DEPARTMENT OF THE INTERIOR
BUREAU OF EDUCATION

BULLETIN, 1919, No. 50
IN SEVEN PARTS

THE PUBLIC SCHOOL SYSTEM OF MEMPHIS, TENNESSEE

REPORT OF A SURVEY MADE UNDER THE DIRECTION OF THE COMMISSIONER OF EDUCATION

PART 2

I. The Elementary Schools
II. The High Schools

WASHINGTON
GOVERNMENT PRINTING OFFICE
1920

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WASHINGTON, D. C.
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20 CENTS PER COPY

LETTER OF TRANSMITTAL.

DEPARTMENT OF THE INTERIOR,
BUREAU OF EDUCATION,
Washington, September 25, 1919.

SIR: I am transmitting herewith for publication as a bulletin of the Bureau of Education the report of a survey of the schools of the city of Memphis, Tenn., made under my direction. I am asking that it be printed in the following seven parts:

Part 1. Chapter I. An Industrial and Social Study of Memphis.
Chapter II. School Organization, Supervision, and Finance.
Chapter III. The Building Problem.
Part 2. Chapter I. The Elementary Schools.
Chapter II. The High Schools.
Part 3. Civic Education.
Part 4. Science.
Part 5. Music.
Part 6. Industrial Arts, Home Economics, and Gardening.
Part 7. Health Work.

Respectfully submitted.

P. P. CLAXTON,
Commissioner.

The SECRETARY OF THE INTERIOR.

THE PUBLIC SCHOOL SYSTEM OF MEMPHIS, TENNESSEE.

INTRODUCTION.

In April, 1919, at the request of the Board of Education of Memphis, Tenn., the United States Commissioner of Education submitted the conditions on which the Bureau of Education would make a survey of the public school system of that city. These conditions, as stated by the Commissioner of Education, follow:

(1) That the board of education, the superintendent of public schools, and all other public officers and teachers connected with the schools will give me and the persons detailed to make the survey their hearty cooperation, to the end that the survey may be made most effectively and economically.

(2) That the survey committee be permitted to find the facts as they are, and, in so far as may seem advisable, to report them as they are found.

(3) That the findings of the survey committee and such recommendations for the improvement of the schools as may seem to be desirable may be published as a bulletin of the Bureau of Education at the expense of the Federal Government for distribution, first, among the citizens of Memphis and, second, among students of education throughout the country.

(4) That the necessary expenses of the survey, including expenses for travel and subsistence for employees of the bureau detailed for this work, and the honorariums and expenses of the one or more additional persons whom it may be necessary to employ to assist in the work will be paid by the board of education. It is understood, however, that the board will not be obligated for expenses beyond $5,000.

It is my purpose to begin the survey on or before May 12 and to have the field work of it finished in June. The final report will be submitted and printed as early as possible after the 1st of July. Such portion as may be needed by the board in determining their building policy for next year will be submitted as much earlier than the 1st of July as possible.

On May 5 the commissioner was notified that all the conditions named had been agreed to. To assist him in making this study the commissioner appointed the following commission:

THE SURVEY COMMISSION.

Frank F. Bunker, *Specialist in City School Systems, Bureau of Education, director of the survey.*

Thomas Alexander, *Professor of Elementary Education, Peabody College for Teachers, Nashville, Tenn.*

William T. Bawden, *Specialist in Vocational Education, Bureau of Education.*

Hiram Byrd, *Specialist in Health Education, United States Public Health Service.*

Elmer W. Christy, *Supervisor of Industrial Education, Public Schools, Cincinnati, Ohio.*

Fletcher B. Dresslar, *Specialist in School Architecture, Sanitation, Buildings, and Equipment, Bureau of Education.*

Arthur W. Dunn, *Specialist in Civic Education, Bureau of Education.*

Will Earhart, *Supervisor of Music, Public Schools, Pittsburgh, Pa.*

Alice Barrows Fernandez, *Specialist in Social and Industrial Problems, Bureau of Education.*

Florence C. Fox, *Specialist in Primary Grade Education, Bureau of Education.*

Ada Van Stone Harris, *Director of Elementary Practice Teaching, Public Schools, Pittsburgh, Pa.*

Carrie A. Lyford, *Specialist in Home Economics, Bureau of Education.*

F. A. Merrill, *Specialist in School and Home Gardening, Bureau of Education.*

John L. Randall, *Specialist in School and Home Gardening, Bureau of Education.*

Willard S. Small, *Specialist in School Hygiene and Physical Education, Bureau of Education.*

George R. Twiss, *Professor of Secondary Education and State High School Inspector, Ohio State University.*

The field work began May 12 and was completed June 7, except that two members of the staff remained two weeks longer.

While the time for the examination of conditions was short, the schools closing for the year on June 13, nevertheless, through careful organization of the work and through frequent meetings of the staff for the discussion of every phase of the problem, definite and positive conclusions in which all concurred were quickly reached. Although the commission as a whole considered every important activity of the work of the system, each member was assigned to the particular field of his interest. The reports of the members of the commission were organized by the director of the survey and transmitted to the Commissioner of Education for his approval. The report is issued in separate parts for general circulation.

THE PARTS TO BE ISSUED.

Part 1. Chapter I. An Industrial and Social Study of Memphis.
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Part 5. Music.
Part 6. Industrial Arts, Home Economics and Gardening.
Part 7. Health Work.

This study of the Memphis schools is intended to be a study of policies and of practices; not of persons. The commission has con-

sciously avoided either praising or blaming, crediting or discrediting, individuals. The matter of placing an estimate upon the value of the services which individuals are rendering is the duty of local authorities; it falls outside the province of the survey commission and has not been attempted.

The commission desires to express its appreciation of the courtesy and consideration shown its members by citizens of Memphis, the members of the board of education, the secretary's office, the superintendent and his clerks, and the entire school corps. Without exception, all cooperated to make the investigation as thorough and as efficient as the time would permit.

A special word of appreciation is due the management of the Young Men's Christian Association for providing office rooms and equipment for the staff, without charge, and to the local company handling the Burrough's Adding Machine, which very kindly loaned one of these machines to the staff.

A summary of conclusions and recommendations will be found at the end of each chapter.

CHAPTER I. THE ELEMENTARY SCHOOLS.

CONTENTS.—I. The kindergarten. II. The primary grades—The child's interests represented in the course of study; units of interest in the child's environment; reading; a plan for phonics; spelling; language; arithmetic; geography; the problem-project attack. III. The grammar grades—history teaching; geography teaching; arithmetic teaching; the aims of arithmetic; a minimum course; the results of the Courtis test in arithmetic; results of the stone reasoning test; reading, language, and literature; results of the silent reading test; grammar in the elementary schools; teaching spelling; results of the Ayres' spelling test; music; nature study; industrial arts; vision of teaching staff; home study; examinations; time schedule; daily program; school excursions; school equipment; discipline; summary of observations and recommendations.

I. THE KINDERGARTEN.

The kindergarten is no longer an experiment in education, but is an integral of all progressive school systems in this country. According to reports received by the Bureau of Education for the year 1916, 1,228 cities have public-school kindergartens, and almost every State in the Union has permissive kindergarten legislation.

The inclusion of the kindergarten in progressive school systems is based on the modern conception of education as a process of development rather than a system of mechanical training. The impulses and instincts and interests of the young child form the basis for the course of study, rather than instruction from books which comes later in his school life. Ideas are necessary to understand books; ideas are gained through the senses, our first teachers. The kindergarten opens the child's eyes to the world about him through excursions and visits to the blacksmith's shop and observation of other workers. The child gains skill with his hands by learning to use many kinds of material. His ear is trained through songs and response to the piano in games and rhythmic activities. By means of stories and oral conversation he enlarges his stock of ideas and increases his vocabulary; and in all these kindergarten activities he is gaining power of attention, habits of obedience, practice in expression and ability to work in a group. These habits and skills are basic in all school work, and thus the kindergarten forms the transition from the home to the organized work of the school.

The highest percentage of retardation is in the first grade in schools all over the country. The natural inference is that children in the first grade have been placed too quickly in a highly organized situation. In Buffalo, N. Y., so many children had to repeat the work of the first grade, that it was found necessary to remedy this

condition, and as a result, kindergartens were opened in all elementary schools.

A study of the effect of the kindergarten in lessening the number of repeaters was made by a committee appointed in 1915, of the superintendents and school boards branch of the Michigan State Teachers' Association, reported by Berry. In 19 towns without a kindergarten the percentage of repeaters, all grades considered, is 28.7 per cent greater than in the 75 towns having kindergartens; while in the first grade, taken by itself, the table shows that the percentage of repeaters in the towns having no kindergartens exceeds the towns having the kindergarten by 69.5 per cent.

The annual report of the board of education of Louisville, Ky., 1916–17, contains a recent study made in two schools of that city:

Two studies of the problem, Does the kindergarten tend to prevent retardation? were made in two schools of the city in which there have been kindergartens for a period of years sufficient to test the progress of the child from the kindergarten through the eighth grade. These studies involved 959 children.

