifflin.....	1923

Among those contributing to the above list were: Walter D. Cocking, Division of Research, St. Louis Public Schools, St. Louis, Missouri; O. G. Frederick, Assistant Superintendent of Schools, Detroit, Michigan; Armand J. Gerson, Associate Superintendent of Schools, Philadelphia, Pennsylvania; William S. Gray, Dean, School of Education, University of Chicago, Chicago, Illinois; J. F. Hosie, Teachers College, Columbia University, New York City; Frances Jenkins, University of Cincinnati, Cincinnati, Ohio; S. A. Leonard, University of Wisconsin, Madison, Wisconsin; Maude Rupel, Dayton Public Schools, Dayton, Ohio; W. W. Theiser, Assistant Superintendent of Schools, Milwaukee, Wisconsin; W. L. Uhl, Department of Education, University of Wisconsin, Madison, Wisconsin; C. W. Washburne, Superintendent of Schools, Winnetka, Illinois; C. C. Willard, Assistant Superintendent of Schools, Chicago, Illinois; H. B. Wilson, Superintendent of Schools, Berkeley, California; and Laura Zirbes, Teachers College, Columbia University.

MUSIC

Title	Author	Publisher	Year of Publication
Education Through Music.....	Farnsworth, Charles	American Book Co.	1909
High School Music Teaching for Superintendents, Music Supervisors, Grade and High School Teachers.	Giddings, T. P. and Baker, E. L.	E. L. Baker, 428 Franklin Street, Appleton, Wisconsin	1922
School Music Handbook.....	Cundiff, Hannah M. and Dykema, Peter	C. C. Birchard, and Co., Boston	1923
Introduction to School Music Teaching.....	Gehrken, Karl.....	C. C. Birchard and Co., Boston	1920
Grade School Music Teaching for Superintendents, Music Supervisors, and Grade Teachers	Giddings, T. P.	Cougdon Co., New York	1918
Music in Secondary Schools, Bulletin 1917, No. 49.....	Earhart, Will and McConathy, A.	U. S. Bureau of Education.	1919
The Psychology of Musical Talent.....	Seashore, Carl E.	Silver, Burdett.....	1919
Music Supervisor: His Training, Influence and Opportunity	Tapper, Thomas....	Oliver Ditson Co., Boston	1916
Recent Advances in Instruction in Music—Bulletin, 1923, No. 20	Earhart, Will and Boyd, C. N.	U. S. Bureau of Education.	1923
Melodic Method in School Music: Manual for Teachers and Supervisors	Taylor, David C....	Macmillan.....	1918
Public School Orchestras and Bands.....	Woods, Glenn H.	Oliver Ditson Co.	1920
How to Study Music.....	Farnsworth, Charles H.	Macmillan.....	1920
Proceedings Music Supervisors' National Conference, 1923, 1924, 1925	G. O. Bowen, Editor (Tulsa, Oklahoma)	G. O. Bowen.....	1923-25
Creative Music for Children.....	Coleman, S. N.	Putnam.....	1922
A Standard Course in Music for Graded Schools (Bulletin 1921, No. 1)	Musical Supervisors' National Conference.	George Oscar Bowen, Tulsa, Oklahoma.	1921
Music in the Junior High School (Bulletin 1923, No. 4) ..	Musical Supervisors' National Conference.	George Oscar Bowen, Tulsa, Oklahoma.	1925
Music in the Secondary Schools (Bulletin 1917, No. 49) ..	Earhart, Will and McConathy, O.	U. S. Bureau of Education	1917
The Need for Art in Life.....	Holburn, John B. S. .	G. Arnold Shaw.....	1915
Progressive Series History of Music.....	Forsyth, Cecil.....	Art Publication Society ..	1923
Introduction to Music Appreciation and History.....	Moyer, Dorothy T. .	Oliver Ditson Co.	1923
Music Appreciation.....	Hamilton, Clarence G.	Oliver Ditson Co.	1920
Education and the Larger Life.....	Henderson, Charles Hanford.	Houghton, Mifflin.....	1902

Among those contributing to the above list were: C. O. Davis, University of Michigan, Ann Arbor, Michigan; Peter W. Dykema, Director, School of Music Education, Teachers College, Columbia University, New York City; Will Earhart, Director of Music, Pittsburgh Public Schools, Pittsburgh, Pennsylvania; O. G. Frederick, Assistant Superintendent of Schools, Detroit, Michigan; J. F. Hosie, Teachers College, Columbia University, New York City; Jacob Kwalwasser, Head of Department of Public School Music, University of Iowa, Iowa City, Iowa.

SOCIAL STUDIES

Year of
Publication

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Schools,
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Title	Author	Publisher	Year of Publication
The Teaching of History in Junior and Senior High School. Twenty-second Yearbook, Part II, National Society for the Study of Education.	Tryon, R. M.	Ginn.	1921
The Teaching of History in Elementary and Secondary Schools.	1922 Yearbook Committee.	Public School Publishing Co.	1923
Teaching Geography by Problems.	Johnson, Henry.	Macmillan.	1915
How to Teach American History; a Handbook for Teachers and Student.	Smith, E. Ehrlich.	Doubleday, Page.	1921
Study of History in the Elementary Schools.	Wayland, John W.	Macmillan.	1914
Education for Citizenship in a Democracy.	American Historical Association.	Scribner's.	1909
Education for Citizenship.	Woellner, Fredric P.	Scribner's.	1923
Study of History in the Elementary Schools.	Almack, John C.	Houghton, Mifflin.	1924
	Kendall, Calvin W. and Stryker, Florence E.	Houghton, Mifflin.	1918
The History Inquiry.	Dawson, Edgar.	McKinley Publishing Co., Philadelphia.	1924
The Teaching of Government: Report of the American Political Science Association by the Committee on Instruction.	American Political Science Association.	Macmillan.	1916
Maryland School Bulletin, Vol. III, No. 4.	Maryland State Department of Education.	Maryland State Board of Education.	1921
Study of History in the Elementary Schools.	Committee of Eight of the American Historical Association.	Scribner's.	1909
Social and Industrial Studies for the Elementary Grades.	Welling, Jane Betay and Calkins, C. W.	Lippincott.	1923
Home and Community Life; Curriculum Studies for the Elementary School.	Hartman, Gertrude.	Dutton.	1923
Teaching the Social Studies.	Dawson, Edgar.	Macmillan.	1926
Citizenship in School and Out; the First Six Years of School Life.	Dunn, Arthur W. and Harris, Hannah M.	Heath.	1919
The Teaching of History and Civics in Elementary and Secondary Schools.	Bourne, Henry E.	Longmans.	1902
Special Methods in Geography.	McMurry, Charles A.	Macmillan.	1903
Content of American History: as Taught in the Seventh and Eighth Grade.	Bagley, William C. and Rugg, Harold O.	University of Illinois.	1916
Community Life and Civic Problems.	Hill, H. C.	Ginn.	1922
Social Studies in Secondary Education.	Dunn, A. W.	U. S. Bureau of Education.	1916
Courses in the Social Studies for Junior High Schools. (Extension Bulletin No. 97).	Pierce, Bessie L.	University of Iowa.	1923
The Education of the Consumer; a study in curriculum material.	Harap, Henry.	Macmillan.	1924
Teaching of Geography; emphasizing the project, or active method.	Branom, Mendel E. and Branom, Fred K.	Ginn.	1921
Lessons in Civics for the Six Elementary Grades of City Schools (Bulletin 1920, No. 18).	Harris, Hannah M.	U. S. Bureau of Education.	1920
Civic Education.	Snedden, David S.	World Book Co.	1922
New Geography, Book II.	Frye, A. E. and Atwood, W. W.	Ginn.	1920
Essentials of Geography.	Brigham, A. P. and McFarlane, C. T.	American Book Co.	1920
Commercial and Industrial Geography.	Keller, A. G. and Bishop, A. L.	Ginn.	1912
World Geographies.	Tarr, R. S. and McMurry, F. M.	Macmillan.	1918
Research in Constructing the Elementary School Curriculum Part III, Chapter VII.	Committee on Social Studies, Dept. of Superintendence.	National Education Association.	1925

Among those contributing to the above list were: Walter D. Cocking, Division of Research, St. Louis Public Schools, St. Louis, Missouri; Edgar Dawson, Secretary National Council for Social Studies, Hunter College, New York City; O. G. Frederick, Assistant Superintendent of Schools, Detroit, Michigan; Armand J. Gerson, Associate Superintendent of Schools, Philadelphia, Pennsylvania; J. F. Hosie, Teachers College, Columbia University, New York City; Ida Odelle Rudy, Primary Supervisor, Dayton Public Schools, Dayton, Ohio; Earl U. Rugg, Head, Division of Education, Colorado State Teachers College, Greeley, Colorado; Maude Rupel, Dayton Public Schools, Dayton, Ohio; F. E. Spaulding, Dean, School of Education, Yale University, New Haven, Connecticut; R. M. Tryon, University of Chicago, Chicago, Illinois; C. C. Willard, Assistant Superintendent of Schools, Chicago, Illinois; H. B. Wilson, Superintendent of Schools, Berkeley, California.

THE WHOLE problem of setting up objectives in curriculum building is exceedingly important. Until we are able to make progress in solving it, we shall continue our educational "joy ride," going nowhere, only going.—H. G. Lull. "Teacher-Training in Curriculum Building," *Educational Administration and Supervision*, October, 1925. p. 454.

SCIENCE

Title	Author	Publisher	Year of Publication
Teaching of Science.....	Woodhull, J. F.....	Macmillan.....	1918
The Reorganization of Science in Secondary Education. (1920, Bulletin No. 26).	Committee on Reor- ganization of Sec- ondary Education.	U. S. Bureau of Educa- tion.	1920
Bibliography of Science Teaching in Secondary Schools (1925, Bulletin No. 13).	Glenn, Earl R. and Walker, Josephine.	U. S. Bureau of Educa- tion.	1925
Elements of General Science.....	Caldwell, Otis W. and Eikenberry, William F.	Ginn.....	1924
Open Doors to Science.....	Caldwell, Otis W. and Meier, W. H.	Ginn.....	1925
Science Remaking the World.....	Caldwell, Otis W. and Slosson, Ed- win E.	Doubleday, Page.....	1923
Creative Youth.....	Mearns, Hughes.....	Doubleday, Page.....	1925
Then and Now in Education.....	Caldwell, Otis W. and Courtis, S. A.	World Book Co.....	1923
A Description of the Science Laboratories of the Lincoln School of Teachers College.	Glenn, Earl R., Fin- ley, Charles W. and Caldwell, Otis W.	Lincoln School of Teachers College.	1925
Some Values Derived from Extensive Reading in General Science.	Curtis, Frances Day.	Teachers College, Colum- bia University.	1924
Children's Interests as a Basis as to What to Teach in General Science	Pollock, C. A.....	Ohio State University...	1924
Textbook in the Principles of Science Teaching.....	Twiss, George Ran- som.	Macmillan.....	1917
Teaching Botanist.....	Ganong, William F...	Macmillan.....	1899
Teaching of Biology in Secondary Schools.....	Lloyd, Francis E. and Bigelow Maurice A.	Longmans.....	1914
Teaching of General Science.....	Eikenberry, William L. and Caldwell, Otis W.	University of Chicago Press.	1922
Teaching of Science in Elementary School.....	Trafton, Gilbert H...	Houghton, Mifflin.....	1918
General Science.....	Bowden, Garfield A...	Blackiston.....	1923
Civic Science in Home and Community.....	Hunter, George W. and Whitman, W. G.	American Book Co.....	1923
Study of Nature by Months.....	Patterson, Alice Jean.	Public School Publishing Co.	1923
Course of Study, Baltimore County, Maryland.....	Tall, Lida Lee; Da- vidson, Isobel, and Cook, Albert S.	Williams and Wilkins....	1919
Nature Study and Life.....	Hodge, C. F.....	Ginn.....	1912
Handbook of Nature Study.....	Comstock, Anna B...	Comstock Publishing Co..	1911

Among the contributors to the above list were: Otis W. Caldwell, Director, Lincoln School, Teachers College, Columbia University; C. O. Davis, University of Michigan; C. W. Finley, Lincoln School, Teachers College, Columbia University, New York City; Henry W. Holmes, Dean, School of Education, Harvard University; George W. Hunter, Department of Biology, Knox College, Galesburg, Illinois; Edwin E. Slosson, Director, Science Service, Washington, D. C.; O. E. Underhill, Editor and Manager, *General Science Quarterly*.

IT IS coming to be believed that health education results from 168 hours of healthful living each week, that training in practical home arts results from practicing the home arts under the conditions of home responsibilities, that the ability to read comes from doing much reading under normal conditions with normal reading motives, that training for healthful leisure occupations results from participating in normal healthful recreations wherever these may be found within the community, that civic training is the result of living the life of the good citizen wherever one may be, and, in general, that competence in the performance of activities results from the proper performance of these activities under normal conditions.—*Franklin Bobbitt, "Difficulties To Be Met In Local Curriculum-Making," The Elementary School Journal, May, 1925, p. 658.*

Bases for Evaluating Courses of Study

What Is a Course of Study and What Is It For?

What is a course of study? A course of study has been defined as a document which is intended to guide the teacher in his attempts to aid pupils in learning.¹ The curriculum, on the other hand, is defined as the body of experience to be communicated. It is what the pupil learns and experiences.

What are the essential purposes of a course of study? Among the chief purposes of a course of study are these:

1. To provide teachers with carefully thought out and far-sighted aims and objectives of education. These should show the teacher what education is for and lead him to see the relation of his many detailed tasks to the development of child life and service to society.
2. To furnish teachers with specific aims and objectives in every subject for each grade—also with expected outcomes in terms of pupil knowledge, habits, skills, attitudes, and ideals.
3. To supply teachers with a definite handbook which will be a guide to them in teaching the various subjects. For example: It will offer suggestions as to the educational resources of the local community; and approaches to subject-matter in terms of children's local interests, experiences, and environment.
4. To offer a ready guide for teachers as to content and pupil activities best fitted to realize the general aims and objectives of education—as well as the specific aims of particular subjects.
5. To coordinate all the efforts of the school, i. e., to unify the work of the various grades of the school as to aims, principles, and, to some extent, procedure.
6. To enable each teacher to see the work of his particular grade, not as a separate unit, but as growing out of the work of the preceding grade, and leading to the next higher grade.
7. To provide a basis of classification and promotion, i. e., to make assignments of work to be completed within given periods.
8. To supply a wide enough range of content for each grade, so that each teacher may select material suitable to the varying abilities of different classes and individual pupils.
9. To indicate methods and procedures, which are recommended because of their proved value, together with illustrations of classroom achievement resulting from their use. At the same time it should permit the teacher to exercise his own originality and initiative.
10. To set up definite standards of attainment that may be expected of pupils.
11. To encourage teachers to consider the development of civic and character education in every subject in every grade.
12. To encourage teachers to keep in mind as one of their chief aims, the fostering of superior abilities with which some children are endowed, so as to develop the power of leadership and to help those who possess such abilities to realize the responsibility of using them for the benefit of the social group.
13. To stimulate teachers and to give them the right attitude toward their work. To suggest sources for additional reading and study.

Keeping these thirteen purposes of a course in mind, it is possible to set up, at least tentatively, certain bases for evaluating courses of study when issued. Course of study committees may also use them as criteria as to what should be included in the courses which they are building.

¹ See statement of James F. Hosc in *The Elementary School Curriculum*, Second Yearbook of the Department of Superintendence, National Education Association, 1924. p. 127.

Criteria for Evaluating Courses of Study

Up to date no criteria for evaluating courses of study have been published. A review of several hundred recent courses of study shows the existence of wide divergence as to: (a) Recognition of objectives, (b) Selection and organization of subject-matter, (c) Adaptation to community and individual needs of pupils, (d) Helpfulness to teachers, and (e) Mechanical make-up. The question arises: How can one determine which courses are best fulfilling the thirteen purposes of a course of study listed above?

To answer this question, the following criteria are tentatively suggested because nothing better seems to be available. Some of the points raised are much more important than others. No attempt has been made to weight them, or to render them objective. There is some overlapping of the questions listed under the five main headings. It is suggested that each question raised be applied to the particular course of study at hand. Instead of answering the question, "Yes" or "No," the person reviewing the course may rate it on each point, raised by the questions, on whatever subjective scale he sees fit as: "Good, fair, and poor," or "Excellent, very good, fair, and poor."

A. Recognition of Objectives:

1. Are general aims and objectives set forth indicating the general purposes of each course?
2. Are specific outcomes in terms of knowledge, habits, skills, attitudes, and ideals set forth for each subject?
3. Have the objectives and desired outcomes, which have been set up, functioned in the selection and organization of the content. In other words, is there a gap between the objectives suggested and the activities set up? The Elementary Science and Nature Study section, which will appear in the forthcoming *Fourth Yearbook* of the Department of Superintendence, shows how intimate can be the tie-up between objectives and statement of activities.
4. The aims and objectives set up are in conformity with what particular philosophy of education?

B. Selection and Organization of Subject-Matter:

1. Is it so written and organized as to be an inspiration to teachers in their work?
2. Is the content such as will function in practical daily life?
3. Is the form and language clear and adapted to teachers' use?
4. Does it include suggestive lists of pupil experiences which will enable pupils to achieve the objectives set up?
5. Does it include suggestive lists of materials needed in providing adequate experiences?
6. Is the approach to each subject through situations and material familiar to children—Does it build on the experiences of children?
7. Is the subject-matter organized according to one or more of these bases: (a) Logical development? (b) Projects or problems, organized around children's interests? and (c) Central topics having large social values?

Whether anyone of these bases or a combination of them should be accepted is still an open question.

8. Does it indicate standards of attainment for each grade, which give a basis for classification and promotion?
9. Are the results of scientific research, whenever conclusive, used as a basis for the selection and arrangement of content and is the statement of method in agreement with scientific studies as to the learning of pupils?
10. Is the work of the several grades in each subject coordinated and unified?
11. Does it provide for correlations?
12. Does it emphasize civic and character education as an outstanding objective of instruction in every subject in every grade?

C. Adaptation to Community Demands and Individual Needs of Pupils:

1. Does the course of study make use of local material?
2. Does it aim to meet needs peculiar to the community?
3. Is it flexible with provision for adaptation? Does it supply a wide range of materials for each grade? Are the

problems under the major topics of each grade classified into such groups as: (a) prescribed, (b) alternative, and (c) optional?

4. Does it provide for individual differences among children in the same grade by: (a) Grouping material according to difficulty; and (b) Appealing to a wide variety of interests and abilities. In other words, does it help all children to work to their capacity, including those with special abilities and disabilities?¹

D. Helpfulness to Teachers:

1. In offering suggestions as to methods and materials, is some choice given the teacher as to subject-matter and method, so that she may exercise some judgment, independence and initiative of her own?
2. Are suggestions made relative to possible correlations with other subjects of the curriculum?
3. Are illustrative and type lessons included? Illustrations of good work?
4. Are suggestions as to use of standard tests and remedial treatment included?
5. Does the course of study give sufficient references and suggestions for materials i. e., bibliographies for both teacher and pupil for each grade?

6. Are directions sufficiently complete and definite to serve the inexperienced and untrained teacher?
7. Does the course of study stimulate the teacher and give the right attitude? Does it inspire her (a) by keeping before her the large ideals—the aims and principles that control education; and (b) by making her conscious of the practical help it gives her toward applying such aims and principles in class work?

E. Mechanical Make-Up of Course of Study:

1. Is the form of arrangement, clear and concise? Is the type easily read?
2. Is emphasis given to major topics, by proper indentation, use of special forms of type, etc.?
3. For the teachers' convenience, are the pages numbered? Is there a table of contents? An index? Are blank pages included for teachers' notations?
4. Is the character of the make-up in conformity with the stage of development: mimeographed or printed on cheap paper in early stages and printed in attractive form on better paper after it has been tested out? Is it printed in one document or in separate manuals, covering related units of the whole course?

¹ Course of Study Committees will want to be familiar with the following reference, as one of the best sources of information as to advanced methods developed in dealing with individual differences: *The Twenty-Fourth Yearbook of the National Society for the Study of Education, Part II Adapting the Schools to Individual Differences*. Bloomington, Ill., Public School Publishing Company, 1925.

IT IS interesting to note that the best modern school systems in America are rediscovering the child as the center of reference for the curriculum, methods of instruction and school organization.

Rather than to superimpose upon the schools a curriculum which we copy, we are to make an organic study of the needs of the individual in a modern social world. This gives us the point of view from which we want to view all the work we do in curriculum reconstruction.

The curriculum is the "blueprint" of our job. We are to draft this "blueprint," so that we can take it and go into the classroom and do our work like master builders. —Paul G. W. Keller, Superintendent of Schools, Eau Claire, Wisconsin, in a *Conference on the Curriculum*.

New Courses of Study for Old

Nation Wide Curriculum Revision Now in Progress

Eight hundred and eighty-nine city, county, and state elementary course of study bulletins, containing 52,272 pages, published since January 1, 1923, have come to the notice of the Division of Research of the National Education Association. This by no means represents all the elementary courses published during the past two years. A comprehensive survey was not attempted. The Division of Research merely listed the recent courses of study filed in the Library of the National Education Association and to this list, through the courtesy of the U. S. Bureau of Education and the Bureau of Elementary Curriculum Research of Teachers College, Columbia University, were added some courses which they had received. The 889 bulletins are listed in Table 12.

Availability of Local Courses of Study

The expense of publishing local courses of study, which usually are more or less tentative, is heavy. Frequently only a limited number of extra copies are available for distribution outside the local school system. A few of the smaller bulletins are often distributed free of charge in response to requests from superintendents of schools and students of education. Many school boards have found it necessary to charge enough for copies of course of study bulletins distributed outside their school systems, to cover the cost of printing and mailing.

In preparing the list of course of study bulletins presented in Table 12, the number of each available for distribution was not included, since this number changes from day to day, depending upon the number of orders received. One is safe in assuming that the number is sufficiently small so that requests for copies should be limited to those subjects in which one is particularly interested. Furthermore, requests for these course of study bulletins should only be made when there is a real need for them.

No Brief for Scissors and Paste-Pot

In printing the list of courses which follows no brief is held for the traditional scissors and paste-pot method of course of study compilation. The purpose of publishing the list is not to offer a ready means of furnishing raw material for attacking the problem of curriculum revision with scissors and paste-pot. The list is printed because it serves other purposes.

Legitimate Uses of List of Course of Study Bulletins

Comparison of one course of study with another has a place in a program of course of study revision. It is a minor, rather than the central method of arriving at a new course of study.

The list of 889 bulletins, as printed below, should serve a number of legitimate functions. First, it presents tangible evidence of the dissatisfaction which school people feel in regard to the traditional course of study. Many of the courses listed are the result of the burning of midnight oil by professionally minded teachers after they have finished a hard day's work. Whatever others may say about the schools and their results, no one can deny that the teaching profession is working with every resource at its command to improve the school's effectiveness. The consciousness of united effort should encourage the whole profession in the task it has undertaken.

Second, the publishing of this list of courses gives definiteness and tangibility to curriculum revision programs. The list offers a convenient and accurate means of knowing what cities are most active in this work. It makes it possible to find out more specifically what cities have recently completed and are now trying out new courses of study. Correspondence between such cities should make it possible for each city to check the results of new departures against the experiences of a number of cities. The primary purpose of the Cooperative Plan of Curriculum Revision of the National Education Association is to assist

school systems to work cooperatively in curriculum revision. It is interesting to note that Table 12 lists courses of both large and small school systems in practically every state in the Union.

Third, the list as published offers evidence of certain tendencies in revising courses of study. It shows that the course of study which brings together under one cover all subjects is giving way to the smaller and more flexible manuals dealing with single subjects. The list also shows progress in the direction of grouping certain subjects—for example the combination of certain hitherto distinct subjects

under the general heading, social science. In some communities, there is a tendency to issue separate manuals in character education.

Intangible Results of Curriculum Revision Program

The course of study bulletins listed below represent objectively some of the tangible results of curriculum revision. The more important results—new vision on the part of teachers and continued effort for still better courses of study—cannot be measured by the number of bulletins issued or by the thousands of pages which they contain.

TABLE 12.—ELEMENTARY COURSES OF STUDY PUBLISHED SINCE JANUARY 1, 1923

Year	Title	No. of Pages	Year	Title	No. of Pages
KINDERGARTEN					
1923	Cincinnati, Ohio., Course for Kindergarten..	31	1923	Bridgeton, N. J., Arith. Gr. 1-6.....	*12
1923	Columbus, Nebr., Suggested Kindergarten Course.....	7	1923	Bryan, Ohio, Arith., Gr. 4-6.....	*7
1924	Dayton, Ohio, A Summary of the Course Elementary and Kindergarten.....	71	1923	Buffalo, N. Y., Arith., Gr. 1-4.....	50
1924	Denver, Colo., Course in Kindergarten.....	106	1924	Chester, Vt., Outline of Arith.....	*5
1925	Detroit, Mich., Course for Kindergarten.....	*70	1924	Cincinnati, O., Number Work for Primary Grades.....	37
1924	Elizabeth, N. J., Courses for Kindergarten and Elementary Grades.....	228	1923	Columbus, Ohio, Arith., Gr. 1-3.....	99
1923	El Paso, Texas, Course for Kindergarten.....	3	1924	Connecticut State Dept. of Ed., Arithmetic.....	29
1925	Erie, Pa., Kindergarten Program.....	*8	1925	Connecticut State Board of Ed., Teaching of Arith.....	77
1923	Fort Worth, Texas, Course for Kindergarten and Gr. 1-3.....	135	1924	Connecticut State Normal, Course in Arith.....	*10
1923	Glendale, Calif., Course for Kindergarten and Gr. 1-6.....	39	1924	Cranston, R. I., Outline in Arithmetic.....	*22
1925	Hutchinson, Kans., Course for Kindergarten and Elementary Grades.....	508	1924	Dayton, Ohio, Social Science and Arithmetic, Gr. 1-4.....	113
1924	Ithaca, N. Y., Course for Kindergarten.....	21	1924	Denver, Colo., Arithmetic, Gr. 1-6.....	228
1924	Los Angeles, Calif., Course for Kindergarten and Gr. 1-2.....	191	1923	Detroit, Mich., Primary Arithmetic Games.....	31
1924	New York, N. Y., Course for Kindergarten and Gr. 1.....	80	1924	Detroit, Mich., Arithmetic, Gr. 2-8.....	135
1923	Pittsburgh, Pa., Kindergartens.....	18	1924	East Chicago, Ind., Elem. Arith.....	63
1923	Racine, Wis., Course for Kindergarten.....	10	1924	Elmira, N. Y., Arithmetic, Gr. 1-3.....	*30
1924	San Francisco, Calif., Course for Kindergarten and Gr. 1-3.....	121	1924	Erie Co., O., Arithmetic Exercises, Gr. 1-2.....	*69
1924	Warren, Pa., Outline of Courses—Kindergarten.....	*2	1925	Erie Co., O., Arithmetic Exercises, Gr. 5-8.....	*13
ARITHMETIC					
1924	Ann Arbor, Mich., Arith., Gr. 1-8 incl.....	52	1924	Erie, Pa., Arithmetic Outline.....	*50
1923	Attleboro, Mass., Standards in Arith.....	*20	1924	Fort Smith, Ark., Arithmetic Elem. Grades.....	44
1924	Baltimore, Md., Geog.-Hist.-Arith., Kindergarten, Gr. 1-3.....	78	1924	Fort Wayne, Ind., Math. for Graded Schools.....	*3
1924	Baltimore, Md., Arith., Gr. 4-6.....	111	1924	Fresno, Calif., Arithmetic, Gr. 1-4.....	*5
1925	Baltimore Co., Md., A Working Basis for a Revision of the Course of Study in Arith.....	*1	1923	Glendale, Calif., Arithmetic, Gr. 7-8.....	*5
1925	Baltimore Co., Md., Course in Arith.....	*55	1924	Hartford, Conn., State Board of Ed., Course in Arithmetic.....	29
1923	Beardstown, Ill., Course in Arith.....	*6	1925	Hartford, Conn., State Board of Ed., Teaching Arith.....	77
1923	Bellingham, Wash., Mental Arith.....	127	1924	Harvard, Ill., Suggestions for Arithmetic.....	*7
1923	Boston, Mass., Mathematics.....	25	1924	Hawaii, Dept. of Public Inst., Arithmetic, Gr. 4-8.....	16
1924	Boylston-Shrewsbury-West Boylston, Mass., Arithmetic.....	*8	1924	Hinsdale, Ill., Course in Arithmetic.....	*8
			1924	Indiana, Arithmetic for the Elem. Schools.....	80
			1923	Indianapolis, Ind., Arithmetic Games, Gr. 1-3.....	55
			1924	Iron Mt., Mich., Arithmetic Outline.....	*8
			1925	Lakewood, Ohio, Commerce, General Science and Mathematics.....	44
			1923	Lawrence, Kans., Elem. Arithmetic.....	25
			1924	Litchfield, Conn., Math., Gr. 2-9.....	25
			1924	Long Beach, Calif., First Grade Arith. and Projects.....	28
			1923	Long Beach, Calif., Second Gr. Arith. and Projects.....	40

* Mimeographed sheets.

† Chart.