Salisbury school study—January, 1917.

Total number of children in school	525
Total number of children who have had kindergarten training	170
Total number of children who failed	36
Total number of children who had kindergarten training who failed	5
Total number of children who are retarded	197
Total number of children who have had kindergarten training and are retarded	29

Average difference in ages from 1-B through 8-A grade, five months.

Conclusions of Salisbury:

32 per cent of the number present attended kindergarten.
7 per cent of the number of children belonging failed.
3 per cent of the children who had kindergarten training failed.
31 per cent of the enrollment are retarded.
5 per cent of the kindergarten-trained are retarded.

Isaac Shelby school study—February, 1917.

Total number of children in school	434
Total number of children who had kindergarten training	235
Total number of children who failed	61
Total number of children who had kindergarten training who failed	12
Total number of children who are retarded	112
Total number of children who have had kindergarten training and are retarded	29

Average difference in ages from 1-B through 8-A grade, 4.6 months.

Conclusions for Isaac Shelby:

54.1 per cent of the number present attended kindergarten.
14 per cent of the number belonging failed.
5 per cent of the kindergarten children failed.
25.8 per cent of the enrollment are retarded.
12.3 per cent of the kindergarten children are retarded.

Conclusions for both studies:

The kindergarten tends to prevent retardation.

The kindergarten child is more apt to remain in school.

The kindergarten child is less liable to fail.

The kindergarten training is equal on the average to a gain of between four and five months of school life.

The foregoing studies are significant, for they indicate that the kindergarten is an important factor in reducing repetition in succeeding grades and especially in the first grades. It exercises this influence, doubtless both directly and indirectly; directly in the sense that such training tends to fit a child for quickly "finding himself" in the usual work of the school; and then indirectly by keeping children out of the first grade until they are more mature. While the kindergarten helps to solve the problem of retardation, this is not the primary reason for its becoming a part of every school system; there are values which do not lend themselves to statistical formulation. The kindergarten is concerned with the spirit and content of education, and its object is to help the child live his life to the full in the earlier stages of development which are recognized as the most important years of the child's life. The way a child begins school is of great significance, and the kindergarten has proved its value as the introduction to organized education. Every child should have the advantage of kindergarten education.

II. THE PRIMARY GRADES.

In examining the course of study in the primary schools of Memphis, during a series of observations in their classrooms, a wide variation becomes apparent in the outline of the work as printed and distributed to the teachers and the actual schoolroom practice. Almost without exception the suggestions for the lower grades are ignored and other material and procedure substituted for them.

This deviation from the course of study has not strengthened the work of the school, since the best of the original course has been lost and many of its defects given prominence. Any course of study may easily become "a mere scrap of paper" unless it is vitalized by the supervisor and the teacher through their initiative. Perhaps the most pertinent question we can ask concerning the primary schools of Memphis is, How may the primary teacher take the present course of study and connect its educational principles with the child's interests in such a way that it will become a vital force in his development rather than the basis for a series of drills in formal discipline?

THE PRIMARY CHILD'S INTERESTS REPRESENTED IN THE COURSE OF STUDY.

READING.

Units of interest from the child's environment used as a basis of script vocabulary.

Board reading based upon units of interest covering subjects taught in the (primary) grades.

Definition and explanation of difficult words by teacher, followed by practical use in sentences by pupils.

LANGUAGE.

Language is the expression of thought in spoken and written words. In the first grade children should speak their own thoughts and reproduce orally stories told by others.

The primary teacher must encourage children to talk about the things in which they are most interested, viz: Pets, toys, games, pictures, holiday, etc. If possible the object should be before the class.

Reproduction stories should be short and within the comprehension of the class.

Poems to be memorized: A more or less critical interpretation should be attempted before requiring selections to be memorized.

Dramatization: The teacher may choose from the lists of Oral Reproduction Stories selections which she wishes to have dramatized.

Reproduction stories should be short and should center around one leading idea. The teacher should tell the story first, and after an open discussion by pupils and teacher the children should tell it.

NOTE: Picture stories, nature stories, and poems fully outlined for each month of the first three years of school.

INDUSTRIAL ARTS.

Let us not lose sight of the fact that the prime object is, better education for the child—the development of a keen industrial intelligence, the awakening of interest in work, and a feeling of sympathy for the workers of the world.

During the past five years the advantage of industrial exercises as methods of education has been fully demonstrated and the Memphis schools have been well equipped with sand tables, scissors, rulers, construction charts, etc., and practically all the teachers have become quite familiar with the processes, and full of the spirit of teaching the regular studies through hand work.

NOTE: Mass drawing, paper folding, clay modeling, weaving, fully outlined for each of the first three years of school.

ARITHMETIC.

Teach orally the value and use of pint, quart, nickel, dime, inch, foot, and yard; quart, peck; day, week, month.

Measure and compare quantity and size of familiar things, using tablets, ruler, and measures.

Apply the pupil's knowledge of number to the work in industrial arts.

Make a price from the near grocery and laundry. Let the children play store; buy, sell, measure every article, and make change accurately and rapidly to the amount of $1.

MUSIC.

Soft singing is the first principle in voice training. Careful attention should be given to pure and sweet quality of tone, and all harsh tones should be avoided.

Individual singing should be encouraged in all grades. The pupils should be taught to sing with expression, clear enunciation, correct pronunciation, and the meaning of the words should be carefully explained.

GEOGRAPHY.

Believing that the attention of children is most easily kept by the conversation lesson, I have in these lessons given the scope of the work rather than the exact language to be used. Pupils like to relate their experiences. Encourage them to do so. A simple question will cause a child to think. Strive to teach him to observe and to think. Action is sure to follow.

Provide as many pictures as practicable to illustrate the text. If properly conducted, an excursion to observe nature is valuable.

NOTE.—The mountains, rivers, soil and climate, farm products, minerals, manufactures, cities, counties, history of the State and city are given in outline as subjects of study for the geography of Tennessee.

PHYSICAL EXERCISES.

Ventilate the room properly, avoid draft, appoint window-monitors. Exercising outdoors is of greater benefit to pupils than indoors; therefore move your class outdoors for exercising as often as the weather permits.

UNITS OF INTEREST IN THE CHILD'S ENVIRONMENT.

It is suggested that a survey of the child's environment by the teachers of Memphis would do much toward solving the problem of better primary schools in their community. Teachers in a general way are cognizant of these interests, but from personal knowledge they know very little. They should acquaint themselves with some, at least, of the industries and activities of their city and discover what forces lie behind the unusual prosperity and growth of Memphis. Then they should build upon these interests an up-to-date, progressive course of study, with a definite aim for every day of the school year closely connected with them. Every child in the school is associated in some way with these interests, through his home or his out-of-school life.

The centennial celebration of the founding of Memphis was in progress at the time the schools were inspected, and yet, in 160 recorded observations in the first three grades no reference was made to this event, except as a reason for a holiday or an early dismissal at the close of school. In one primary room the sand table has been utilized to represent the discovery of the Mississippi River, and while the work was well done from the standpoint of technique, a few questions brought out the fact that the work had not taken hold

of the children in a vital way. If it had been used as a basis for reading and language, for the measuring of sizes and distances, as a motive for the different modes of expression, cutting, drawing, painting, modeling, and dramatization, it would have become an educational asset both to them and to their teacher.

The teacher will find abundant material for lessons in history and geography all about the city of Memphis and its environs upon which to base her reading and language. The De Soto Mound, from which the great discoverer first viewed the Father of Waters, is one of the most interesting historical relics of which a city may well boast. The fact that it was used by the Federal Army during the Civil War as a fortress adds much to its historical value. It stands to-day, as they left it, excavated in the center, and the redoubt thrown up, a wonderful monument, both to an earlier and to a later period of American history. Starting from this milestone, what lessons might be taught the child of the history of his country, what ideals of patriotism might be inculcated, and what appreciation of the civic forces which shape and mold the destinies of our Republic might be cultivated.

The library museum has a collection of Indian relics, taken from a mound a few miles south of Memphis and presented to the city by Mrs. Mason, which is one of the finest collections of its kind in the country. The librarian is well informed regarding the various types of pottery represented by this group and can give valuable information to any teacher who desires to utilize this material in her classroom.

Some of the best American literature that has been written deals with this locality and an earlier period of Memphis history. No more vital study could be made, both from the standpoint of classic English, and from that of the story value, than the all-absorbing narratives of Tom Sawyer and Huckleberry Finn as set forth by that inimitable writer of historical fiction, Samuel L. Clemens, familiarly known as Mark Twain.

The subject of cotton is one of vital interest to the people of Memphis, and no subject could offer greater possibilities to the teacher who is searching for suggestive material to use in the primary school. The cultivation and growth of cotton and its manufacture into cotton cloth, its use and economic value to the people of the South, as well as to the whole world, might well form the basis of a series of studies in natural science, history, literature, and industrial and domestic science through all the grades of the school. The by-products of cotton, the oil and the meal and their manufacture, offer rich material for lessons in physics and industrial science in prevocational schools. The domestic products and their substitution for more expensive materials, cottolene for lard and Wesson oil for olive

oil, afford the domestic-science teacher an excellent opportunity to base her work upon the "units of interest in the child's environment."

In geography, the river which flows by the city and spreads out at the feet of the children of Memphis tells a wonderful story of running water. Building on this bank, and wearing on that, cutting a channel here, and piling up a sand bar there, it changes its course so frequently from one river bed to another and interferes so seriously with the commerce of Memphis that the Government spends millions of dollars each year throwing up defenses to hold the water to its accustomed course.

How much of this material was used in the grades in the Memphis schools? might well be asked. It is the purpose of this report to suggest its use in connection with the various subjects of study which will be reported in detail in the following pages.

1. READING IN THE PRIMARY GRADES.

Primary reading is taught throughout the first three grades in the same general way. The lessons are based upon the Haliburton Readers, the Primer, and the First and Second Readers. There were 48 recorded observations made in this subject in these grades, 31 in the first grade, 10 in the second, and 7 in the third. Only one lesson in the first grade was a development lesson from the blackboard, and this was based upon word study and not upon subject matter. In the third grade one class only was using the library books as a text in reading.

The method used in these lessons was uniform in all grades and was mechanical in the extreme. The class formed in line upon the floor and read in regular order down the line, one pupil reading a paragraph and the next pupil following, round and round the class until the selection had been completed. Whenever a child came to a word he could not pronounce, which occurred frequently in all grades, three alternatives were open to him. He was told to spell the word, or the teacher spelled it for him, or the teacher or another pupil told him what the word was. There was no use made of phonics as a means of acquiring vocabulary in any reading lesson observed.

Only four lessons, out of 63 observations in first-grade work, were given to the subject of phonics, and these were used as bases for the spelling rather than for the reading lesson. This shows how little attention this essential element in the reading process is receiving in the Memphis schools. The course of study calls for a long-drawn-out and desultory plan of phonetic training, extending through three years of instruction in reading, which, were it put into effect, would

prove ineffectual as far as any real service to the subject of reading is concerned. In the first year the consonant sounds are to be taught, in the second the long and short sounds of the vowels, and in the third year the application of the sounds learned to the pronunciation of difficult words. How futile this scheme of teaching phonics becomes, and how wholly inadequate, can readily be seen. The vowel sound in any word is its essential element, without a knowledge of which the child is powerless to build even one word of his reading lesson, yet this element is not taught until the second year. Again, in the application of phonics lies its value, and this is deferred until the third year. It is evident that the teachers of Memphis have never used a real "sound" method of phonics, which may account for the disrepute into which this valuable aid has fallen and the lack of knowledge shown by the teachers of its value.

It is urgently recommended that a definite system of phonetics be adopted in the primary schools of Memphis, and that it be followed each day by the teacher with persistent effort until the reading in the lower grades is lifted to a higher level and the pupils have acquired that independence and initiative in this subject which they now so seriously lack.

A PLAN FOR TEACHING PHONICS.

The following plan for the teaching of phonics is one of the best that has been formulated and is submitted here as a suggestive outline for the Memphis schools.

Teach the 45 sounds which are the essential elements in the English language and apply them immediately to the reading lesson. It should take a pupil three or four months to master them, and then he will be able to make out for himself any phonetic work in the early reading books.

1. Teach the sounds of single letter:

Teach the short sound of the vowel, a, in combination with the final consonants, t, p, b, d, g, m, and n, in words like cat, cap, cab, bad, bag, dam, man. Teach the short sounds of the vowels o, u, e, and i, in the same way; then the intial consonants, c, f, j, k, r, s, w, and y, in words like can, fed, hat, jug, keg, let; and the final consonants, x, ll, ss, and y, in words like ax, tell, loss, my.

2. Teach combinations of letters representing single sounds or closely blended sounds, like the following: The long sound of the vowels in words like mate, hide, note, tube, and mete. Teach the combinations ce, ge, ck, ch, in words like the following: face, cage, tack, rich, chick, shore. Teach tch, sh, in words like match, ship, cash. Teach wh, th, in words like which, thick, this. Teach ee, oo, ai, ay, ea, aw, au, oa, oi, oy, ow, as in bee, moo, sail, say, eat, caw, haul, oak, oil, boy, mow; ou, ew, ie, ei, as in out, few, pie, field.

3. Teach single sounds for blends and diphthongs: ar, er, ir, or, ur, ang, ank, ing, ink, ong, ung, unk, as in arm, her, sir, nor, fur, hang, hank, sing, sink, sung, sunk; and qu, wr, kn, as in quite, write, knee. Teach dge, all, alk, ald, alm, as in badge, fall, talk, halt, bald, calm. Teach old, olt, oll, ind, ild,

ought, aught, as in high, bold, colt, find, wild, eight, bought, caught. Teach w before the letter a, as in was, and the blends bl, cl, fl, etc., in words like black, cluck, fly; ble, as in table and similar words; ing, as in hiding; tion, as in nation; and sion, as in mansion.

THE ART OF READING.

Another phase of the reading process, and the ultimate aim of all our training, is the art of reading, the reading for knowledge and appreciation. This aim is reached by oral exercises in reading for the expression of thought and the cultivation of fluency and ease in reading, and by silent reading for the appreciation of what is read. "Everywhere have I sought peace," says the blessed Thomas à Kempis, "and have found it nowhere, save in a corner with a book," which well expresses what this term "reading for appreciation" means.

Very little of this type of reading is done in any of our schools and none of it, so far as observed, in those of Memphis. The teacher's aim for teaching reading must be changed before we can hope for better readers in our schools. It must be changed from a purely mechanical requirement to one of a social nature. From asking, "How many pages have been read?" "How many words have been mispronounced?" the pertinent inquiry must be, "What are the children getting from the books they are reading?" "Are they forming ideas as they read from the content of the reading matter?" or "Are they forming images of words, with no thought behind them?"

Too much can not be said in condemnation of this latter mode of reading. The child forms the habit of calling words, as he looks at the printed page, in these early years, which will stultify all his later reading. When he comes to read his history, his science, his literature, current events, or his daily newspaper, he must use a conscious effort to get back of the words on the page to the meaning, because he has not been trained to do this, and he will all his life be at a disadvantage in any kind of reading which he undertakes.

Why is it that the primary teacher invariably emphasizes this formal, mechanical type of reading and ignores the real business of reading? Perhaps she thinks, she hopes, that proficiency in one will carry over into the other. But this is not so. Any number of investigations and tests in this subject refute this assumption. One of these abilities does not transfer into the other. A pupil may be able to call any word in his reading book from cover to cover, and still be quite unable to understand what he is reading. Children do not read with ease and fluency; they do not understand, appreciate, and enjoy reading matter by instinct. They must be taught to acquire this skill just as they must be taught to recognize and to know words.

From the first reading lessons in the primer to the supplementary material in the third grade, the ability to read for thought should be cultivated. There are many ways in which this may be done, but it is never accomplished by emphasizing the form of the text in reading and ignoring the content. The recorded comments of the teachers in these grades as they were invariably given in the reading recitations are witness to the fact that the thought of the selection was not referred to or noticed in any way. There was no effort on the part of any teacher observed to determine what the child was thinking as he read. Her comments had to do altogether with the formal side of the process, as the following report from two of these lessons will show, since they are quite typical of all the reading, as judged from the observation of 48 classes.

The following is a verbatim report of a reading lesson in the first grade, with the Haliburton Primer as a basis:

Teacher. Now we're going to stand up and hold our book correctly. Alma read.

Alma. (*Hesitates.*)

Teacher. His—

Alma. His name is Bun. (*Hesitates.*)

Teacher. Bun has not, —

Alma. Bun has not a white spot on him.

Teacher. Bun, three Buns, go ahead.

Alma. Bun, Bun, Bun, here is an apple.

Teacher. Take it up, Elmer.

Elmer. (*Hesitates.*)

Teacher. How, —

Elmer. How white he is.

Teacher. Take it up, Ruby.

Ruby. A pin. (*Hesitates.*)

Teacher. Pan, pan. Turn over and take it up. Hold the book correctly. Jennie, take it up.

Jennie. (*Hesitates.*)

Teacher. You and Max, —

Jennie. You and Max can make it.

Another report taken at random from the observation records on reading shows how general this method has become in the primary schools.

Pupil. (*Reads.*) Jit is Grace's hen.

Teacher. (*Spells.*) J, e, t, Jet. What color is Jet? What color is Grace's hen? (*To class.*) Tell him.

Class. (*In concert.*) Jet.

Pupil. (*Hesitates.*)

Teacher. Next, see if you can read it.