TABLE 12.—ELEMENTARY COURSES OF STUDY PUBLISHED SINCE JANUARY 1,
1923 (Continued)

Year	Title	No. of Pages	Year	Title	No. of pages
ARITHMETIC—Contd.			ART—Contd.		
1924	Long Beach, Calif., Third Grade Arithmetic.....	37	1923	Tulare Co., Calif., Drawing Outline for Rural Schools.....	34
1923	Long Beach, Calif., Third Gr. Arithmetic.....	35	1924	Virginia, Minn., Art, Kindergarten thru Gr. 6.....	58
1924	Long Beach, Calif., Fourth Gr. Arithmetic.....	19	1923	Washington, D. C., Drawing, J. H. S.....	*8
1924	Long Beach, Calif., Arith., Gr. 5-6 and Projects.....	39	CHARACTER AND MORAL EDUCATION		
1925	Lynn, Mass., Arithmetic, Gr. 1-4.....	*12	1924	Berlin, N. H., Character Development.....	*4
1925	Lynn, Mass., Arithmetic, Gr. 5-6.....	*10	1925	Berlin, N. H., Fortieth Annual Report of the Board of Education, Character Development p. 5-17.....	13
1925	Lynn, Mass., Arithmetic, J. H. S.....	*6	1924	Boston, Mass., Course in Citizenship Through Character Development, Gr. I-VIII.....	96
1925	Maryland State Dept. of Education, Arithmetic Goals, Suggestions for Testing and Corrective Work.....	67	1925	Boston, Mass., Citizenship through Character Development.....	40
1923	Methuen, Mass., Arithmetic.....	*10	1925	Detroit, Mich., Gems of Thought from our Juniors in the 7th Gr.....	*3
1923	Middletown, Conn., Course in Arithmetic.....	15	1925	Elgin, Ill., Annual Report of the Public Schools, Part III. A Course in Character Education.....	26
1923	Middletown, N. Y., Syllabus in Arithmetic.....	*7	1923	La Crosse, Wis., Safety—Fire Prevention, Health, Manners and Conduct, Bird-Study.....	37
1925	Millville, N. J., Course in Arithmetic.....	*21	1925	La Crosse, Wis., Educational and Social Guidance.....	8
1925	Milwaukee, Wis., Course in Arithmetic, Elem. Minneapolis, Minn., Arithmetic.....	21	1923	Los Angeles, Calif., Character and Conduct.....	103
1924	Minneapolis, Minn., Arithmetic.....	51	1925	Newark, N. J., Character Training, Gr. 1-9.....	*
1924	Minneapolis, Minn., Arithmetic, Primary and Intermediate Grades.....	44	1925	New York City, N. Y., Syllabus on Manners and Conduct of Life.....	
1924	Montrose, Colo., Arithmetic.....	35	1925	Oakland, Calif., Progress in Character Education, Covering School Years 1923-1924 and 1924-1925, Series of School and Classroom Activities Conducted by the Oakland Teachers.....	*9
1923	Morris, Ill., Course in Arithmetic.....	*12	1925	Oakland, Calif., Bibliographies on Character Education Reported by Schools.....	*52
1923	New Bedford, Mass., Arithmetic, Gr. 7-8.....	6	1923	Oregon State Dept. of Ed., Moral Instruction through the Story.....	15
1923	Newburgh, N. Y., Course in Arithmetic.....	10	1923	Salt Lake City, Morals and Manners, History and Civics.....	
1925	New Jersey, State Dept. Ed. Bul. No. 5.....	192	1925	Utah State Dept. of Education, Character Education, Supplement to the Utah State Course of Study for Elementary and High Schools.....	60
1925	New Orleans, La., Arithmetic, Gr. 1-8.....	*43	1924	Virginia, Minn., Patriotism and Loyalty, Morals and Manners, Safety Ed., Physiology and Hygiene.....	48
1923	Oakland, Calif., Arithmetic for Special Limited Classes, Gr. 1-6.....	*27	HEALTH AND PHYSICAL EDUCATION		
1924	Olympia, Wash., Arithmetic.....		1923	Berkeley, Calif., Phy. Ed. incl., Hygiene, Elem. and J. H. S.....	63
1923	Pennsylvania State Dept. of Ed., Math., Gr. 7-12.....	40	1923	Boylston-Shrewsbury-West Boylston, Mass., Course in Physiology.....	*3
1924	Piedmont, Calif., Math., Gr. 1-6 incl.....	8	1924	Columbus, O., Physical Ed. Program.....	29
1923	Portland, Me., Arithmetic, Elem. Gr.....	24	1924	Connecticut State Board of Ed., School Health Program.....	104
1923	Providence, R. I., Course in Arith.....	16	1924	Connecticut State Bd. of Ed., Normal Course in Health and Phy. Ed.....	*18
1924	Pueblo, Colo., Arithmetic Elem.....	22	1924	Danville, Ill., Physiology and Hygiene, Gr. 1-8.....	17
1923	Raleigh, N. C., Elem. Arith.....	63	1924	Detroit, Mich., Gymnasium and Playground Activities.....	200
1923	Roanoke, Va., Arithmetic Elem. Gr.....	*4	1924	Detroit, Mich., Folk Dancing.....	13
1923	Rochester, N. Y., Arith. Gr. 2-6.....	126	1923	El Paso, Texas, Physical Education.....	3
1923	Rockford, Ill., Arithmetic, Gr. 1-8.....	*13	1924	Ferndale, Mich., Health Education 1-6.....	*22
1924	Rock Island, Ill., Science and Math., Gr. 1-6.....	*4	1924	Fort Smith, Ark., Course in Hygiene.....	*13
1924	Spokane, Wash., Arithmetic.....		1923	Fort Wayne, Ind., Phy. Ed., Graded Schools.....	7
1924	Stanton, Ill., Arith., 3rd, 5th, 6th Gr.....	*3	1924	Fresno, Calif., Physical Education.....	
1923	Superior, Nebr., Arithmetic.....		1924	Hawaii, Course in Hygiene-Civics, Gr. 4-8.....	72
1925	Toledo, Ohio, Arithmetic.....	*31	1923	Huron, S. D., Physical Education, Gr. 1-7.....	*10
1923	Trenton, N. J., Elem. Arithmetic.....	96	1924	Iowa State Dept. of Ed., Physical Ed. Bulletin.....	59
1923	Trenton, N. J., Math., Gr. 7-9.....	118	1924	Ithaca, N. Y., Health Education.....	4
1924	Trenton, N. J., Elem. Arith.....	8	1924	Kalamazoo, Mich., Course of Study, Book VI, Part 1, Physical Education.....	32
1923	Washington, D. C., Arith. Elem. Schools, Gr. 1-6.....	29	1923	La Crosse, Wis., Safety-Fire Prevention, Health, Manners and Conduct, Bird-Study.....	37
1923	Washington, D. C., Math., J. H. S.....	*9			
1925	Wicomico Co., Md., Arithmetic, Gr. 1-7.....	69			
1924	Winona, Minn., Course in Arith.....	*22			
ART					
1924	Birmingham, Ala., Elementary Art.....	*4			
1924	Broome Co., N. J., Drawing, Gr. 1-4.....	*1			
1923	Cicero, Ill., Art, Gr. 1-3.....	*5			
1923	Cumberland Co., N. J., Drawing Outline.....	14			
1924	Detroit, Mich., Art, Elementary.....	50			
1925	East Chicago, Ind., Course in Art.....	*28			
1923	El Paso, Texas, Course in Art.....	3			
1924	Ferndale, Mich., Art, Gr. 1-6 incl.....	*19			
1924	Joliet, Ill., Tentative Art Program.....	*1			
1925	Lakewood, Ohio, Art, Music and Physical Education.....	21			
1924	Litchfield, Mass., National Science, Fine and Practical Arts, Gr. 2-8.....				
1925	Long Beach, Calif., Course in Art.....	40			
1923	Long Beach, Calif., Course in Art.....	18			
1923	Mason City, Iowa, Art Studies.....	*1			
1924	Oakland, Calif., Sup. Drawing, Gr. 1-3.....	*18			
1924	Olympia, Wash., Course in Art.....				
1925	Pennsylvania State Dept. of Ed., Art Ed.....	44			
1924	St. Cloud, Minn., Fine and Ind. Arts, Gr. 1-6.....	288			
1923	South Bend, Ind., Art and Music Depts.....	52			
1923	Spokane, Wash., Course in Art.....	72			
1924	Trenton, N. J., Course in Fine and Ind. Arts.....	18			

* Mimeographed Sheets.

† Charts.

TABLE 12.—ELEMENTARY COURSES OF STUDY PUBLISHED SINCE JANUARY 1, 1923 (Continued)

Year	Title	No. of pages	Year	Title	No. of Pages
HEALTH AND PHYSICAL EDUCATION—contd.			INDUSTRIAL ARTS—contd.		
1925	Lakewood, Ohio, Art, Music and Physical Education	21	1923	Detroit, Mich., Mech. Draw. Lesson Sheets	24
1923	Los Angeles, Calif., Corrective Phy. Ed.	16	1924	Detroit, Mich., Auto Mechanics	69
1925	Lynn, Mass., Hygiene, Gr. 5-6	*8	1923	El Paso, Texas, Manual Arts	3
1924	Massachusetts State Dept. of Ed., Minimum Essentials for Phy. Ed. in Normal School	19	1925	Ithaca, N. Y., J. H. S. Manual Arts	27
1923	Michigan State Dept. of Ed., Phy. Ed. Ungraded Material for Elem. Schools	109	1925	Lakewood, Ohio, Home Economics and Manual Arts	37
1923	Michigan State Dept. of Ed., Physical Training, Graded Schools	312	1924	Litchfield, Mass., Natl. Science, Fine and Prac. Arts, Gr. 2-8	
1925	Millville, N. J., Health, Gr. 1-8	*20	1923	Los Angeles, Calif., Industrial Arts	69
1925	Milwaukee, Wis., Health Habits, Gr. 1-3	*10	1923	Newburgh, N. Y., Manual Training	7
1923	Newburgh, N. Y., Course in Physiology	14	1923	Newburgh, N. Y., Industrial Arts	12
1923	Newburgh, N. Y., Course in Phy. Training	68	1924	Oakland, Calif., Industrial Arts, Gr. 1-5	35
1925	New Orleans, La., Hygiene	*35	1924	Passaic, N. J., Industrial Arts, Gr. 1-4	
	Norfolk, Va., Phy. Ed. and Recreation	123	1924	Trenton, N. J., Industrial and Fine Arts	18
	North Carolina State Dept. of Ed., Lessons in Phy. Ed., Elem. Gr.	120	LANGUAGE, GRAMMAR, COMPOSITION, and ENGLISH		
1923	Oakland, Calif., Rules for Athletic Games, Grs. 3-9	34	1924	Baltimore, Md., Reading—Composition—Literature—Spelling—Handwriting, Kindergarten and Gr. 1-3	72
1923	Oakland, Calif., Physical Ed. for J. H. S.	72	1924	Baltimore, Md., English, Gr. 4-6	118
1924	Oregon State Dept. of Ed., A Course in Physical Education	118	1923	Bellingham, Wash., Course in English	21
1925	Oshkosh, Wis., Syllabus of Games, Gr. 7-8	*22	1924	Bridgeton, N. J., English, Gr. 1-6	*10
1925	Oshkosh, Wis., Syllabus of Games, Gr. 1-3	*28	1924	Bridgeton, N. J., English, Gr. 7-12	
1925	Oshkosh, Wis., Syllabus of Games, Gr. 4-6	*24	1923	Cheney, Wash., Tr. School, Language, Gr. 1-5	*40
1924	Passaic, N. J., Health and Hygiene	*33	1924	Buffalo, N. Y., English, 5-8	
1923	Pennsylvania State Dept. of Ed., Health, Phy. Ed., Gr. 1-8	292	1923	Chicago, Ill., English Elem.	147
1923	Pennsylvania State Dept. of Ed., Hygiene and Physiology, Gr. 1-8	163	1923	Chicago Hgts., Ill., English, Elem. Schools	20
1923	Philadelphia, Pa., Health Ed., Gr. 1-6	130	1923	Cicero, Ill., English, Gr. 1-8	*22
1923	Philadelphia, Pa., Health Ed., Helps for Teachers	*12	1923	Columbus, Nebr., English Course	*15
1924	Pueblo, Colo., Hygiene and Phy. Ed.	24	1923	Columbus, Nebr., Picture Study	*8
1923	Roanoke, Va., Hygiene and Phy. Ed.	*2	1924	Conn. State Bd. of Ed. Oral and Written Eng.	31
1923	Richmond, Va., Course in Hygiene	*27	1924	Conn. State Normal School, Read., and Lit., Oral and Written Eng., Library Course	*27
1923	Spokane, Wash., Health Education	57	1923	Cumberland Co., N. J., Suggestive English Lessons	19
1923	Trenton, N. J., Elementary Hygiene	18	1925	Dayton, Ohio, Course in Expression, Gr. 1-8	51
1924	Virginia, Minnesota, Patriotism and Loyalty, Morals and Manners, Safety Ed., Physiology and Hygiene	48	1924	Dayton, Ohio, Reading, English, Gr. 1-4	79
1923	Washington, D. C., Phy. Training, J. H. S.	*11	1923	Detroit, Mich., Pupil's Guide for Speech Correction	40
1924	West Virginia State Dept. of Ed., Manual of Physical Education	195	1924	Detroit, Mich., Drill for Foreign Children in Word Recognition	*19
1923	Wheeling, W. Va., Physical Education		1925	Detroit, Mich., Course in English	426
HOME ECONOMICS			1925	Detroit, Mich., Self-Help Remedial Lessons in Grammatical Forms	36
1925	Lakewood, Ohio, Home Economics and Manual Arts	37	1925	Detroit, Mich., Self-Help Remedial Lessons in Capitalization and Punctuation	40
1923	Los Angeles, Calif., Home Economics, Gr. 1A-8B	38	1924	Detroit, Mich., Studies with Foreign Born	*66
1924	Louisiana State Dept. of Ed., Home Economics Elem. and H. S.	71	1923	East Chicago, Ind., English—Language	26
1925	Lynn, Mass., Home Economics, Gr. 7-9	*17	1923	East Longmeadow, Mass., English Expression	*2
1924	New York State Dept. of Ed., Syllabus for Home making and Home Economics	77	1925	Erie, Pa., Language Outline	*7
1924	Oklahoma State Dept. of Vocational Education, Elem. Home Economics	64	1924	Erie Co., Ohio, English Ex., Gr. 3-8	41
1925	Tallahassee, Fla., Home Economics	*13	1924	Escanaba, Mich., Course in Language	*53
1923	Trenton, N. J., Elem. Home Economics	11	1923	Essex Co., N. J., English, Gr. 3-5	*19
1924	Trenton, N. J., Elem. Home Economics	8	1923	Evansville, Ind., Language Courses	*21
1923	Washington, D. C., Domestic Art, J. H. S.	*2	1924	Ferndale, Mich., English, Gr. 1-6	*32
INDUSTRIAL ARTS			1924	Fort Smith, Ark., Language, Elem. Gr.	*68
1923	Berkeley, Cal., Industrial Ed., Gr. 4-6, the J. H. S. and Senior, Part-time and Evening High School	143	1924	Fort Smith, Ark., Story Telling, Elem. Gr.	17
1923	Cincinnati, Ohio, Industrial Arts, Gr. 5-8	42	1923	Fort Wayne, Ind., English, Gr. Schools	8
1924	Denton, Tex., College of Industrial Arts	238	1923	Fresno, Calif., English	
1923	Detroit, Mich., Students' Manual in Boys' Construction Work	64	1923	Glendale, Calif., Grammar and Comp., 7-8 Gr.	*11
1923	Detroit, Mich., Opportunities and Requirements, Part II	101	1924	Hawaii, Language, Gr. IV-VIII	64
1923	Detroit, Mich., Opportunities and Requirements, Part III	99	1923	Highland Park, Mich., Language Outlines	*225
1923	Detroit, Mich., Mech. Draw. Standards and Conventions	44	1924	Howell, Mich., English, Gr. 7-12	29
			1923	Indianapolis, Ind., Course in English	158
			1923	Indianapolis, Ind., Elem. English Comp.	18
			1923	Jackson, Mich., English, Elem. Gr.	144
			1923	Kansas City, Mo., English for Elem. Schools	337
			1923	La Crosse, Wis., English for Lower Grades	44
			1925	Lakewood, Ohio, English, French, Latin	42
			1923	Lawrence, Kans., Elem. Eng.	
			1923	Lima, Ohio, English Art	47
			1923	Lincoln, Nebr., Outline in Eng., 7-8 Gr.	47
			1924	Litchfield, Conn., Eng. and Handwriting, Gr. 2-8	60
			1924	Long Beach, Calif., First Gr. Language	51

* Mimeographed Sheets.