Next Pupil. (*Hesitates.*)

Teacher. John had too much parade yesterday, didn't you, John?

John. (*Meekly.*) Yes'm.

Teacher. Next read.

Pupil. She is a —
Teacher. Tell him the word
Class. (*In concert.*) Mother.
Pupil. She is a mother hen.
Pupil. Grace said, "Come and see Jet's chicks."
Teacher. What did we say about that little mark over a word? Apostrophe. All say it in concert.
Class shouting. Apostrophe!

The teachers are not wholly responsible for this formal type of reading. They apologized frequently for the mechanical nature of the reading exercises by explaining that the preparation for the yearly examinations made the drills imperative, as the children were to be examined in those particular books, and must know them thoroughly. In many of the reading classes the children read too well, as judged by the ordinary standards of the schools, and investigation revealed the fact that the selection had been memorized, and that the pupils read as well with their books closed as with them open. If a child was asked to give the thought of the paragraph that had been read by another pupil, he invariably repeated the text, word for word, as it was found in the book.

UNITS OF INTEREST IN THE CHILD'S ENVIRONMENT AS A BASIS FOR READING.

Suppose a reading lesson is given to this grade that is based upon some interest in the child's environment. Take the subject of cotton, for instance. The teacher stands at the blackboard, chalk in hand, and the lesson proceeds as follows:

THE STORY OF COTTON. (MONTH OF APRIL IN TENNESSEE.)

Teacher. How many pupils in this class have been out in the country recently?
Pupils. (*Responding with hands raised or with the reply.*) I have, I went last week, etc.
Teacher. What did you see, Jennie, as you drove along the road?
Jennie. I saw a farmer plowing.
Teacher. Why was he plowing, John?
John. So he could plant his seeds.
Teacher. What kind of seeds do you think he intended to plant?
Pupil. Corn or cotton.
Teacher. Let us talk about the cotton seeds he plants in his field. How many of the class have seen cotton seeds?
Class. (*Hands raised.*)
Teacher. (*Showing a handful of cotton seeds to the class.*) Tell me where these seeds grew on the cotton plant.
Pupil. They grew in the seed pod.
Teacher. What was on the seeds before they were cleaned?
Pupil. Cotton was on the seeds.
Teacher. Why did the seeds have cotton around them?

NOTE.—Here is a point of departure for several units of lessons:

1. The teacher may take up the use of cotton to the plant and a detailed lesson on the dissemination of seeds may follow. The outline from the Committee of Ten is a good one to use in this connection—seeds that fly, seeds that sail, seeds that fall, and seeds that stick.

2. The subject of growth of cotton in the field and its cultivation, the planting, hoeing, thinning, cultivating, and finally the harvesting of the cotton crop.

3. The use of the seed, its manufacture into oil and meal, and some of the economic values of the products may be introduced here, and worked out in detail in the number classes.

4. The use of the cotton fiber, its manufacture into cotton cloth, and some of its economic values, wages in a cotton mill, etc.

5. The history of the cotton plant, its migration from India, and its prehistoric use as found in the ruins of ancient cities.

6. Geographical areas in which cotton is grown and climatic conditions under which it thrives.

The topics for these lessons are given below, and should be selected with reference to the grades in which they are given:

How Nature Plants the Cotton Seed.
  Dissemination of seeds.
How the Farmer Plants the Cotton Seed.
  Modern methods of planting cotton, development of.
Hoeing Cotton in the Field.
  Boys and girls at work in a cotton field.
Cultivating Cotton.
  Modern methods of cultivating cotton, development of.
Picking Cotton.
  The skill required in picking cotton. Why by hand?
Weighing Cotton.
  Modern methods, contrasted with primitive.
Ginning Cotton.
  Eli Whitney and the cotton gin.
Sending Cotton Away to the Mill.
  Transportation, by river and by rail.
Selling Cotton.
  Classing cotton, and cotton markets.
Cottonseed Oil.
  Its use, and method of manufacture.
Cottonseed Meal.
  Its use and its manufacture.
How My Gingham Dress is Made.
  Primitive spinner and weaver from India. Cotton mill in the United States.
Where the Cotton Plant Grows.
  Sea-island cotton and Tennessee cotton contrasted.
How the Aztecs Used Cotton.
How Martha Washington Wove Cotton at Mount Vernon.
Where De Soto Found Cotton When He Discovered the Mississippi River.

The teacher, as she develops these lessons, should use the question method, and should draw out the answers to her questions from the pupils in a spontaneous and spirited manner. Where items of information are necessary, she should supply them, in story form if possible, before she begins to formulate the sentences in the reading

lesson. Two elements should be in the teacher's mind, limited vocabulary and repetition, as she works with the class in the formation of sentences.

HOW THE FARMER PLANTS HIS COTTON SEEDS.

plows	The farmer plows the ground.
harrows	The farmer harrows the ground.
plants	The farmer plants his cotton seeds.
plants	The farmer plants his cotton seeds with a planter.
is like	The planter is like a buggy.
is drawn	The planter is drawn by a horse.
has	The planter has a seat.
sits	The farmer sits on the seat.
drives	The farmer drives the horse.
has	The planter has a box.
is full	The box is full of cotton seeds.
drop	The cotton seeds drop from the box.
drop	The cotton seeds drop onto the ground.
are planted	The cotton seeds are planted.

Phrase exercise.	*Phonic exercises.*		
The farmer	p l ow s	s ee d s	pl a n t s
the ground	c ow s	n ee d s	sl a n t s
his cotton seeds	r ow s	d ee d s	ch a n t s
with a planter	b ow s	f ee d s	p a n t s
like a buggy	m ow s	h ee d s	r a n t s
by a horse			
on the seat	l i ke	dr aw n	s i t s
from the box.	h i ke	br aw n	b i t s
onto the ground	M i ke	d aw n	f i t s
a buggy	p i ke	f aw n	h i t s
of cotton seeds.	str i ke	l aw n	l i t s

SEAT WORK IN READING IN THE PRIMARY GRADES.

All the observations of seat work in the first grade point to the fact that this form of activity is confined wholly to the building of words with letter cards. In the first school visited the pupils in the first and second division were working at their seats building letters with these cards, which were being copied from lists of 50 words on the blackboard; evidently representing a review of the term's vocabulary.

As soon as the children came to school in the morning they began this work with the letter cards. They worked, without change or rest, on this form of seat work from 8:30 to 10:30, and then were excused for recess. This gave the teacher of the room an opportunity to continue uninterruptedly the reading lessons of the lower group, and saved her the trouble of preparing material from day to

day that would be new and interesting to the pupils and progressive in its nature.

A more deadening process than this can hardly be imagined, when one considers the monotony of the daily repetition of this activity. These children had outworn, long ago, all the educative value of this exercise, and were only marking time to relieve the teacher of responsibility.

It has been reported that $2,000 was spent on this equipment of letter cards by the school board of Memphis, while the number of reading books in the classes was so limited that no class was fully supplied, and no extra copy found in any room with which to supply a visitor.

The word-building exercise, so often repeated, leads to careless habits and to defective impressions of word forms. A record was made of the finished work of a 1–1 class, which shows conclusively how faulty their visualization must have been, as they seemed to be perfectly satisfied with the results of their attempt to copy 10 words from the blackboard.

Lesson in word-building in a first-grade class.

Words.	Pupil's work.								
	I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.
stop	stoq	ssq	stop	stop	pstoq	stop	stop	stop	crisip
ball	qall	dall	qoop	pall	ball	dall	doll	ball	ayndtely
toss	toss	tos	rmt	loss	toss	toss	toss	toss	cinolYE
bounce	ownce	Lounce	ceh	Lounce	dounce	dounce	dounce	pbunce	coneLYE
catch	catch	Icat	cat	ocatch	loCatCH	cat	locatch	catch	AkTsFN
dog	og	doy	pog	gop	pog	dog			
boy	kOy	dog	poi	pog	poy	boy			
girl	girl	girl	gly	girl	girl	oirl			
run	run	run	etr	run	rim	run			
me					em				

This record of nine pupils is quite typical of all the work of the class. About one-third of the words attempted are correctly represented by the cards. Capitals were used indiscriminately, and letters were frequently inverted. This is not an exaggerated instance of the effect which a long-continued use of these cards has upon a class of children in the first grade. The fault lies with the teacher, and her failure to prepare, from day to day, a variety of activities for seat work which shall be educative and shall provide in some way for the exercise of the child's initiative.

2. SPELLING IN THE PRIMARY GRADES.

When a child has learned to pronounce all the words in his reading lesson he has mastered only part of it, as has been already pointed out. He must further acquire the ability to understand sentences. This is also true of the spelling lesson. When a child has learned to

spell a list of words he has acquired only part of the power needed to spell correctly. He must learn to spell these words in sentences, and he must be trained definitely in this latter requirement. For one of these abilities does not necessarily transfer to the other, except, as Dr. Wallen has demonstrated in his investigation of the subject, attention is given to the meaning of the word and to its use in sentences when the word lists are being taught. This is what he says: "If the column drill includes much emphasis upon meaning and considerable dictation practice, we may naturally expect that the results will transfer to composition work, and," he adds, "this is exactly what the tests showed."

This fundamental principle of teaching spelling was aptly illustrated in the case of a little girl who took the standard test in spelling in the fifth grade in the Memphis schools. Her mother said:

"Alma stood 100 in her spelling test, and only 85 in her history examination, because she misspelled so many words. She can spell her regular spelling lesson from the book perfectly, but when she comes to write a letter it is full of misspelled words of the simplest kind."

The same connection must be made here as in the reading lesson, the connection between the sight word, the spoken word, and the idea which the word represents. When a child learns to spell from visualizing the word, and the sound of the word is ignored, often no transfer is made from the sight word to the spoken word. The child depends upon the mind's eye to help him out if he is in doubt about the spelling of a word. In other words, he sees the page of the book, the list of words, the relation that one word in the list has to the position of another, if he learns his lesson in this way. Then when he comes to use those words in another setting, in a different relation one to the other, his memory fails him and he has nothing to fall back upon.

Suppose he learns to spell by the sounds of the letters in the word, then a slow pronunciation of the word suggests to him its letters and their regular order in the word. "But," some one says, "how about the phonetic words that do not follow the regular sounds in the word?" It is true, phonetic words require special drills, but they, in turn, follow definite rules which the child soon comes to recognize, and the slow pronunciation of even these words suggests some of their letters to the phonetically trained ear. And phonetic words do not need emphasizing. Most teachers give drills indiscriminately upon all words alike, those that the pupils already know and those that are phonetic, as well as those that require especial attention. What a waste of time! There are only 18 per cent of the words in the English language that are not phonetic, and those alone need to be emphasized in any spelling lesson as far as the letters in the words are concerned.

Let us insist upon the sound of the ...rs in spelling, let us be sure that back of the sight is the sound, that the one suggests the other, and that a close connection is made between the one and the other. Then let us see to it that back of both the sight and the sound in the child's mind is the idea which the word represents. Let the column drill include much emphasis upon meaning. Then the subject of spelling will be shorn of its difficulties and will become a social factor in the child's life. Then a child that can pass 100 per cent in his column test will not drop to 85 per cent in another subject because he can not spell "even the simplest words" when they are used in sentences.

3. LANGUAGE IN THE PRIMARY GRADES.

There were 15 recorded observations in language made in the primary grades, and these were of the same mechanical nature as the lessons in reading, geography, and arithmetic. Memory exercises in language in the primary grades are so unusual that they demand especial attention in this report.

One of these lessons was recorded as follows:

Teacher. Tell me the names of the months that are not abbreviated. What does it say in the language book about March and April?

Pupil. It says they can be, but its better not to.

Teacher. What two did she leave out? (*Class does not answer.*)

Teacher. You didn't listen. (*Class responds.*)

Teacher. Use a sentence and a contraction in that sentence. What is a contraction?

Pupil. I'll go home.

Teacher. If I were going to write the word "won't," how would I write the contraction? (*Pupil writes on the board.*)

Teacher. Tell me a sentence spoken to a person.

Pupil. Mary, have you your lesson?

Teacher. Where would you put the comma?

Pupil. After the word Mary.

Teacher. Give a sentence that has a person's name addressed in the middle of the sentence.

Pupil. Are you ready, Mary, to go to school?

Teacher. Where would you put the commas?

Pupil. Before and after the person's name.

Teacher. Marie, go to the board and write a sentence with a person addressed in the middle. James, put the person at the end. (*Pupil writes:* Marion, is this a fine school day?)

Teacher. Why comma? What is Marion? You may tell me one word in which you use a hyphen. What does the little rule in the language book say? What kind of word can not be divided? How many rules have you learned about capitals? I am going to ask some one to give me three, and some one else three, etc.

This lesson does not need comment, it speaks for itself. The subject of primary language has been so fully discussed in books of psychology and pedagogy, it has been taught so many years in the

normal schools of Tennessee and elsewhere that this departure from established precedent is most unusual.

Primary language exercises should be oral in their nature and should train for fluency and ease in speaking, just as oral reading should do in reading. The bases for these lessons should be stories and poems in the best literature, detailed narratives in the history of primitive peoples, and informal conversations in nature study lessons. The language exercise should be free and spontaneous as the pupil reproduces the story or talks familiarly with his teacher. Formal grammar, even of the simple type given in the Memphis schools, should be deferred until a later year.

The primary teachers of Memphis should be given a detailed outline for use in their language classes and a definite time allotment for the language period. Then they should religiously fill that period with some language exercise each day of the school year. This work requires tenacity of purpose, careful preparation, and a vivid, forceful presentation on the part of the teacher. It requires a sympathetic attitude, one that will inspire the children to give, unconsciously and simply, their own versions of the stories, poems, narratives, and experiences which they have gained from the language period. These exercises should never take the form of memory drills, requiring the pupil to repeat like a parrot the rules of written composition from a book, and to reproduce, verbatim, the printed text of a story. These are the points to be emphasized: A definite outline; a steady purpose; and a continuous program. These are the first essentials in the training of little children in the art of oral expression. Outlines for this work are offered from many sources, but the spirit of the teacher is the motive power that shall make the work effective.

4. ARITHMETIC IN THE PRIMARY GRADES.

Arithmetic is a logical subject and lends itself quite naturally to a logical development. For this reason, often, the abstract—the formal, the drill element—is overemphasized, and the second phase of the subject, its social relationship, which should receive especial attention in the primary grades, is omitted entirely. This was true in the Memphis schools. In all the primary grades the children were adding, subtracting, multiplying, and dividing in abstract computation of numbers without reference to the use that children make of number in the everyday affairs of life.

In the 40 recorded observations of arithmetic lessons in the first three grades all were of the same general type, and in every room visited the blackboard gave convincing evidence of the mechanical work being done in the subject of arithmetic. The board was filled with series after series of examples to be worked by classes in their

seats, and half of the pupils in the room were laboriously engaged in this process. For the first and second grades a series of this kind was set for a copy:

2/10	5/10	1/9	4/12	3/12	4/12		
4	7	3	2	6	3	2	2
×3	×0	×3	×6	×1	×4	×4	×2
11	12	9	11	12	9	12	8
−9	−8	−6	−8	−4	−8	−9	−3
4	7	0	1	6	2	7	
+5	+5	+9	+1	+5	+8	+4	

½ of 0= ½ of 4= ½ of 2= ½ of 8=

Count to 50:

1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9
10	10	10	10	10	10	10	10	10

Often when a class had finished writing this lesson on pads of paper, the number boxes were passed and they were required to build the series with their number cards. In this way the study of number as an oral exercise was wholly eliminated and the power that is gained from oral expression, which should be especially emphasized by teachers in these grades, was lost to the children through a disproportionate amount of written work in number.

The recitations in number were drill exercises and the aim of the teacher was to cultivate rapidity and accuracy. One of the third-grade exercises illustrates the general procedure throughout the schools, as it is given below:

Teacher. Now you're going to show Miss ——— how beautifully you can answer. Anna, is that the way to behave? We have to make a hundred, every one in this class. How many are 64 plus 8?

(*Pupil makes two attempts and fails.*)

Teacher. Hands behind you; see to your toes.

(*Pupil makes a third attempt.*)

Teacher. What did you say it was?

(*Pupil tries the fourth time and fifth time and then gives it up.*)

Teacher. Lucile, tell him.

Lucile. 64 and 8 are 72.

Teacher. 44 and 8?

Pupils. (*Answering in order, down the line.*)
44 and 8 are 52.
33 and 8 are 41, etc.

Teacher. Hands behind you.

Pupils. 27 and 11 are 38.
46 and 8 are 54.

Here the visitor asked the children how they got their answers and various methods were reported. Some counted on their fingers, as they rather shamefacedly admitted. Others added by the rule of tens, as in the example, 46 and 8 are 54. One little girl explained her process in this way: "Forty-six and 4 are 50, and 4 more are 54." None of the children were using the method taught by the teacher, namely, the addition of units and tens in examples of this kind, which discovery caused her to exclaim with some vehemence, "These children have been trained all the way up, and they ought to know it, but this class is—I won't say what!"

In marked contrast to this recitation was one observed in the first grade where a distinct effort was made by the teacher to make concrete the extremely formal and abstract material she was required to teach.

Teacher. Tell me something that makes 10.

Pupil. 9 and 1. 8 and 2. 2 and 4.

Teacher. 6 and what makes 10? 8 and what? 9 and what? Take away 7 from 10.

(*Pupil fails.*)

Teacher. If I had 9 eggs in one nest and took 1 away, how many would be left? Make me a little story about it.

If I had 10 apples and gave 1 to John how many would I have left? Tell me that in a story.