† Charts.

TABLE 12.—ELEMENTARY COURSES OF STUDY PUBLISHED SINCE JANUARY 1,
1923 (Continued)

Year	Title	No. of Pages	Year	Title	No. of Pages
LANGUAGE, GRAMMAR, COMPOSITION, AND ENGLISH—contd.			MUSIC—contd.		
1924	Long Beach, Calif., Lang. and Spell, Gr. 2....	49	1923	Los Angeles, Calif., Music.....	17
1924	Long Beach, Calif., Lang. and Spell., Gr. 3....	53	1924	Michigan State Dept. of Ed., Music Memory Test. Suggested Outline for Elem., Jr. H., Sr. H., and Adult Contests.....	15
1925	Long Beach, Calif., Lang. and Spell., Gr. 4....	82	1924	Modesto, Calif., Elem. School Music.....	14
1923	Los Angeles, Calif., English, 7B-11B.....	202	1923	Newburgh, N. Y., Course of Study, Music.....	14
1923	Los Angeles, Calif., Speech Correction.....	7	1923	Oakland, Calif., Music, Gr. 3-4.....	12
1925	Lynn, Mass., Outline for Lang., Gr. 1-4.....	*9	1923	Oakland, Calif., Music, Gr. 3-4.....	11
1924	Manchester, N. H., Course in English.....	244	1924	Oakland, Calif., Music Appreciation for Gr. 1-2.....	11
1923	Mason City, Iowa, Language Report.....	*1	1925	Oakland, Calif., Music for J. H. S.....	34
1923	Michigan State Dept. of Ed., Lang. Lessons.....	158	1924	Olympia, Wash., Music.....	34
1925	Millville, N. J., Composition, Gr. 1-8.....	20	1923	Pennsylvania State Dept. of Ed. Course in Music.....	40
1925	Minneapolis, Minn., Eng., Ed. Bul. No. 6.....	52	1923	South Bend, Ind., Art and Music Depts.....	52
1925	Montrose, Col., Language.....	*60	1923	Spokane, Wash., Music.....	10
1923	New Bedford, Mass., Lang. in Elem. Grades.....	22	1923	Trenton, N. J., Elem. Music.....	11
1923	New Bedford, Mass., English, Gr. 7-8.....	28	1924	Trenton, N. J., Elem. Music.....	78
1923	Newburgh, N. Y., Course in English.....	13	1924	Virginia, Minn., Course in Music.....	78
1925	New Orleans, La., English, Gr. 1-8.....	*39			
1924	New York City, N. Y., Course in Eng. for 2 years.....	111	NATURE STUDY AND ELEMENTARY SCIENCE		
1923	New York State Dept. of Ed. Elem. in Eng. and Lit.....	121	1923	Bryan, Ohio, To the Teachers of Agriculture. California State University, College of Agr. Agricultural Nature Study for Rural Sch. Connecticut State Board of Ed., Elem. Agr. Poultry.....	*2
1923	Oakland, Calif., Lang. and Gram. for Special Limited Classes, Gr. 2-6.....	30	1923	Denver, Colo., General Science and Biology.....	106
1924	Olympia, Wash., Lang. and Gram.....	58	1924	Ferndale, Mich., Nature Study and Geog.....	102
1923	Oshkosh, Wis., Primary English.....	*58	1924	Ft. Smith, Ark., Science, Elem. Grades.....	77
1923	Oshkosh, Wis., English, 4-6.....	*22	1924	Fort Wayne, Ind., Geog. and Gen. Science.....	*21
1923	Oshkosh, Wis., English, Gr. 7 and 8.....	*24	1923	La Crosse, Wis., Safety-Fire Prevention, Health, Manners and Conduct, Bird-Study.....	*10
1924	Oshkosh, Wis., Prim. English.....	*41	1923	Lakewood, Ohio, Commercial, General Science and Mathematics.....	26
1923	Pasasic, N. J., English, Gr. 1-4.....	60	1925	Long Beach, Calif., Course in Nature Study.....	37
1923	Pennsylvania State Dept. of Ed., Eng. Gr. 7-12.....	60	1923	Los Angeles, Calif., General Science.....	44
1924	Quannah, Tex., English, Gr. 3.....	*6	1925	Lynn, Mass., General Science.....	89
1925	Raleigh, N. C., English, Gr. 1-6.....	*6	1923	New Bedford, Mass., Nature for the Elem. Grades.....	62
1925	Roanoke, Va., Eng., Elementary Gr. 1-6.....	*9	1923	North Dakota State Dept. of Ed., Elem. Nature Study and Agr.....	*10
1924	Rock Island, Ill., Language Arts, Gr. 1-6.....	*4	1923	Oakland, Calif., Science, Gr. 7-9.....	7
1923	Salt Lake City, Utah, Eng., Gr. 1-12.....	102	1923	Oakland, Calif., Agriculture for J. H. S.....	32
1923	San Diego State Teachers College, Calif., Plan of Procedure in the Teaching of Functional Eng. in the Elem. School.....	11	1923	Oregon State Dept. of Ed., Outline Teaching of Elem. Agr.....	93
1925	Schenectady, N. Y., English, Elem. Gr.....	249	1923	Pennsylvania State Dept. of Ed., Course in Agriculture.....	31
1923	Sioux City, Iowa—Applied Eng., Gr. 7.....	203	1923	Philadelphia, Pa., Nature Study and Introductory Science.....	2
1923	Springfield, Mass., Elem. English.....	27	1923	Philadelphia, Pa., Nature Study and Introductory Science.....	137
1923	South Bend, Ind., Eng., Kdgn. and Gr. 1-6.....	32	1923	Roanoke, Va., Nature Study and Home Geography in Prim. Gr.....	*23
1923	Superior, Nebr., English.....	16	1924	Rock Island, Ill., Science and Mathematics, Gr. 1-6.....	85
1923	Trenton, N. J., Elem. Eng. Lit. and Spell.....	124	1924	Rock Island, Ill., Science and Mathematics, Gr. 1-6.....	*4
1923	Trenton, N. J., Elem. Course in Reading.....	16	1924	Toledo, Ohio, Nature Study (incl. Gardening).....	75
1924	Trenton, N. J., Elem. Course in Eng. and Spelling.....	8	1923	Trenton, N. J., Elementary Nature Study.....	8
1924	Trenton, N. J., English, Gr. 7-9.....	72	1924	Trenton, N. J., Elementary Nature Study.....	7
1924	Virginia, Minn., Lang. and Gram. Gr. 1-8.....	28	1924	Walden School, N. Y. C., Creative Science Teaching.....	8
1924	Virginia, Minn., Public Speaking, Gr. 7-12.....	7	1923	Washington, D. C., Nature Study, Elem. Gr. 1-4.....	28
1923	Washington, D. C., Eng. Elem.....	65	1923	Washington, D. C., General Science for J. H. S.....	*12
1923	Waukesha, Wis., Course in English.....	48	PENMANSHIP		
1925	Waukesha, Wis., Language Games.....	*13	1924	Baltimore, Md., Reading—Composition—Literature—Spelling—Handwriting, Kindergarten and Gr. 1-3.....	72
1925	Waukesha, Wis., Good English Drive.....	*13	1924	Connecticut State Board of Ed., Handwriting Courtland, N. Y., High School Course in Pen. Detroit, Mich., Handwriting A. I. Grade.....	16
1925	Waukesha, Wis., English Suggestions, Gr. 4-6.....	*3	1923	Detroit, Mich., Handwriting B. 2. Grade.....	32
1924	West Hoboken, N. J., Correct Speech Habits, Gr. 1A to 8B.....	*15	1923	Detroit, Mich., Practice Tests in Handwriting Gr. 3B-5A.....	16
1924	Wyoming State Dept. of Ed., Course for Rural Schools.....	53	1923	Detroit, Mich., Practice Tests in Handwriting Gr. 6B-8A.....	20
MUSIC			1923	East Longmeadow, Mass., Course in Penmanship.....	19
1924	Columbus, Ohio, Music for Elem., Jr. and Sr. High.....	23			23
1924	Connecticut State Normal School—1. Music, 2. Art.....	*12			*1
1924	Detroit, Mich., Elem. Music.....	60			
1924	El Paso, Tex., Music.....	8			
1924	Englewood, Colo., Course of Study, Music.....	*5			
1924	Ferndale, Mich., Music for the Grades.....	24			
1923	Ft. Wayne, Ind., Course of Study, Music.....	10			
1924	Hawaii, Course in Music, Gr. 4-8.....	35			
1924	Iowa State University, College of Ed. Series No. 2. Music for Elem. Schools.....	46			
1924	Jefferson Co., Iowa, Songs for Community Singing.....	21			
1925	Lakewood, Ohio, Art, Music and Physical Education.....				

* Mimeographed sheets.

† Charts.

TABLE 12.—ELEMENTARY COURSES OF STUDY PUBLISHED SINCE JANUARY 1, 1923 (Continued)

No. of Pages	Year	Title	No. of Pages	Year	Title	No. of Pages
		PENMANSHIP—Contd.			READING AND LITERATURE—contd.	
17	1923	Evansville, Ind., Course in Handwriting.....	*2	1925	New Orleans, La., Elem. Read. and Lit.....	*50
14	1924	Fort Smith, Ark., Penmanship, Elem. Gr.....	*9	1924	Niobrara Co., Wyo., Course in Reading.....	*4
15	1923	Fort Wayne, Ind., Penmanship, Graded Schools.....	14	1923	Ohio State Dept. of Ed., Read. Manual, Elem. Olympia, Wash., Reading.....	62
14	1924	Hawaii, Course in Handwriting.....	8	1924	Pueblo, Colo., Reading, Elem. and Gram. Gr.....	28
12	1923	Highland Park, Mich., Elem. Penmanship.....	24	1923	Riverside, Ill., Primary Reading.....	*6
11	1924	Litchfield, Conn., Eng. and Handwriting, Gr. 2-8.....	60	1923	Riverside, Ill., Reading.....	*10
11	1923	Long Beach, Calif., Penmanship, Gr. 1-8 incl.....	46	1923	Roanoke, Va., Course in Reading.....	*16
34	1924	Lynn, Mass., Writing, Gr. 1-4.....	11	1924	Rochester, N. Y., Lit., Kgn. and Gr. 1-6.....	*97
40	1923	Newburgh, N. Y., Course in Writing.....	15	1925	Rochester, N. Y., Attainments in Reading.....	*1
52	1924	Philadelphia, Pa., Handwriting, Teachers' Manual.....	26	1923	Saginaw, East Side, Mich., Read. Gr. 1-5.....	65
10	1923	Portland, Maine, Penmanship, Elementary.....	90	1923	Sand Springs, Okla., Reading, Gr. 1-8.....	*23
11	1923	Spokane, Wash., Course in Penmanship.....	7	1923	Sioux City, Iowa, Reading, Prim. Grades.....	*3
78	1923	Trenton, N. J., Elementary Handwriting.....	99	1923	South St. Paul, Minn., Reading, Types of Lessons.....	*2
	1924	Trenton, N. J., Elementary Handwriting.....	13	1923	Spearfish, S. Dak., Tr. Dept. State Normal School, Course in Read.-Lit.....	40
	1924	Virginia, Minn., Course in Penmanship.....	11	1924	St. Cloud, Minn., Reading, Gr. 1-6.....	115
	1923	Washington, D. C., Penmanship, J. H. S.....	43	1923	Superior, Nebr., Reading.....	
		READING AND LITERATURE	*6	1923	Trenton, N. J., Elem. Eng. Lit. and Spelling.....	124
106	1924	Baltimore, Md., Reading-Composition-Literature—Spelling—Handwriting, Kindergarten and Gr. 1-3.....	72	1923	Trenton, N. J., Elem. Reading.....	16
102	1925	Baltimore Co., Md., A Working Basis for the Revision of the Course of Study in Reading.....	13	1924	Trenton, N. J., Elem. Reading and Literature.....	169
77	1924	Battle Creek, Mich., Literature for Gr. 1-6 incl.....	*27	1924	Trenton, N. J., English, Gr. 7-9.....	72
*21	1924	Berkeley, Calif., Reading and Phonics.....	104		SPELLING	
*10	1924	Berlin, Wis., Library Reading.....		1924	Baltimore, Md., Reading—Composition—Literature—Spelling—Handwriting, Kindergarten and Gr. 1-3.....	72
26	1924	Boylston-West Boylston-Shrewsbury, Mass., Course in Reading.....	*14	1924	Boylston-Shrewsbury-West Boylston, Mass., Spelling.....	*4
37	1924	Bridgeton, N. J., Reading, Gr. 1-6.....	*36	1923	Chicago, Ill., Spelling Survey.....	10
44	1925	Cherryvale, Kans., Reading, Gr. 1-6.....	*26	1924	Cicero, Ill., Basic First Gr. Reading Words.....	*2
89	1923	Cicero, Ill., Reading.....	*118	1924	Danville, Ill., Spelling Survey.....	*10
62	1923	Cleveland Hgts., Ohio, Literature.....	27	1923	Detroit, Mich., Progressive Lessons in Spelling—Handwriting Series 1-7.....	253
*10	1924	Connecticut State Bd. of Ed., Reading and Literature.....	28	1924	Detroit, Mich., Spelling 2B-2A.....	*8
7	1924	Danville, Ill., Reading, Gr. 1-8.....	*6	1924	Detroit, Mich., Spelling Sup., Gr. 2B-8A.....	*16
32	1925	Danville, Ill., Reading Survey.....	79	1924	East Chicago, Ind., Spelling 1-9.....	5
93	1924	Dayton, Ohio, Reading, English, Gr. 1-4.....		1923	East Longmeadow, Mass., Spelling.....	*2
31	1924	Des Moines, Iowa, Reading and Literature, Kindergarten to Gr. 6.....	*210	1923	Essex Co., N. Y., Spelling by Grades.....	*10
2	1923	Detroit, Mich., Picture Story Reading Lessons for Beginners.....	228	1924	Ferndale, Mich., Spelling Outline.....	*29
137	1923	Detroit, Mich., Phonic Games and Exercises.....	168	1923	Fort Smith, Ark., Spelling Elem. Grades.....	*8
*23	1923	Detroit, Mich., Exercises in Silent Reading.....	60	1923	Glendale, Calif., Spelling, Gr. 7-8.....	*2
85	1923	Detroit, Mich., Plan for Teaching Phonics.....	24	1923	Iron Mountain, Mich., Spelling.....	*8
75	1925	Detroit, Mich., Course in English.....	426	1923	Irrington, N. J., Spelling.....	
8	1924	East Chicago, Ind., Reading, Gr. 1-6.....	24	1924	Jersey City, N. J., Spelling List for Gr. 1A-4B.....	13
7	1924	Erie Co., Ohio, Poems for Grades 1-4.....	*21	1924	Long Beach, Calif., Lang. and Spell., Gr. 2.....	49
8	1924	Ferndale, Mich., Reading.....	*12	1924	Long Beach, Calif., Lang. and Spell., Gr. 3.....	53
28	1924	Fort Smith, Ark., Reading, Elem. Grades.....	*33	1924	Long Beach, Calif., Lang. and Spell., Gr. 4.....	82
*12	1923	Fort Wayne, Ind., Reading, Primary.....	47	1925	Long Beach, Calif., Lang. and Spell., Gr. 5-6.....	*4
	1924	Glendale, Calif., Reading, Gr. 7-8.....	*11	1923	Lynn, Mass., Spelling, Gr. 5-6.....	*2
	1924	Indiana State Dept. of Ed., Reading, Elem.....	120	1923	Middletown, N. Y., Syllabus in Spelling.....	*5
	1923	Ithaca, N. Y., Outline of Phonetics.....	21	1925	Millville, N. J., Spelling, Gr. 2-8.....	*2
	1923	Joliet, Ill., Reading Program.....	11	1923	Newburgh, N. Y., Course in Spelling.....	*5
	1924	Kalamazoo, Mich., Reading and Literature, Western State Normal Training Schools.....	199	1925	New Orleans, La., Spelling.....	*9
	1924	Lawrence, Kans., Elementary Reading.....		1925	Raleigh, N. C., Spelling, Gr. 1-6B.....	*9
	1924	Long Beach, Calif., First Grade Reading and Phonics.....	46	1923	Roanoke, Va., Spelling.....	124
	1924	Long Beach, Calif., Reading and Phonics, Gr. 2.....	27	1923	Trenton, N. J., Elem. Eng. Lit. and Spell.....	8
	1924	Long Beach, Calif., Reading and Phonics, Gr. 3.....	24	1923	Trenton, N. J., English and Spelling.....	24
	1925	Long Beach, Calif., Reading, Gr. 4.....	51		SOCIAL STUDIES	
	1923	Long Beach, Calif., Reading, Gr. 5.....	202	1924	Berlin, Wis., Civics.....	
	1925	Los Angeles, Calif., English 7 B-11 B.....	*12	1924	Crook Co., Oregon, Civics, Gr. 1-4.....	*12
	1925	Lynn, Mass., Read. and Lit., Gr. 5-6.....	*25	1923	Glendale, Calif., Civics Course of Study.....	8
	1924	Maryland State Dept. of Ed., Silent Read.....	88	1924	Hawaii, Course in Hygiene, Civics, Gr. 4-8.....	*11
	1923	Mason City, Iowa, Primary Reading.....	*32	1923	Milwaukee, Wis., Outline in Civics.....	*25
	1923	Middletown, N. Y., Syllabus in Read., Gr. 1-3.....	*2	1925	Milwaukee, Wis., Study of Citizenship.....	
	1925	Millville, N. J., Reading, Gr. 1-8.....	*11	1925	Newburgh, N. Y., Civics and Patriotism.....	
	1923	Newark, N. J., Reading Survey.....	56	1925	New Orleans, La., Civics Plan Showing Aim of Each Grade.....	*35
	1923	Newburgh, N. Y., Reading.....	8	1923	New York City, N. Y., Course in Civics with Syllabus.....	16
	1924	New Castle, Pa., Silent Reading Exercises.....	55	1924	Oakland, Calif., Ninth Yr. Economics and Vocational Civics.....	11
				1924	Oakland, Calif., Civics for Kindergarten.....	58

* Mimeographed Sheets.

† Charts.

TABLE 12.—ELEMENTARY COURSES OF STUDY PUBLISHED SINCE JANUARY 1, 1923 (Continued)

Year	Title	No. of pages	Year	Title	No. of Pages
SOCIAL STUDIES—contd.			SOCIAL STUDIES—contd.		
Civics—contd.			History		
1923	Revere, Mass., Syllabus in Civics.....	39	1924	Baltimore, Md., History, Gr. 4-6.....	103
1925	Somerset Co., Md., Civics for Public Elem. Schools.....	38	1923	Bayonne, N. J., Course in History.....	13
1923	Stamford, Conn., Civics.....		1924	Berlin, Wis., U. S. History.....	
1924	Superior, Nebr., Americanization.....		1923	Boston, Mass., History, Gr. 7-8.....	30
1923	Trenton, N. J., Course in Civics.....	11	1923	Chicago, Ill., Elem. Social Studies, History.....	64
1924	Trenton, N. J., Course in Civics.....	22	1923	Chicago, Ill., Francis W. Parker School, Course in History.....	196
Geography			1923	Cleveland Hgts., Ohio, History, Gr. 4-6.....	56
1924	Baltimore, Md., Geog., Gr. 4-6.....	74	1924	Columbus, Ohio, History, Gr. 1-6.....	26
1923	Baton Rouge, La., State Dept. of Ed., Supervisory Program in Geog.....	4	1924	Crook Co., Oregon, History, Gr. 1-4.....	9
1924	Battle Creek, Mich., Course in Geog.....	45	1923	Glendale, Calif., History Course for Intermediate Schools.....	43
1924	Boylston, Mass., Course in Geog.....	11	1924	Hawaii, History, Gr. 5-8.....	14
1923	Bridgeport, Conn., Course in Geog.....	192	1925	Lynn, Mass., History, Gr. 6.....	9
1924	Bridgeton, N. J., Geography, Gr. 1-6.....		1923	Manchester, N. H., Course in History.....	64
1924	Calif. State Dept. of Ed., Geography, Gr. 4-6.....	83	1923	Middletown, Conn., Course in Am. History.....	18
1923	Cheyenne, Wyo., State Dept. of Ed., Material for the Teaching of Wyoming Geography, Rural Schools, Gr. 4-6.....	64	1924	Milwaukee, Wis., History, Gr. 1-6.....	9
1924	Columbus, Ohio, Geog., Gr. 1-6 and VII-B of J. H. S.....	30	1923	New Bedford, Mass., Hist., Elem. Gr.....	6
1923	Concord, Mass., Course in Geog.....	6	1923	New Bedford, Mass., Hist., Gr. 7-8.....	11
1923	Cranston, R. I., Outline in Geog.....	30	1923	Newburgh, N. Y., Course of Study, History.....	6
1924	Denver, Ill., Geography, Gr. 3-8.....	24	1923	New York City, N. Y., History for Elem. Schools.....	30
1923	East Longmeadow, Mass., Outline of Geog.....	3	1924	Olympia, Wash., Course in History.....	
1923	Essex Co., N. J., Home Geog., Gr. IV.....	22	1923	Omaha, Nebr., History, Elem. Grades.....	192
1924	Ferdale, Mich., Nature Study and Geography.....	21	1923	Passaic, N. J., Course in History.....	
1924	Fort Smith, Ark., Geography, Elem. Gr.....	49	1923	Stamford, Conn., Civics.....	
1923	Fort Wayne, Ind., Geog. and Gen. Sci.....	26	1924	Shorewood, Wis., History, J. H. S.....	11
1924	Fresno, Calif., Geography.....		1924	Shrewsbury, Mass., Course in History.....	25
1923	Glendale, Calif., Geog., Gr. B7 and A7.....	15	1923	Sioux City, Iowa, Progress and Patriotism, Course in History.....	407
1924	Gloversville, N. Y., Geography.....	2	1923	Trenton, N. J., Elem. Course in History.....	139
1925	Hackensack, N. J., Geography.....	38	1924	Trenton, N. J., Elem. Course in History.....	12
1924	Hawaii, Geography, Gr. 4-8.....	51	1924	Trenton, N. J., Hist., Gr. 7-8.....	76
1923	Lawrence, Kans., Elem. Geog.....		1923	University of State of N. Y., American History, Gr. 5-8.....	43
1923	Lima, Ohio, Geog. for Elem. Schools and J. H. S.....	60	1924	Virginia, Minn., Course of History.....	21
1925	Lynn, Mass., Geography, Gr. 5-6.....	19	1923	Washington, D. C., Course in History.....	43
1923	Middletown, Conn., Course in Geography.....	12	Social Studies Combined		
1923	Middletown, N. Y., Syllabus in Geog.....	6	1924	Baltimore, Md., Geog., Hist., Arith., Kindergarten, Gr. 1-3.....	78
1925	Millville, N. J., Geog., Gr. 4B.....	30	1925	Baltimore, Md., Social Studies, J. H. S., and Sr. H. S.....	578
1924	Milwaukee, Wis., Course in Geography.....	23	1925	Bridgeton, N. J., Social Science, Gr. 7-12.....	
1924	Montrose, Colo., Course in Geog.....	29	1923	Chicago, Ill., Elem. Social Science, Geog., Hist.....	73
1923	New Bedford, Mass., Geography, Gr. 7-8.....	15	1925	Cleveland, Ohio, Social Sciences, J. H. S.....	338
1923	New Bedford, Mass., Geog. Elem. Gr.....	8	1924	Connecticut State Bd. of Ed., Social Studies.....	85
1923	Newburgh, N. Y., Course in Geog.....	15	1924	Connecticut State Normal School, Social Studies, Hist., Citizenship, Geography.....	58
1924	New Orleans, La., Geography, Gr. 1-8.....	117	1924	Dayton, Ohio, Social Science, Gr. 5.....	83
1924	New York City, N. Y., Course in Geog.....	15	1924	Dayton, Ohio, Social Science and Arithmetic, Gr. 1-4.....	113
1923	Omaha, Nebr., Geography, Elem. Gr.....	56	1924	Denver, Colo., Social Science, Gr. 7-9.....	171
1924	Oshkosh, Wis., Geography, Gr. 3-5.....	38	1923	Detroit, Mich., Geog., Hist., Civics, Gr. 1-6.....	128
1924	Oshkosh, Wis., Geography, Gr. 6-8.....	49	1924	East Chicago, Ind., Social Studies.....	48
1923	Passaic, N. J., Geography, Gr. 1-4.....		1924	Fort Smith, Ark., History and Citizenship, Elementary.....	40
1923	Philadelphia, Pa., Geog. and Intro. Science, Gr. 7-8.....	85	1924	Fresno, Calif., Social Science.....	7
1924	Philadelphia, Pa., Helps for Teachers, Current Geog.....	19	1923	Huron, S. Dak., History and Civics.....	50
1923	Port Arthur, Texas, Outline for Geog.....	8	1925	Lakewood, Ohio, History and Civics, Geography and Vocations.....	50
1925	Portland, Me., Geography, Gr. 3-7.....	47	1924	Lawrence, Kans., Social Studies.....	34
1923	Pueblo, Colo., Geog. for the Grades.....	24	1923	Litchfield, Conn., Social Studies, Gr. 2-8.....	116
1923	Richmond, Va., Course in Geography.....	35	1925	Little Rock, Ark., Teachers Manual, Course in Geog., Hist., Civics for Gram. Gr.....	176
1923	Roanoke, Va., Nature Study and Home Geog. in Prim. Gr.....	23	1923	Los Angeles, Calif., Social Studies.....	24
1923	Saginaw, Mich., Geog., Gr. 3-5 incl.....	49	1925	Lynn, Mass., Social Science, Gr. 8.....	9
1923	San Juan, P. R., Geog., Gr. 5-6.....	90	1925	Lynn, Mass., Civics and Vocations.....	17
1923	South St. Paul, Minn., Third and Fourth Gr. Geography.....	41	1925	Lynn, Mass., Social Science, J. H. S.....	53
1923	South St. Paul, Minn., Geog. of So. St. Paul.....	4	1925	Millville, N. J., Hist. and Civics, Gr. 1-8.....	28
1923	South St. Paul, Minn., Travel and Transportation.....	7	1925	Milwaukee, Wis., Social Science Interests for Gr. 1.....	3
1923	Superior, Nebr., Geography.....	13	1924	Milwaukee, Wis., Social Science, Gr. VII.....	16
1923	Trenton, N. J., Elem. Geog.....	13	1924	Milwaukee, Wis., Outline in Geog., Hist., and Civics.....	
1924	Trenton, N. J., Elem. Geog.....	28			
1923	Washington, D. C., Course in Geog., J. H. S.....	27			
1923	Washington, D. C., Geog., J. H. S.....	13			
1924	Whatcom Co., Wash., Geog. Outline.....	4			

* Mimeographed Sheets.

† Charts.