How many twos in 10? Suppose I had 10 pencils, and put 2 in a box, how many boxes would I need to hold the 10 pencils?

NOTE: Here the teacher drew on the board the boxes and the two pencils in each box as the pupils dictated to her.

Teacher. How many boxes did I have? How many pencils in each? Let's put that down as a number story. (*Writes on the board:* 5 times 2 pencils are 10 pencils.)

Suppose it were apples; or pennies: 5 times 2 apples are 10 apples. (*Draws picture and writes:* 5 times 2 pennies are 10 pennies.)

Suppose I have a bank and put 10 pennies in it. (*Draws a picture of a bank with 10 pennies in it.*) Count how many pennies I have in the bank. 1 bank and 10 pennies. 1 times 10 pennies is 10 pennies.

Teacher. (*Gives a review.*) 2 times 5 apples? 5 times 2 pencils? 10 times 1 penny? 1 times 10 pennies? 2 times 5 dollars? 10 times 1 apple? 5 times 2 boys?

These are the new things we have learned this morning: 2 times 5 is 10. 5 times 2 is 10. 10 times 1 is 10. 1 times 10 is 10.

This is not an ideal way to teach number to children of the first grade, but is perhaps the best a teacher could do working under the handicap of the requirement for her grade. As has been already pointed out on another page of this report, the course of study in arithmetic recommends an application of these principles to various social uses with which the children are already familiar. In the matter of practical application, for instance, it suggests the following:

Teach orally the value and use of pint, quart, nickel, dime, inch, foot, and yard; quart, peck; day, week, and month.

Measure and compare quantity and size of familiar things, using tables, ruler, and measures.

Apply the pupil's knowledge of number to the work in industrial arts.

Make a price list from the nearest grocery and laundry.

Let the children play store; buy, sell, measure every article, and make change rapidly and accurately to the amount of $1.

How this important phase of the subject of number in the primary grades has been allowed to drop into innocuous desuetude and a system of abstract drills on formal arithmetic has been permitted to take its place is difficult to understand. It is recommended here that the present course for the first and second grades in abstract number be carried over to the third grade, and that much of the work now done in the third be left until the fourth year.

For the help of those teachers who have asked for some definite suggestions on this subject the following outlines are given:

OUTLINE FOR NUMBER WORK IN PRIMARY GRADES.

First step.—Let the children count objects in the schoolroom, on the grounds, in the fields and woods, at home, and everywhere, until they can count a few hundred with ease, and have gained distinct and lasting number concepts. Let

them also measure and weigh till the ordinary units of measure and weight are thoroughly known. Let them find sums and differences of numbers of real objects by counting. In the same way let them divide smaller numbers into equal groups, and put the groups together again.

Do not attempt written or oral arithmetic nor the usual learning of tables until a sufficient amount of this work has been done by the children. It will be, as it so frequently is, a waste of time and breath.

Second step.—After having developed the number sense and formed definite concrete number concepts, *the next step is to learn to count by tens;* and this should be so thoroughly done that the child will ever after picture to himself numbers arranged in groups of tens, the tens into larger groups of tens, or hundreds, these into groups of ten hundreds, etc.

Third step.—Having learned to count as indicated in the first and second steps, *the next step is to learn to write figures.*

Fourth step.—Having learned to count by ones and by tens and to write numbers, and having done a large number of concrete problems in addition, subtraction, comparison, multiplication, division, and fractional parts, counting by ones of units, ones of tens, and ones of hundreds, using counters when necessary (it usually will be necessary at this stage), the children are ready to begin to learn those facts of combination and separation which will enable them to do their problems much more easily and rapidly than they have been able to do by the slow process of counting by ones. *The next step (fourth step) is to learn the 36 additive facts.* (Those facts used in addition, subtraction, and comparison.)

Fifth step.—Having mastered the 36 facts in addition, *the next step consists merely in the application of those facts in the solution of problems in addition, subtraction, and comparison, or problems of difference.* These will also give practice in counting and writing by tens, and will fix the process in mind. The problems should be as practical as possible, dealing with things and conditions familiar to the children rather than going beyond their experience or the powers of their imagination, which last is conditioned upon their experience.

Grouping these principles in school grades:

First grade—Steps one and two. Second grade—Step three. Third grade—Steps four and five.

Activities which hold number values that may be used as illustrative material for concrete work in arithmetic in primary grades are suggested as follows:

Number games. Playing store. Measuring pupil's height, weight, and strength. Records of birthdays. Records of daily temperature. Weather reports. Measuring involved in working out certain projects, like building a farm or a town on the sand table.

5. GEOGRAPHY IN THE THIRD GRADE.

In every third-grade room in the month of May in Memphis one may see on the blackboard a detailed map of the State of Tennessee. This map is drawn in outline, in all degrees of accuracy, depending upon the teacher's proficiency. The mountains, the rivers, and some of the principal cities are designated. On the board in another part of the room is a list of questions on the geography of Tennessee, which the pupils are answering in written language at their desks. These questions are uniform and give evidence of the fact that this work is directed by some one outside the corps of the grade teachers.

The recitation in geography is conducted generally by the question-and-answer method, the children having been prepared for the recitation by memorizing the questions and answers. One of these lessons is reported as follows:

Teacher. What State do you live in, Grace?
Pupil. The United States.
Teacher. Next.
Pupil. Tennessee.
Teacher. What kind of a word is Tennessee?
Pupil. It is a noun.
Teacher. What is it the name of?
Pupil. The country.
Teacher. How many States in the United States?
Pupil. Forty-eight.
Teacher. We want to find out where Tennessee is in the United States; Gertrude, locate Tennessee.
Pupil. Southeast part of Tennessee.
Teacher. Clara, locate Tennessee.
Pupil. In the southeastern part of the United States.
Teacher. Tennessee is in the southeastern part of—
Pupil. Tennessee is in the southeastern part of the United States.
Teacher. It is one of the United States. Everyone say that together.
Class (in concert). Tennessee is in the southeastern part of the United States. It is one of the United States.
Teacher. You're not keeping together.
(Class in concert repeats.)
Teacher. How long is Tennessee?
Pupil. It is 100 miles long.
Teacher. How wide is it?
Pupil. 100 miles wide.
Teacher. Then how long is it? It is longer than wide, isn't it?
Pupil. 400 miles long.
Teacher. How much longer than wide?
Pupil. It is one-fourth.
Teacher. Next.
Pupil. It is 300 miles longer.
Teacher. Class.
Class (in concert). It is four times as long as it is wide.
Teacher. Now we want to name the States that touch Tennessee. Begin.
Class (in concert). Kentucky, Virginia, North Carolina, Mississippi, Georgia, Arizona, Arkansas, Missouri.
Teacher. Name them in order, name the States north of Tennessee, etc.
(Class responds.)
Teacher. Correct. How many States north? South? East? West?
(Class responds.)
Teacher. Bound Tennessee. All together.
(Class responds.)
Teacher. What river separates Arkansas and Tennessee?
Class (in concert). Mississippi River.
Teacher. What lies east?
Class (in concert). Great Smoky Mountains.
Teacher. What separates Tennessee into three parts?

Class (in concert). Cumberland Mountains, Tennessee River separates Tennessee into three parts.

NOTE.—The teacher goes to the board and sketches in the map of Tennessee.

Teacher. What separates the middle from the west?

Class (in concert). The Tennessee River.

Teacher. What separates the east from the middle?

Class (in concert). Cumberland Mountains.

Teacher. What do you mean by natural divisions?

Class (in concert). Different parts.

Teacher. That will do for to-day.

Even a cursory reading of this report discloses the fact that no thinking was going on in this class during this recitation. It is doubtful if the children connected the river, which lay just outside the door of the schoolroom, with the answer to the question, "What river separates Arkansas and Tennessee?" The work of this river, its importance to the people of Memphis, and to the continent of America, would be topics of vital interest to all of these children. The great resources of Tennessee, why the eastern part of Tennessee differs from the middle and western part, is important for the children to know and understand. Little is gained, undoubtedly, in these first lessons in geography from lessons of this kind. It is to be questioned whether an isolated map of any State should be the basis of study in beginning geography. An erroneous impression is made which may become a permanent one later, and the pupil may always see his State when he thinks of it, as the outline drawing he has so often observed on the board. First impressions, we are told, are apt to be lasting ones, and the child should be led to think of his State as he thinks of a beautiful landscape situated in the heart of the eastern portion of his country with a wonderful diversity of mountains and plains; rich in natural products; watered by many rivers; wealthy in fertile farms and prosperous cities; these should be the impressions formed in the child's mind, and memory exercises should find no place in these early lessons in geography.

6. THE PROBLEM-PROJECT ATTACK IN TEACHING PRIMARY GRADES.

Within the recitation itself a change is imperative in the presentation of the subject matter. There should be an effort made to motivate the lessons given and to create a real demand for the activities, which shall appeal to the pupil as well as to the teacher.

This problem-project attack in teaching, so called by Dr. Kilpatrick, of Columbia, names a method which has been used in the kindergarten since its beginning. It is emphasized at present in the upper grades in the teaching of geography. Unfortunate, indeed, for the primary school that it has not been able to borrow from the kindergarten one of the best of its educational assets—the purposeful

act in reading. Imagine a class of children in our primary school reading for a purpose other than by the command of the teacher.

Yet, years ago, in the old Cook County Normal School, Col. Parker insisted that the purposeful act be the motive power in every unit of instruction. Children of every grade contributed toward the problems and helped with their solution. They recounted their experiences and these became the basis of their work in reproduction. A walk through the park, a visit to the museum, the discovery of a bird's nest, a tale of knight or hero, a piece of woodwork in the sloyd room, any or all of these supplied the motive for their reading, writing, drawing, or modeling, and created a demand for many forms of expression. They were eager to write their experiences for others to read, they delighted in reading that others might hear.

To discuss the value of this mode of attack would be superfluous here. Superficial motives have been used in the primary school almost exclusively, largely because the play of personality is more appealing to little children than to adult pupils. Numberless devices which hold a fictitious interest are used throughout the day by primary teachers to excite and hold the pupil's attention. Unfortunately, through our attempt to disguise the real problem from him we are in danger of losing his respect when he comes to a realizing sense of our duplicity.

The teachers of Memphis will be interested in an experiment in Teachers' College which demonstrates the possibility of creating a genuine demand for reading in a class of kindergarten children. Eight projects were used upon which to base the lessons. They are legitimate demands for learning to read, made upon the child by his environment in the kindergarten. The first is to mark the chairs and lockers, and the demand that every child shall know his own; the second is to tag the boxes of colored crayon; the third, the printing and reading of signs about the grounds and buildings; fourth, learning to read the titles of the pictures in the child's kindergarten book; fifth, pasting titles under the pictures in the Mother Goose book after learning to read them; sixth, reading the titles of pictures on the reflectoscope before the pictures are flashed upon the screen, and, seventh, completing the couplets of two lines of a rhyme after they have been cut apart. These projects are suggestive to the primary teacher who is seeking to teach reading by the problem-project method.

The building of the farm on the sand table is a project which has been frequently used in primary and kindergarten schools as a center of interest in the daily program. Such a study is rich in subject matter. From the art side it offers a wide field of selection. It

possesses also a broad historical background and a voluminous literary content and presents numberless opportunities for the presentation of problems in nature study.

The activities of the farm are varied and suggest many projects for the primary grades. These farm problems make an especial appeal to the child because his larger interest in life lies in the matter of feeding. A close connection is easily formed between this interest in the consumption of food and the activities which produce it, and this affords excellent material for the problem-project type of instruction.

A similar project, the building of a town on the sand table offers an opportunity for concrete lessons in civic life through a study of the problems which the child must meet in his everyday experience. The town government, the laws of conduct in public places, and many of the facts concerning drainage, sewerage, and sanitation may be impressed by means of this mode of teaching. Wholesome forms of recreation may be suggested, and ways and means pointed out by which children in a town may help to beautify and improve its appearance, and to make it a pleasant place in which to live.

The choosing of a profession, a trade, or an occupation by a child who assumes some of the responsibility of the character he represents, even in play, must lead him to appreciate the service which the older members of his community render to the people with whom they live.

Projects of this kind, the farm and the town, have a many-sided value for the pupils and teacher in the primary school. They become a power in ethical training, they motivate the work of the school along the line of altruism, they unify the interests and vitalize the activities within the schoolroom wherever they have been used. It would be quite impossible in recitations of this kind to separate the information lessons from their social bearings, and the acquisition of modes of skill from their relation to the social uses to which they may be put.

Something more than educational conventions should interest us as primary teachers. Something more than the three R's should be required of us. Accumulation of information? Yes, but closely connected with the activities of life. Acquisition of modes of skill? Yes, but always the realization of their social uses. Broader than the schoolroom and wider than the school yard must be our platform. It must include the town and the country, the home, the shop, and the store and all that makes the child's environment. Come, let us live with our children. Let us together learn to do by doing, and let us learn to live by living.

III. THE GRAMMAR GRADES.

1. THE TEACHING OF HISTORY.

History instruction in the Memphis elementary schools amounts to little more than a memorization of the textbook and is apparently for the sole purpose of passing the final examination.

Frequently the surveyor followed the child through a recitation and the child would repeat the words almost verbatim and without very much understanding. One little girl said, "I don't know what it means, but I can recite it," when called upon in the fifth grade to explain the Missouri Compromise. The textbook used in this grade contains some excellent biographical material, but some rather difficult material as well, which the teachers, as a rule, have yet failed to neglect. They say they must teach it all for the examination. However, the examination questions failed to reveal that it was as necessary as the teachers thought. Suffice it to say that children of the fifth and sixth grades can not understand institutional and legislative history, especially when it is never explained adequately. Many of the teachers both in the white and Negro schools did not understand thoroughly what they were teaching and seemed on the whole to be limited to the information contained in the text. There were a few teachers, who, disregarding the textbook to a certain extent, were really teaching the children how to read and think in history, by presenting to them problems which challenged the children's interest.

Throughout the grades the work in history failed to connect with current happenings. Would it not greatly increase the interest in history if present-day American and world history be taken into consideration to lend interpretative value to events in our past national life? During one week of the survey the Memphis Centennial was celebrated. In no class visited by the surveyors was the remotest mention made of the most interesting history of the city. History that is worth while ought to interest the child and his teacher in the present.

There seemed to be no sense of evaluation in the treatment of topics, one fact apparently being as important as the other. The questions of the teachers were intended to get as accurate a reproduction of the text as possible. The questions in many instances were not suited to the age or ability of the class.

History is a social study if it is anything. No subject in the entire course of study offers as rich opportunities for interaction of the schoolroom group as does history. Moral questions are ever present in real history and civics instruction. Such questions open up to the class wide fields for discussion and debate.

The lives of Lincoln, Edison, Jackson, Lee, and Franklin are literally alive with situations that call forth judgments by the children as to the great moral virtues which these lives portray. Questions of civic importance can not be avoided by any individual. These are the centers around which to build the history instruction.

When history instruction is limited to finishing a book or covering so many pages, one may be certain that the great, abiding historical values and civic ideals are being neglected. When civic instruction is found only in the eighth grade, one may be sure that the pupils are getting civic information rather than civic training.

What is it that the teachers in Memphis are not doing that they could do to make history and civics training a vital factor in the lives of the future citizens? The teachers need a more social and civic attitude toward public affairs. The teachers need more historical and civic information. One cannot be a great musician without knowing music. The teachers need to utilize more concrete material, current events, daily papers, magazines, local history, and civic questions of local and national interest.

THE COURSE OF STUDY.

The present course of study in history in Memphis is as follows: History stories from grades one to four; American heroes, fifth grade; Tennessee history, sixth grade, as the regular reading work of that grade; American history in the sixth and seventh grades, respectively. The provision for history in the first six grades is entirely inadequate and ought to be reorganized. History as such should receive more emphasis in the fourth grade, and the sixth grade history ought not be so difficult as it now is.

We propose the following general outline as suggestive of the basis along which the history course should be reconstructed, but it ought not be considered as a complete outline but merely indicative:

Primary Grades.—Thanksgiving Day; Christmas; birthdays of Washington, Lincoln, Lee; Flag Day; Decoration Day; stories of the local community; State celebrations; early settlers and pioneers, organized in very simple form; Columbus.

The treatment of these stories should be almost entirely oral, and correlated with the oral language work.

Fourth grade.—De Soto's march across the Southern States and his discovery of the Mississippi; De Soto Park; Robertson, the founder of Nashville; John Sevier, the first governor of Tennessee; Daniel Boone; John Smith; Ogelthorpe and founding of Georgia; Davy Crockett in Tennessee and Texas; Sam Houston, in Texas and Tennessee; La Salle on the lower Mississippi; Raleigh in the Carolinas; Bienville in Louisiana.

Fifth grade.—Lincoln's early life; Washington's early life; Columbus's discovery of America; John C. Fremont and the Rocky Mountains; Lewis and Clarke Expedition; Hudson's voyage in the Half Moon; Cortez and Pizarro; Discovery of gold in California; Rogers Clarke and Northwest Territory; Hennepin; La Salle; Champlain; additional history of Tennessee.

Throughout the fourth and fifth grades European history stories should be woven into the course in history or in the reading. The following list is suggestive: King Alfred; William Tell; Robin Hood; David; Regulus; Cincinnatus; Douglas and Bruce; Roland and others.

Sixth grade.—European Beginnings and American Colonial Period: The more important discoveries and explorations largely from a biographical point of view; Virginia plantation life; Massachusetts and growth of self-government; Dutch in New York; Peter Stuyvesant; Tennessee in the Revolutionary War; William Penn and Pennsylvania; Benjamin Franklin and Philadelphia; Montcalm and Wolfe; general survey of colonies in 1763.