TABLE 12.—ELEMENTARY COURSES OF STUDY PUBLISHED SINCE JANUARY 1, 1923 (Continued)

No. of Pages	Year	Title	No. of Pages	Year	Title	No. of pages
		SOCIAL STUDIES—contd.			GENERAL COURSES—contd.	
		Social sciences combined—contd.				
103	1925	Minneapolis, Minn., Social Science Projects		1923	Casper, Wyo., Course of Study, Gr. 1-3	97
13		Elem. Gr.	32	1924	Charleston, W. Va., Elem. Course of Study	443
30	1925	Montrose, Colo., History and Civics, Gr. 1-8	50	1923	Charlotte, N. C., Course of Study	292
64	1923	Oakland, Calif., Social Studies, Elem. Cycle	31	1923	Chester, S. C., Grammar and Prim. Course of Study	2
196	1923	Pennsylvania State Dept. of Ed., History and Social Studies, Gr. 4-6 incl.	7	1924	Cicero, Ill., Grade Outline	*17
*56	1924	Pueblo, Colo., History and Civics	16	1924	Cliffside, N. J., Curriculum Studies	*109
*55	1925	Richmond, Va., Hist., Civics, Geog., Elem.	94	1925	Clifton, N. J., Course of Study, Gr. 1-8	95
*26	1923	Roanoke, Va., History, Civics	*16	1923	Coeur D'Alene, Idaho, Grade Outlines	*6
9	1924	Rock Island, Ill., Social Science, Gr. 1-6	*3	1924	Columbus, Georgia, Annual Report	143
*3	1923	Salt Lake City, Morals and Manners, History and Civics		1923	Corsicana, Texas, Course of Study	112
14	1924	Spokane, Wash. History and Civics			Dallas, Texas, Teachers' Handbook, Elem. Gr.	118
*9	1924	Virginia, Minn., Patriotism and Loyalty, Morals and Manners, Safety Ed., Physiology and Hygiene	48	1924	Davenport, Iowa, Synopsis of Courses of Study	32
64	1924	Wyoming State Dept. of Ed., Rural School History, Geography, Primary	16	1924	Dayton, Ohio, Course of Study, Elem. School and Kindergarten	71
18		Safety Education		1923	Denton, Texas, Teachers Manual and Course of Study	145
*9		Birmingham, Ala., Safety Education for Elem. Schools and Junior Safety Council Ed.		1924	Denver, Colo., Courses of Study, Mono. No. 1 Kindergarten	106
30	1923	Chicago, Ill., Safety Ed., A Plan Book for Elem. Schools	46	1923	Downers Grove, Ill., Course of Study, Elem.	*44
192	1925	Omaha, Nebr., Safety Instruction and Suggestions for Junior Safety Council Organization	160	1923	Ecorse, Mich., Course of Study	*15
*11	1923	La Crosse, Wis., Fire Prevention, Health, Manners and Conduct	28	1923	Elberton, Georgia, Twenty-third Annual Report	40
*25	1923	La Crosse, Wis., Safety-Fire Prevention, Health, Manners and Conduct, Bird-Study	37	1923	Eldon, Mo., Course of Study	24
407	1923	Virginia, Minn., Patriotism and Loyalty, Morals and Manners, Safety Ed., Physiology and Hygiene	37	1924	Electra, Texas, Course of Study, Rules and Regulations	36
139	1924	Wyoming State Dept. of Ed. Course for Safety Instruction	48	1924	Elizabeth, N. J., Outline Courses of Study Elem. and Ken.	228
12		Miscellaneous		1923	Enid, Okla., Ninth Annual Report	72
76	1923	Oakland, Calif., Thrift, A Preliminary Course of Study in Kindergarten, Elementary and High School	23	1924	Etowah, Tenn., Bulletin	15
43	1923	South St. Paul, Minn., Industries of So. St. Paul	*2	1923	Florence, Kans., Course of Study, Consolidated Schools	40
21		GENERAL COURSES		1923	Fort Worth, Texas, Course of Study, Prim.	135
43	1923	Akron, Ohio, Summary of Course of Study by Gr.	75	1924	Gallipolis, Ohio, Course of Study, Elem. Gr.	29
78	1923	Angolia, Ind., Announcement and Course of Study	15	1924	Glendale, Calif., Elem. Course of Study	103
578	1923	Arlington, Texas, Nineteenth Annual Announcement	29	1925	Glendale, Calif., Elem. Course of Study	155
73	1923	Austin, Minn., Outline of Work, Gr. 1-6	5	1923	Grand Forks, N. Dak., Course of Study	8
*38	1925	Austin, Texas, Elem. Course of Study	129	1923	Grand Island, Nebr., Schedule of Subjects	*6
113	1925	Bakersfield, Calif., Course of Kindergarten and Gr. 1-6	312	1925	Hanibal, Mo., Course of Study, Gr. 1-H. S.	112
171	1924	Bangor, Maine, Elem. Course of Study	*39	1923	Hollister, Calif., Course of Study	*24
128	1924	Barberton, Ohio, Bulletin No. 1	*25	1923	Holton, Kans., Course of Study	6
48	1923	Benton, Ark., Manual	27	1923	Houston, Texas, Course of Study	234
*40	1923	Berkeley, Calif., Elem. Visual Instruction	119	1925	Hutchinson, Kans., Course in Kindergarten and Elementary Grades	508
*7	1923	Boston, Mass., Syllabus Elem. Schools, Gr. 1-3	226	1924	Independence, Iowa, Outline of Minimum Requirements	12
50	1923	Birmingham, Ala., Manual of Instruction, Elem. Arith., Hist., Lang., Read., Spell.	72	1923	Ionia, Mich., Outline Course of Study	21
54	1923	Birmingham, Ala., Manual of Instruction, Elem. Sup. Study, Citizen Tr., Health, Science, Geography	43	1923	Kalamazoo, Mich., Early Elem. Dept., Course of Study	60
*116	1923	Birmingham, Ala., Manual of Instruction, Elem. Draw., Home Ec., Man. Tr., Music, Phys. Ed., Writing	21	1924	Kent, Ohio, Course of Study, Elem. Schools, Gr. 1-6	*113
176	1923	Birmingham, Ala., Synopsis, Elem. Course of Study	15	1923	Lanett, Ala., Eleventh Annual Bulletin	13
*24	1924	Birmingham, Ala., Synopsis, Elem. Course of Study	16	1923	Lead, S. Dak., Course of Study Sup., Read., Lang., Hist., and Plans for Future Changes	17
*9	1925	Birmingham, Ala., Synopsis, Elem. Course of Study	22	1923	Lorain, Ohio, Elem. Course of Study	*142
*53	1923	Branford, Conn., Course of Study	*96	1924	Los Angeles, Calif., Course of Study, Gr. 3-4	352
28	1923	Bristol, R. I., School Report	48	1924	Los Angeles, Calif., Course of Study, Gr. 5-6	335
*3				1924	Ludlow, Ky., Annual Report of Bd. of Ed.	40
				1923	Macon, Ga., Fifty-first Annual Report	174
				1924	Maquoketa, Iowa, Course of Study	21
				1923	Marinette, Wis., Course of Study, Gr. and Special Work	124
				1923	Marquette, Mich., Outline of Grades	34
				1923	Marshall, Texas, Course of Study	22
				1923	Maysville, Ky., Annual Report	84
				1923	Mexia, Texas, Course of Study	40
				1924	Millford, Conn., Course of Study	80
				1924	Mingo Junction, Ohio, Course of Study	*45
				1923	Modesto, Calif., Course of Study	66
				1923	Montgomery, Ala., Elem., Course of Study	23
				1924	Muncie, Ind., Elem., Course of Study	30
				1925	New Orleans, La., Course of Study	5
				1924	Newton, Iowa, Course of Study, Elem. Gr. 1-6	*178
				1923	Norfolk, Va., Course of Study, Elem. Schools	431
				1925	Oakland, Calif., Sub-Primary Classes	15

* Mimeographed Sheets.

† Charts.

**TABLE 12.—ELEMENTARY COURSES OF STUDY PUBLISHED SINCE JANUARY 1,
1923 (Continued)**

Year	Title	No. of pages	Year	Title	No. of Pages
GENERAL COURSES—contd.			STATE AND COUNTY COURSES—contd.		
1923	Onkland, Calif., Handbook of Suggestions for use in Atypical Classes.	39	1923	El Dorado Co., School Manual and Supple- ment.	2
1923	Onk Park, Ill., Outlines, Elem. Course of Study	*57	1923	Fresno Co., Supplement to Manual.	120
1923	Opelika, Ala., Course of Study, Announce- ment, Rules and Regulations.	8	1923	Glenn Co., Manual and Course of Study, Elem. Schools.	61
1923	Ottumwa, Iowa, Course of Study, Rules and Regulations.	66	1923	Imperial Co., Manual for Public Schools.	95
1923	Passaic, N. J., Course of Study, Gr. 1-6, Hist., Geog., Ind. Arts, Eng., School Festival, Arith.	304	1924	Kern Co., Manual Elem. Schools.	131
1924	Pekin, Ill., Course of Study, Gr. 1-6.	334	1923	Los Angeles Co., Course of Study, Elem. Schools.	161
1924	Philadelphia, Pa., Course adjustments for Ability Groups, 4-8.	31	1924	Los Angeles Co., Manual and Course of Study, Elem. Schools.	158
1925	Pittsfield, Mass., Course of Study, Elem.	*39	1923	Mendocino Co., Course of Study, Elem. Schools.	49
1924	Portland, Oreg., Elem. Course of Study.	128	1924	Mendocino Co., Supplement to the Elem. Course of Study.	16
1925	Pueblo, Colo., Course of Study.	15	1924	Merced Co., Manual for Schools.	44
1923	Racine, Wis., Elem. Course of Study.	95	1923	Merced Co., Manual for Schools.	44
1923	Rochester, N. Y., Elem. Course of Study.	8	1924	Modoc Co., School Manual.	88
1925	Rome, Ga., Course of Study, Gr. 1-H. S.	52	1923	Monterey Co., Course of Study Elem. Schools.	135
1924	Rushville, Ind., Course of Study, Bulletin.	15	1924	Napa Co., Course of Study.	64
1924	Sac City, Iowa, Elem. Course of Study.	7	1924	Nevada Co., Course of Study, Elem. Shools.	87
1924	San Antonio, Texas, Course of Study.	59	1923	Orange Co., Manual of the Public Schools.	103
1924	Sandusky, Ohio, Elem. Course of Study.	*84	1924	Placer Co., Manual and Elem. Course of Study	80
1923	Secaucus, N. J., Course of Study.	109	1923	San Bernardino Co., Manual and Course of Study Elem. Schools.	89
1923	Sioux City, Iowa, Course of Study, Senior Gr. 1.	*15	1923	San Diego Co., Manual for Elem. Schools.	92
1923	Sioux City, Iowa, Course of Study, Junior and Senior Gr. 2.	*72	1924	San Francisco Co., Kdgn.-Prim. Course of Study.	121
1923	Sioux City, Iowa, Course of Study, Junior and Senior, Gr. 3.	*69	1923	San Joaquin Co., Public School Manual.	116
1923	Sioux City, Iowa, Calendar and Description of Material used in Construction Work, Jr. Gr. 1.	*16	1924	San Luis Obispo Co., Course of Study.	59
1923	Spartanburg, S. C., Thirty-ninth Annual Report.	43	1924	San Mateo Co., Supplemental Course of Study	9
1923	Springfield, Ohio, Courses and Rules and Regulations.	248	1924	Santa Barbara Co., Manual and Course of Study for Elem. Schools.	97
1923	Texarkana, Ark., Outline Course of Study, Elem. Gr. 1-6.	7	1923	Santa Cruz Co., School Manual.	116
1924	Trenton, N. J., Courses for Special Classes.	64	1924	Shasta Co., Course of Study for Elem. Schools	49
1925	Trenton, N. J., Curriculum Yearbook, Ele- mentary Division.	396	1924	Stanislaus Co., Second Supplement to Manual Elem. Schools.	8
1923	Union City, Tenn., Course of Study.	93	1924	Tulare Co., Manual Elem. Schools.	129
1923	Van Wert, Ohio, Courses of Study, Assign- ments Gr. 3-5.	62	1924	Yuba Co., Manual of the Public Schools.	62
1923	Victoria, Texas, Courses of Study.	95	1924	Colorado	
1923	Virginia, Minn., Courses of Study, Manual No. 5.	41	1924	Baca Co., Bulletin.	*10
1925	Virginia, Minn., Courses of Study, Manual No. 1.	126	1924	Delta Co., The Co. Supt's Bulletin.	8
1924	Waco, Texas, Course of Study, Gr. 1-H. S.	116	1923	Larimer Co., Bulletin A.	44
1924	Warren, Pa., Outline of Courses, Gr. 1-2-4-6-7.	*33	1924	Larimer Co., Bulletin B.	15
1925	Warren, Pa., Outline of Courses, Gr. 3 and 5.	*11	1924	Morgan Co., Bulletin.	*28
1923	Watertown, N. Y., Annual Report.	120		Connecticut	
1924	Wausau, Wis., Course of Study, Kg.-H. S.	125	1924	Connecticut State Bd. of Ed. Basic Mono- graphs to accompany Courses of Study and Teaching Monographs.	18
1924	West Hartford, Conn., Elem. Course of Study Monographs.	99		Florida	
1923	Wichita Falls, Texas, Outline Elem. Courses.	6	1924	Florida State Dept. of Ed. Courses of Study for Elem. Schools.	255
1923	Winston-Salem, N. C., Course of Study.	51		Georgia	
1924	York, Pa., Course of Study, Gr. 1-6.	79	1924	Baldwin Co., Course of Study Primary and Elem. Gr.	41
	STATE AND COUNTY COURSES		1925	Georgia State Dept. of Ed. Manual for Georgia Teachers.	296
1924	Alabama		1924	Randolph Co., Course of Study.	16
	Alabama State Dept. of Ed., Course of Study for Elem. Schools.	160		Hawaii	
1923	Alaska		1924	Hawaii Territorial Dept. of Ed. Courses of Study in Primary Gr.	147
	Alaska Territorial Bd. of Ed. Manual and Course of Study, Elem. Schools.	148		Idaho	
	Arizona		1925	Idaho State Dept. of Ed. Courses of Study and Manual of Methods.	160
1923	Arizona State Dept. of Ed., General Course of Study.	190		Illinois	
1923	Tempe State Normal School, Bulletin.	75	1924	Champaign Co., Course of Study, Supplement to State Course.	30
	California		1924	Christian Co., Supplement to Ill. State Course of Study, Gr. 3-8.	72
1924	Butte Co., School Manual and Course of Study.	105	1925	Cumberland Co., Supplement to State Course of Study.	49
1924	Calveras Co., Public School Manual.	72	1924	DeKalb Co., Outline of Work.	*27
			1924	Payette Co., Manual of the Common Schools.	45

* Mimeographed Sheets.

† Charts.

TABLE 12.—ELEMENTARY COURSES OF STUDY PUBLISHED SINCE JANUARY 1, 1923 (Continued)

Year	Title	No. of Pages	Year	Title	No. of Pages
STATE AND COUNTY COURSES—contd.			STATE AND COUNTY COURSES—contd.		
Illinois—contd.			Montana		
1924	La Salle Co., Manual of the Common Schools	103	1924	Montana State Course City Elem. Schools...	628
1924	Logan Co., Supplement to Course of Study...	15	1923	Montana State Course Rural Elem. Schools...	516
1924	Mason Co., Course of Study	38	Nebraska		
1924	McLearn Co., Suggestions and Outlines for the Work in Schools...	14	1924	Cedar Co., Circular to Teachers...	*21
1924	Piatt Co., School Work Curricular No. 46...	42	1924	Gage Co., Bulletin	*14
1924	Vermilion Co., Course of Study, Supplement to State Course...	60	1924	Nebraska State Bd. of Ed. Courses of Study...	250
Indiana			1923	Nebraska State Bd. of Ed. Report	47
1924	La Porte Co., Supplementary Manual	68	Nevada		
1924	St. Joseph Co., Thirty-first Annual Report and Manual	116	1923	Nevada State Bd. of Ed. Supplement to 1922 Course and the 1923 Textbook adoptions	14
1924	Wabash Co., Supplement to County Manual	*22	New Jersey		
Iowa			1924	Cumberland Co., Course of Study Elem. Gr.	23
1924	Clinton Co., Handbook for Teachers	26	1924	Somerset Co., Suggestions on Teaching of History, Discussed at Teachers' Meeting in 1922	*20
1923	Dickinson Co., Course of Study for Rural Schools	†1	New Mexico		
1924	Franklin Co., Course of Study	16	1923	New Mexico St. Bd. of Ed. Course of Study	272
1924	Harrison Co., Outline of Course of Study for Rural Schools	†1	New York		
1923	Jefferson Co., Course of Study	21	1923	Allegheny Co., Syllabus Outline by Western N. Y. Ass'n. of District Superintendents	48
1923	Montgomery Co., Outline for Work in Rural Schools	*11	1924	Erie Co., Syllabus Outline by Western N. Y. Ass'n. of District Supts.	48
1923	Sac County, Course of Study and Textbooks, Rural Schools	†1	North Carolina		
1923	Wayne Co., Course of Study	55	1923	North Carolina State Course Elem. Schools	586
Kansas			Ohio		
1923	Kansas State Course for Rural and Gr. Schools	227	1924	Ashland, Co., Outline of Course of Study, Rural Schools	*1
Kentucky			1924	Belmont Co., Course of Study, Rural Schools	*1
1924	Kentucky State Bd. of Ed. Preliminary Outline of the State Course of Study	35	1924	Erie Co., Course of Study	*46
Louisiana			1924	Gallia Co., Outline of Work	*46
1923	Louisiana State Course for Elem. Schools	222	1924	Knox Co., Course of Study Elem. Sch.	*40
1924	Louisiana State Course for Elem. Schools	234	1924	Lucas Co., Course of Study, Elem. Sch.	*133
Maryland			1923	Mahoning Co., Course of Study, Elem. Sch.	134
1924	Carroll Co., Course of Study for Elem. Schools	*324	1923	Ohio State Dept. of Ed., A Syllabus for the Study of Elem. Sch. Subjects	111
1923	Cecil Co., Outline of Work in One and Two-room Schools	11	1924	Ross Co., Manual of the Minimum Course of Study	42
1924	Cecil Co., Supplement to Outline of Work in One and Two-room Schools	19	1923	Sandusky Co., Uniform Course of Study	77
1924	Dorchester Co., Course for Elem. Schools	47	1924	Trumbull Co., Course of Study for Elem. and High Schools	38
1925	Garrett Co., Teachers Handbook	*40	1924	Wood Co., Supervision Program	*28
1925	Harford Co., Course of Study	*29	1924	Wood Co., Course of Study Outlines for Elem. and High Schools	46
1924	Somerset Co., Course of Study	82	Oklahoma		
1925	Talbot Co., Course of Study	*21	1924	Oklahoma State Dept. of Ed. Course of Study, Study for Common Schools, Gr. 1-8	148
Massachusetts			Oregon		
1923	Framingham State Normal School, Course of Study	45	1924	Crook Co., Course of Study	*23
1924	Shelburne Falls Superintendency Union, School Manual	55	1924	Jackson Co., Suggestive Outlines	*23
Maine			1924	Marion Co., Suggestive Outline for Rural Schools, 1st quarter	36
1924	Maine State Bd. of Ed. Course of Study, Elem. Schools	233	1924	Marion Co., Suggestive Outline for Rural Schools, 2nd quarter	22
Michigan			1924	Marion Co., Suggestive Outline for Rural Schools, 3rd quarter	20
1923	Cheboygan Co., Outline of Study	16	Pennsylvania		
1923	Jackson Co., Course of Study	*55	1924	Allegheny Co., Course of Study	206
1924	Lenawee Co., Course for Rural Schools	20	1924	Potter Co., Course of Study, Elem. Schools	28
1923	Muskegon Co., Course of Study	33	South Dakota		
Minnesota			1925	Potter Co., Letters to Teachers	*3
1923	Minnesota State Curriculum for Elem. Schools	447	1924	Spink Co., Letters to Teachers	*34
Mississippi			Tennessee		
1923	Mississippi State Bd. of Ed. Course of Study, Gr. 1-8	400	1924	Tennessee State Dept. of Ed., Course of Study	48
Missouri					
1923	Missouri State Course Elem. Schools	270			
1924	Missouri State Course Elem. Schools	378			

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TABLE 12.—ELEMENTARY COURSES OF STUDY PUBLISHED SINCE JANUARY 1, 1923 (Continued)

Year	Title	No. of Pages	Year	Title	No. of Pages
STATE AND COUNTY COURSES—contd.			STATE AND COUNTY COURSES—contd.		
Texas			Washington		
1924	Coryell Co., Public School Bulletin.....	21	1924	King Co., Course of Study and Manual.....	57
1923	North Texas State Teachers College, Denton, Bulletin.....	231	1924	Pierce Co., Manual and Course of Study, Elem. Schools.....	92
1924	Texas State Dept. of Ed. Manual and Course of Study.....	144	West Virginia		
1923	West Texas State Teachers College, Canyon, Quarterly.....	206	1923	West Virginia State Course Elem. Schools....	55
Utah			1924	West Virginia State Course Elem. Schools....	69
1923	Utah State Dept. of Ed. Course of Study, Elem. Schools.....	224	Wisconsin		
Vermont			1924	Fon du Lac Co., Outline of Course of Study..	*47
1924	Vermont State Dept. of Ed. Course of Study, Rural and Elem. Schools.....	324	1924	Outagamie Co., Letters to Teachers.....	*112
Virginia			1924	Richland Co., Outline of Course of Study, Rural Schools.....	19
1923	Virginia State Dept. of Ed. Course of Study, for Rural and Elem. Schools.....	291	1923	Wisconsin State Dept. of Ed., Elem. Course Study.....	227
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Research Bulletin
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National Education Association

Title Page for
VOLUME III
January to November, 1925

(For index see page 195)

The Research Bulletin is issued by the Research Division, a part of the headquarters staff of the National Education Association. This division was organized in February, 1922, for the purpose of conducting scientific studies of special interest to members of the teaching profession.

Bulletin One was issued by the Research Division in June, 1922, and *Bulletin Two* in November, 1922. The first issue of the *Research Bulletin* is Volume I, No. 1, January, 1923, entitled *Facts on State Educational Needs*. With Volume I, No. 1, the *Research Bulletin* became a regular publication, issued five times each year—January, March, May, September and November. The Research Bulletins composing Volumes I, II, and III are listed on page 194.

RESEARCH DIVISION
THE NATIONAL EDUCATION ASSOCIATION
OF THE UNITED STATES

1201 Sixteenth Street Northwest, Washington, D. C.

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Research Bulletins Issued to Date

Facts on the Cost of Public Education and What They Mean. Bulletin 1, June, 1922. 68 pp. (Out of Print.)

Facts for American Education Week. Bulletin 2, November, 1922. 40 pp. Price per copy, 25 cents.

Facts on State Educational Needs. Vol. I, No. 1, January, 1923. 64 pp. (Out of print.)

Can the Nation Afford to Educate Its Children? Vol. I, No. 2, March, 1923. 72 pp. Price per copy, 25 cents.

Teachers' Salaries and Salary Trends in 1923. Vol. I, No. 3, May, 1923. 116 pp. Price per single copy, \$1.00.

Five Questions for American Education Week. Vol. I, No. 4, September, 1923. 56 pp. (Out of print.)

Facts on the Public School Curriculum. Vol. I, No. 5, November, 1923. 48 pp. (Out of print.)

Current Facts on City School Costs. Vol. II, Nos. 1 and 2, January and March, 1924. 64 pp. (Out of print.)

Teachers' Retirement Allowances. Vol. II, No. 3, May, 1924. 32 pp. Price per copy, 25 cents.

Facts on the Public School for American Education Week. Vol. II, No. 4, September, 1924. 40 pp. (Out of print.)

The Problem of Teacher Tenure. Vol. II, No. 5, November, 1924. 40 pp. Price per copy, 25 cents.

Public School Salaries in 1924-1925. Vol. III, Nos. 1 and 2, January and March, 1925. 72 pp. Price per copy, 50 cents.

Taking Stock of the Schools. Vol. III, No. 3, May, 1925. 32 pp. Price per copy, 25 cents.

Keeping Pace With the Advancing Curriculum. Vol. III, Nos. 4 and 5, September and November, 1925. 96 pp. Price per copy, 50 cents.

INDEX TO VOLUME III

Tables of Contents for the Bulletins composing this volume will be found on pages 3, 75 and 107.

	Bulletin No.	Page
Advertising:		
Education and Advertising.....	3	94
Yearly Expenditure for Advertising.....	3	94
Agricultural Products:		
Increase in Value of.....	3	80
American Education Week:		
President Coolidge's Proclamation.....	3	104
Selected References for American Education Week.....	3	100-103
Arithmetic:		
Arithmetic Instruction—Past and Present.....	4 & 5	162
Bibliography.....	4 & 5	170
Courses of Study Published Since January 1, 1923.....	4 & 5	183
Curriculum in Arithmetic—How Shall It Be Determined?.....	4 & 5	137
Drill—According to What Criteria Shall It Be Organized?.....	4 & 5	136
Experimental Education—What Has It to Contribute?.....	4 & 5	137
Major Curricular Problems in Arithmetic.....	4 & 5	131
Procedure for Building up Ability to Handle Reasoning Problems.....	4 & 5	136
Psychological Studies—What Contributions Have They Made?.....	4 & 5	136
Research and the Curriculum in Arithmetic.....	4 & 5	131
Research Findings as to Business Usage.....	4 & 5	134
Socially Useful Processes.....	4 & 5	133
Standardized Tests—What Help from Them?.....	4 & 5	137
Systematic Instruction—When Shall It Begin?.....	4 & 5	132
Time Allotment (Charts IV and V).....	4 & 5	132, 133
What Topics Are Being Eliminated from Arithmetic Courses?.....	4 & 5	135
Art:		
Bibliography.....	4 & 5	171
Courses of Study Published Since January 1, 1923.....	4 & 5	184
Bases for Evaluating Courses of Study:		
Criteria for Evaluating Courses of Study.....	4 & 5	180
What Is a Course of Study and What Is It For?.....	4 & 5	179
Bibliographies:		
American Education Week—Selected References.....	3	100-103
General Curricular Problems (Table 10).....	4 & 5	168-169
Subjects of Elementary School Curriculum (Table 11).....	4 & 5	170-178
Teachers' Salaries—Selected References.....	1 & 2	71
Capital and Wealth: (See Wealth)		
Character Education:		
Character Training—Moral Catechism vs. Habits of Right Conduct.....	4 & 5	166
Courses of Study Published Since January 1, 1923.....	4 & 5	184
Civics (See Social Studies)		
Committee Organization:		
What Form Results in Maximum Teacher Participation in Curriculum Revision?.....	4 & 5	120
Cost of Education:		
Amount Expended per Given Amounts of Tangible Property in 1922 (Table 1).....	3	79
Annual National Savings and School Costs.....	3	83
Are School Costs Preventing Business Expansion?.....	3	84
Are the Schools Costing Too Much?.....	3	77-90
Cost of Automobiles and Education, 1920-1924 Incl. (Chart VIII).....	3	87
Cost of Education and Luxuries Compared (Chart IX).....	3	89
Do School Costs Make It Difficult to Provide for the Future?.....	3	86
How Much Are We Spending for Education?.....	3	78
Is the Cost of Public Education More Than Society Can Bear? (Chart I).....	3	79
Is the Nation Able to Support Its Public Schools on the Present Basis?.....	3	90
National Resources and the Cost of Education.....	3	78
Per Cent of Nation's Income Saved and Per Cent Expended for Education (Chart IV).....	3	83
School Costs and Bankruptcy.....	3	77
School Costs and Increase of National Capital.....	3	81
School Costs and the Material Needs of Life.....	3	80
School Support and Economic Productivity (Chart X).....	3	93
School Support and Savings Accounts Per Capita (Chart XII).....	3	97
School Support and School Results (Chart XI).....	3	95
Why School Costs Have Increased (Chart V).....	1 & 2	20
Cost of Living:		
Average Industrial Wages, Cost of Living and Purchasing Power of Wages (Table 8).....	1 & 2	17
Increase in Cost of Living Must Be Considered As Well As Increase in Number of Dollars Received.....	1 & 2	17
Purchasing Power of Teachers' Salaries (Table 7) and (Chart IV).....	1 & 2	17, 19
Purchasing Power of the Dollar in 19 Cities—1914 to 1924 (Table 9).....	1 & 2	19

INDEX TO VOLUME III *Continued*

	Bulletin No	Page
Courses of Study:		
Availability of Local Courses of Study.....	4 & 5	182
Bases for Evaluating.....	4 & 5	179
Definition.....	4 & 5	179
Elementary Courses of Study Published Since January 1, 1923 (Table 12).....	4 & 5	183-192
Legitimate Uses of Lists of Course of Study Bulletins.....	4 & 5	182
Purposes of a Course of Study.....	4 & 5	179
Curriculum:		
Advances in Educational Science and Psychology—Their Relation to Curricula.....	4 & 5	113
Bibliography.....	4 & 5	168-178
Complexity of Modern Life—Its Relation to Curricula.....	4 & 5	112
Definition.....	4 & 5	179
Increases in School Attendance and Pupil Heterogeneity—Their Relation to Curricula.....	4 & 5	113
Looking Backward at the Curriculum.....	4 & 5	162
Rapidity of Change in Modern Life—Its Relation to Curricula.....	4 & 5	112
See: Courses of Study; and Curriculum Building.		
Curriculum Building:		
Decisions Preliminary to the Launching of a Local Program.....	4 & 5	119
Intangible Results of Course of Study Revision Program.....	4 & 5	183
Seven Approaches to Curriculum Building.....	4 & 5	116
Shall the Curriculum Be Built from the Outside or the Inside?.....	4 & 5	119
Should Classroom Teachers Participate?.....	4 & 5	119
Teachers—In What Ways Can They Give and Receive Help?.....	4 & 5	119
Teaching Corps—How Can It Be Interested in Curriculum Building?.....	4 & 5	120
See: Curriculum; and Courses of Study.		
Curriculum Specialist:		
Outside Specialist in Local Curriculum Program.....	4 & 5	123
Earning Power:		
School Support and Economic Productivity (Chart X).....	3	93
See: Purchasing Power		
Educational Theories Affecting Curriculum Building:		
Opposite Poles in Educational Theory.....	4 & 5	115
Seven Approaches to Curriculum Building.....	4 & 5	116
Summary and Reconciliation of Curriculum Theories.....	4 & 5	117
Theory of Expression.....	4 & 5	115
Theory of Repression.....	4 & 5	115
Two Intermediate Points of View.....	4 & 5	114
Varied Opinion As to the Purpose of the Public School.....	4 & 5	114
Efficiency of Schools:		
Are the Schools Getting Results?.....	3	91-99
Education a Productive Force.....	3	91
Education and Earning Power.....	3	94
Education and Leadership.....	3	98
Education and the Production of Men of Eminence.....	3	96
Good Education and Good Business.....	3	92
Equal Pay for Equal Service:		
Men and Women of Equal Training and Experience Receive Same Salary (Table 46).....	1 & 2	61
State and Local Enactments Concerning Equal Pay (Table 47).....	1 & 2	62
Geography:		
Courses Published Since January 1, 1923.....	4 & 5	188
Geography Teaching—Then and Now.....	4 & 5	163
See: Social Studies.		
Grammar (See Language and Grammar)		
Health and Physical Education:		
Bibliography.....	4 & 5	172
Courses Published Since January 1, 1923.....	4 & 5	184-185
Research and the Curriculum in Health and Physical Education.....	4 & 5	156
Summary of Trend of Research Findings in Health Education.....	4 & 5	157
Summary of Trend of Research Findings in Physical Education.....	4 & 5	158
Time Allotment (Charts XIV and XV).....	4 & 5	156-157
History:		
Courses Published Since January 1, 1923.....	4 & 5	188
History Teaching—Mediaeval and Modern.....	4 & 5	165
See: Social Studies		
Home Economics:		
Bibliography.....	4 & 5	172-173
Courses of Study Published Since January 1, 1923.....	4 & 5	185
Income:		
Percentage of National Income Saved 1909 to 1918 (Table 3).....	3	83
Per Cent of Nation's Income Saved and Per Cent Expended for Education (Chart IV).....	3	83
Institutes and Salaries:		
Number of Cities Where Teachers' Salaries Continue During Attendance at Institutes (Table 49).....	1 & 2	62

Index to Volume III (Continued)

	Bulletin No.	Page
Insurance:		
Annual Expenditures for Insurance.....	3	86
Do School Costs Make It Difficult to Provide for the Future?.....	3	86
Language and Grammar:		
Bibliography.....	4 & 5	174
Children's Grammatical Errors—The Basis for a Course in Grammar.....	4 & 5	147
Courses Published Since January 1, 1923.....	4 & 5	185-186
Objectives of Language and Grammar (Table 3).....	4 & 5	149
Research and the Curriculum in Language and Grammar.....	4 & 5	146
Time Allotment (Charts X and XI).....	4 & 5	146-147
Leave of Absence:		
Number of Cities Granting Leave of Absence for Study (Table 45).....	1 & 2	61
Luxuries:		
A Study in Values (Chart IX).....	3	89
Expenditures in United States for Certain Articles, 1920-1924 (Table 5).....	3	88
Is Anything Left Over for the Luxuries of Life?.....	3	89
Manufactured Products: (Increase in Value of)	3	80
Moral Education: (See Character Education)		
Motion Pictures: (Annual Cost)	3	87
Music:		
Attainments for Sixth Grade Pupils.....	4 & 5	161
Bibliography.....	4 & 5	176
Courses Published Since January 1, 1923.....	4 & 5	186
Individual Differences—Recognition in Courses of Study.....	4 & 5	158
Rhythmic Training—Does It Improve Sense of Rhythm?.....	4 & 5	160
Scientific Testing and Standardization—Place in the Course of Study?.....	4 & 5	160
Time Allotment (Charts XVI and XVII).....	4 & 5	159-160
National Resources: (See Wealth; Income; and Cost of Education)		
Nature Study and Elementary Science:		
Bibliography.....	4 & 5	178
Courses Published Since January 1, 1923.....	4 & 5	186
"Notables" and Education:		
Are the Nation's Leaders Born on Farms or in Cities (Chart XIV).....	3	99
Birthplace of "Notables" Born about 1870.....	3	98
Education and Leadership (Chart XIII).....	3	98
Education and Production of Men of Eminence.....	3	96
Penmanship:		
Actual Achievements in Speed and Quality of Handwriting on Ayres Scale (Table 1).....	4 & 5	129
Bibliography.....	4 & 5	175
Courses Published Since January 1, 1923.....	4 & 5	186-187
Penmanship Demands in Occupations.....	4 & 5	130
Proposed Standards for Quality and Speed on Ayres Scale (Table 2).....	4 & 5	129
Quality and Speed—What Can Children Attain?.....	4 & 5	128
Quality and Speed—What Does Life Demand?.....	4 & 5	130
Research and the Curriculum in Handwriting.....	4 & 5	128
Sixth Grade Standards.....	4 & 5	131
Time Allotment (Charts II and III).....	4 & 5	127-128
Physical Education: (See Health and Physical Education)		
Professional Improvement:		
Financial Reward for (Table 44).....	1 & 2	61
See: Leave of Absence		
Publicity:		
Essential Feature of Educational Work.....	3	100
How May Local Community Be Interested in Curriculum Revision.....	4 & 5	121
References on School Publicity.....	3	100-103
Purchasing Power:		
Of Teachers' Salaries (Table 7) and (Chart IV).....	1 & 2	17, 19
Of the Dollar in 19 Cities (Table 9).....	1 & 2	19
See: Earning Power; and Value of an Education.		
Reading:		
Appropriate Materials for Instruction.....	4 & 5	145
Bibliography.....	4 & 5	175-176
Children's Interests in Reading.....	4 & 5	145
Courses Published Since January 1, 1923.....	4 & 5	187
How Much Reading Should Be Required of Elementary Pupils?.....	4 & 5	143
Research and the Curriculum in Reading.....	4 & 5	141
Silent Reading—What Consideration Should Be Given to It?.....	4 & 5	142
Standard Tests—What Help from Them?.....	4 & 5	145
Time Allotment (Charts VIII and IX).....	4 & 5	143-144
Winnetka Graded Book List.....	4 & 5	145

Index to Volume III (Continued)

	Bulletin No.	Page
Salaries:		
Administrative Officers:		
Distribution of Salaries Paid in Cities (Tables 21-25).....	1 & 2	36-40
Salaries Paid Administrative Officers in 1924-1925.....	1 & 2	36
Assistant or Vice Principals or Deans:		
Distribution of Salaries Paid in High Schools (Table 17).....	1 & 2	32
Average: (See Median)		
Clerks in Administrative and Supervisory Offices:		
Distribution of Salaries Paid (Table 18).....	1 & 2	33
Median Salaries Paid Clerks in Principals Offices (Chart IX).....	1 & 2	34
Salaries Paid Clerks in Administrative Offices (Chart X).....	1 & 2	34
Directors and Supervisors:		
Distribution of Salaries Paid, 1924-1925, in Cities of Five Population Groups (Tables 26-30).....	1 & 2	42-46
Median Salaries Paid Supervisors of Music in 842 Cities (Chart XII).....	1 & 2	41
Salaries Paid Directors and Supervisors in 1924-1925.....	1 & 2	40
Elementary Principals:		
Median Salaries Paid School Principals in 1923 Compared with Those Paid in 1925 (Chart II).....	1 & 2	14
Median Salaries Paid Teaching and Supervising Elementary Principals in 1924-1925 (Table 15).....	1 & 2	30
Elementary Teachers:		
Median Salaries Paid Elementary and High School Teachers, 1924-1925 (Table 11).....	1 & 2	21
Median Salaries Paid Elementary Teachers in 1443 Cities (Chart VI).....	1 & 2	22
Median Salaries Paid Elementary Teachers in Rural and Urban Sections of the United States (Chart VIII).....	1 & 2	26
Median Salaries Paid Kindergarten and Elementary Teachers, 1924-1925 (Table 12).....	1 & 2	27
Minimum, Median and Maximum Salaries Paid Elementary Teachers in 1925 (Chart XIII).....	1 & 2	48
Equal Pay for Equal Service (Tables 46 and 47).....	1 & 2	61-62
High School: (See Junior and Senior High School Principals and Teachers)		
Increases:		
Have Teachers' Salaries Been Increased?.....	1 & 2	12
Have There Been Dollar Increases in Salaries?.....	1 & 2	12
Median Salaries Paid in 1923 Compared with 1925 (Table 3, Chart I).....	1 & 2	12-13
Janitors:		
Distribution of Salaries Paid Janitors in 1165 Cities in 1924-1925 (Table 19).....	1 & 2	35
Hiring of Janitors (Table 20).....	1 & 2	35
Junior and Senior High School Principals:		
Median Salaries Paid Principals in 1924-1925 (Table 16).....	1 & 2	31
Salaries Paid School Principals, 1923 and 1925, Compared (Chart II).....	1 & 2	14
Junior and Senior High School Teachers:		
Median Salaries Paid in 1309 Cities (Chart VII).....	1 & 2	23
Median Salaries Paid in 1924-1925 (Table 13).....	1 & 2	28
Minimum, Median and Maximum Salaries Paid in 1925 (Chart XIV).....	1 & 2	49
Kindergarten Teachers:		
Median Salaries Paid Kindergarten Teachers, 1924-1925 (Table 12).....	1 & 2	27
Medians:		
Median Salaries Paid Teachers in 1923 and 1925 (Chart I).....	1 & 2	13
Median Salaries Paid Teachers, Principals, Administrative Officers, Directors and Supervisors in 1922 and 1924 (Table 3).....	1 & 2	12
State Salary Medians.....	1 & 2	27
Rural Teachers and Principals:		
Median Salaries Paid Rural Teachers and Principals by States Compared With Those Paid in 1923 (Table 6).....	1 & 2	16
Median Salaries Paid Rural Teachers and Principals in 1922-1923 and 1924-1925 (Table 4).....	1 & 2	15
Salary Schedules:		
Examples of Recently Adopted Salary Schedules.....	1 & 2	58
Five Reasons for Adequate Salary Schedules.....	1 & 2	7
Minimum Salaries in 1924-1925 in Cities of Five Population Groups (Tables 33-37).....	1 & 2	50-52
Maximum Salaries in 1924-1925 in Cities of Five Population Groups (Tables 38-42).....	1 & 2	53-56
Percentage of Cities With Salary Schedules (Table 32).....	1 & 2	47
Annual Increases Provided for in City Salary Schedules, 1924-1925 (Table 43).....	1 & 2	57
Relief from Classes During School Hours (Table 48).....	1 & 2	62
Leave of Absence for Study and Professional Improvement (Table 45).....	1 & 2	61
Teachers' Salaries Continue During Attendance at Institutes (Table 49).....	1 & 2	62
Financial Reward for Completion of Additional Professional Training (Table 44).....	1 & 2	61
Salary Schedules in Jersey City, Minneapolis, St. Louis, Washington.....	1 & 2	58-60
Salary Schedule Provisions for Minimum Salaries.....	1 & 2	47
Salary Schedule Provisions for Maximum Salaries.....	1 & 2	53
Salary Schedule Provisions for Number of Annual Increases.....	1 & 2	57
Salary Schedules and Salary Schedule Features, 1924-1925.....	1 & 2	47
Salary Schedules Versus Lowest Bidders.....	1 & 2	47
Special Features of 1924-1925 Salary Schedules.....	1 & 2	61
School Nurses: Median Salaries, 1924-1925 (Table 14).....	1 & 2	29

Index to Volume III (Continued)

	Bulletin No.	Page
Salaries (Continued):		
Senior High School Principals:		
Median Salaries Paid in 1923 Compared with Those Paid in 1925 (Chart II).....	1 & 2	14
Median Salaries Paid Senior High School Principals in 1924-1925 (Table 16)	1 & 2	31
Senior High School Teachers:		
Maximum, Median and Minimum Salaries Paid (Table 31).....	1 & 2	46
Median Salaries Paid in 1309 Cities (Chart VII).....	1 & 2	23
Median Salaries Paid in 1924-1925 (Table 13).....	1 & 2	28
Single Salary Schedules:		
Partial List of Cities Having Single Salary Schedules.....	1 & 2	59-60
Use of the Single Salary Schedule.....	1 & 2	58
Special Class Teachers: Median Salaries in 1924-1925 (Table 14).....	1 & 2	29
Special Salary Service, National Education Association.....	1 & 2	2
Superintendents:		
Distribution of Salaries Paid, 1924-1925 (Tables 21 to 25).....	1 & 2	36-40
Median Salaries Paid in 1134 Cities (Chart XI).....	1 & 2	41
Teachers' Salaries and National Progress.....	1 & 2	20
Teachers' Salaries Paid in Cities in 1925.....	1 & 2	21
Trends of Median Salaries in City Schools (Table 5).....	1 & 2	15
Savings:		
Amounts in Savings Accounts (Charts V and VI).....	3	85
Annual National Savings and School Costs.....	3	83
Are School Costs Making it Difficult to Save Money?.....	3	84
School Costs and Increase in Capital.....	3	81
Percentage of National Income Saved 1909 to 1918 (Table 3).....	3	83
Per Cent of Income Saved and Expended for Education (Chart IV).....	3	83
School Support and Savings Accounts Per Capita (Chart XII).....	3	97
School Attendance:		
Compulsory School Attendance Laws.....	4 & 5	113
Increase.....	4 & 5	113
Science: (See, Nature Study and Elementary Science)		
Social Studies:		
Bibliography.....	4 & 5	177
Content of Social Studies—How Shall It Be Determined?.....	4 & 5	151
Courses Published Since January 1, 1923.....	4 & 5	187-189
Geography—What Are Its Basic Facts?.....	4 & 5	154
Historical Information Essential to Citizenship.....	4 & 5	155
History Text Books—Do They Put Emphasis Where it Belongs?.....	4 & 5	155
Research and the Curriculum in Social Studies.....	4 & 5	150
Research Methods Most Frequently Used.....	4 & 5	151
Social Science Topics in Current Magazines (Table 8).....	4 & 5	153
Time Allotment (Chart XII and XIII).....	4 & 5	150-151
Spelling:		
Bibliography.....	4 & 5	174
Courses Published Since January 1, 1923.....	4 & 5	187
Principal Methods in Teaching Spelling.....	4 & 5	141
Meaning and Use of Words in Spelling Lesson?.....	4 & 5	141
Research and the Curriculum in Spelling.....	4 & 5	138
Time Allotment (Charts VI and VII).....	4 & 5	139-140
What Words Shall Be Taught?.....	4 & 5	138
Time Allotments:		
Arithmetic (Charts IV and V).....	4 & 5	132-133
How Determined?.....	4 & 5	123
Language (Charts X and XI).....	4 & 5	146-147
Music (Charts XVI and XVII).....	4 & 5	159-160
Penmanship (Charts II and III).....	4 & 5	127-128
Physical Training (Charts XIV and XV).....	4 & 5	156-157
Reading (Charts VIII and IX).....	4 & 5	143-144
Social Studies (Charts XII and XIII).....	4 & 5	150-151
Spelling (Charts VI and VII).....	4 & 5	139-140
Tobacco Expenditures: (See Luxuries)		
Value of an Education:		
Education and Earning of Farmers.....	3	94-96
Education and Earning Power.....	3	94
Wages:		
Industrial Wages, Cost of Living and Purchasing Power (Table 8).....	1 & 2	17
In Building Trades in Six Representative Cities (Chart III).....	1 & 2	18
Wealth:		
Schools Costs and Increase in Capital.....	3	81
Corporation Surplus, 1910 to 1921 (Table 4).....	3	84
How Much Economic Power Has the United States?.....	3	78
Increase in Value of the Nation's Tangible Wealth (Chart III).....	3	82

HIGH MORALE comes from the feeling on the part of each that he is engaged in a great work under a plan which enables him to see the best of his own life expressed in it. Service to a great cause is the source of life. Curriculum making is the great work of our profession. All else that is done in a school system must, in the last analysis, come to bear as a means to the solution of this problem. Certainly the cause is big enough. It is as significant as life itself. Give every member of our profession a chance to do his best for it and the results need not be feared. This is a challenge of curriculum making to every community. *A. L. Threlkeld, 1925 Official Report Department of Superintendence p. 201.*