During this year it is recommended that a text of European history be used covering such representative heroes and topics as: Romans and Greeks, Alexander, Cæsar, Charlemagne, Crusades, Luther, Medieval town life, Puritans, Cromwell, Charles I.

Seventh grade.—Period from Revolution to Civil War: The work of the seventh grade is to be built around important movements, but linked as closely as possible to some striking figure in American history; Samuel Adams, Patrick Henry, and events leading up to the Revolution; Declaration of Independence and Thomas Jefferson; several important campaigns in the Revolution; Washington at Valley Forge; Franklin in France; John Paul Jones and the American Navy; Greene and Marion; Treaty of Paris; Expansion of territory during the Revolution; acquisition of Kentucky, Tennessee and the Northwest Territory; Hamilton and the Constitutional Louisiana Purchase; growth of industry in America; Jackson and democracy; slavery; expansion of United States to 1860; progress of invention; Tennessee history from admission to 1860.

During the seventh and eighth years contemporary European characters and events ought to be brought in at opportune times. Among these should be: Frederick the Great; Napoleon: Lafayette; Lord Clive; French Revolution; Watt; Victoria; Cavour; Bismarck; Franco-Prussian War; Colonization of Africa and Australia; the recent war.

Eighth grade.—Modern American Period: Lee, Lincoln, and Civil War Reconstruction; Tennessee since 1860; Railroad development; electrical invention, Edison, Morse, Field, Marconi; territorial

growth since 1860; America's foreign policy; the tariff; the Great War and America's Policy under Wilson.

The civics work should be very closely correlated with the history throughout the school, but particularly so in the eighth grade, inasmuch as civics has become more of a formal subject by that time. (See chapter on Civic Education.)

As indicated in this outline, history in the elementary school must remain largely biographical, even though in the upper grades a chronology must be more or less developed and certain phases of institutional and developmental history must be made clear.

A textbook built on the biographical plan, supplemented by a large variety of supplementary historical readers, is essential in the fourth and fifth grades. In the sixth grade an elementary American history arranged in somewhat a chronological order, together with a text on European stories, is desirable. In the seventh grade and eight grade an advanced text, written from an unprejudiced point of view and organized on the basis of large topics, should be available. A Tennessee history text ought to be in the hands of the children from the sixth through the eighth grade. All of the history of Tennessee ought not be packed into one year.

Last, but probably most important of all, current history and events should be taught every day in every grade from the fourth up, if not earlier.

By reading the paragraphs on the geography course of study one may see the parallelism between the topics in history and geography running through grades three to six and to a large extent through the seventh and eighth. This close correlation makes not only for a better understanding of each subject, but also for a great saving of time on the part of the children and teacher.

2. THE TEACHING OF GEOGRAPHY.

With one or two exceptions all the lessons observed in geography were review lessons in preparation for the final examinations. They were either reviews of definite pages in the textbook or a study of final examination questions given in preceding years.

Name and locate a large city on Thames River.

London is located on the Thames River. It is the largest city in the world and is noted for its historical buildings. It has many manufactures, a fine harbor, and is noted for commerce.

Name and locate the capital of France.

Paris is the capital of France. It has a good harbor. It has new fashions, laces, silk, jewelry, historic buildings. The tomb of Lafayette is there. It is in the northwestern part of France.

What is Spain noted for?

Spain is noted for export of olive oil, grapes, wine, and cork.

The above questions and answers were given in a class in geography.

First of all the answers accepted indicate that the child's information on the points raised is meager and uninteresting and point conclusively to the fact that the child's chief aim has been to master the words of the textbook, which is itself most scant in vital, rich geographical material. The impression is gained that the class of facts that the child is required to retain is of very little value. A child soon reaches the point when he can recite on such a question as, "For what is Paris noted?" without really knowing anything at all about it, for almost any great city has manufactures, famous buildings, good commerce, lace, and so on. A study of Spain or some industries of Spain ought to result in a greater fund of knowledge than merely the statement that "Spain is noted for olive oil, grapes, wine, and cork," and a few other such stereotyped sentences.

Although somewhat handicapped in making valid conclusions by the fact that in a month of visiting we saw little other than review, the results shown by the pupils' responses show the method employed in teaching is largely memorization of the textbook material. We found by listening to the children with the textbook before us that the information given back by them was very similar and sometimes identical to the words of the book. This would not be entirely bad, if the book were interesting and rich in information.

A STENOGRAPHIC LESSON IN GEOGRAPHY.

The following lesson, given in a seventh grade, was stenographically recorded for purposes of illustration:

Teacher. Name the countries.
Pupil. China and India.
Teacher. We are speaking of Europe.
Pupil. Italy, France and Germany, between Spain and in Switzerland.
Teacher. Any other country?
Pupil. Russia, Spain, and Portugal.
Teacher. Where do we find another highland that compares next in height to this highland?
Pupil. Next to the Alpine?
Teacher. Yes. The range itself?
Pupil. The Pyrenees.
Teacher. Locate it.
Pupil. The Pyrenees are in the northern part of Spain. No; they are in the eastern part of France. In the southern part of France.
Teacher. They help to form part of a boundary?
Pupil. Yes; boundary between Spain and France.
Teacher. We should expect then that they would be an inconvenience to those two countries, forming a boundary between them. In what way would it be an inconvenience?
Pupil. They couldn't get from one country to the other.

Teacher. That would be especially inconvenient for building railroads?

Pupil. Yes.

Teacher. How have they avoided this inconvenience?

Pupil. Digging tunnels.

Teacher. They didn't have to do that everywhere, did they?

Pupil. No; they go by water.

Teacher. Yes; but can you explain how they get around the mountains? Can anyone explain?

Pupil. They go around. There is a lowland where the railroads can be built.

Teacher. Where have they another highland?

Pupil. The Ural Mountains.

Teacher. What do you know about the height of those mountains?

Pupil. You mean how high they are?

Teacher. Yes. I don't mean the number of feet but as compared with other highlands.

Pupil. They are not so high.

Teacher. They amount to little more than hills?

Pupil. Yes.

Teacher. Have they any valuable mineral products?

Pupil. They have gold. They are very rich in gold.

Teacher. Then we have other highlands farther toward the north. What are they? You are likely to forget those because they are separated from the mainland.

Pupil. The northern part—I mean the western part of Sweden, the Norway and Sweden peninsula.

Teacher. They are liable to be overlooked because they are separated from the mainland. How are they separated?

Pupil. By the North Sea.

Teacher. It separates what countries? It separates Norway from what country?

Pupil. From England.

Teacher. But these are separated from the mainland of Europe by what sea?

Pupil. Caspian Sea. No, the Black Sea. The Baltic Sea, and Gulf of Bothnia.

Teacher. We find that these mountains are especially valuable for what product?

Pupil. I don't know.

Teacher. Can you tell me, John?

Pupil. No. I don't know.

Teacher. Does any one know? Not a mineral product.

Pupil. They are especially valuable for lumber.

Teacher. Yes, the Norway pines are so familiar to us that they have gotten into literature. When a poet wants to speak of a man as very large or powerful or tall, he says "As tall as a Norwegian pine." A little farther to the north of the Balkan States we find a range of mountains that shut off a plain. What is that?

Pupil. The Carpathian Mountains.

Teacher. What is the plain they partly inclose?

Pupil. The plain of Hungary.

Teacher. This plain is inclosed or bordered by what river?

Pupil. It is that river in Austria-Hungary—the Danube.

Teacher. As this river comes from these mountains—the Carpathian Mountains—we would expect some sort of natural scenery here. Can you describe it?

Pupil. Natural scenery?

Teacher. Yes, where the river winds its way through the mountains.

Pupil. It has many pretty waterfalls.

Teacher. What is it called where a river goes through?

Pupil. A pass. Where the river goes through these mountains it makes pretty colors. That might be natural scenery.

Teacher. It has a name of its own. Nobody can give it?

Pupil. A pass or a canyon.

Teacher. Let's see if you can find out. Look it up and let's see how many will remember and tell us to-morrow. This river flows into what sea?

Pupil. Into the Caspian Sea.

Teacher. No.

Pupil. The Black Sea.

Teacher. Describe its entrance?

Pupil. How do you mean? Tell how it goes, in the direction it runs?

Teacher. Well, you can tell that, but that wasn't what I wanted.

Pupil. It runs sort of southeast and turns and goes west. I don't know what you mean?

Teacher. Can you help him, Maud?

Pupil. It flows——

Teacher. What is meant by the "delta" of the river?

Pupil. It is sediment.

Teacher. Couldn't you have told me that without so many questions then?

Pupil. I thought you meant the way it went in. If a river goes real fast it takes the sediment down, and if it slows up it drops it.

Teacher. The river stretches out in little branches and the mountain scenery in the Alpine highland compared with our Rocky Mountains how?

Pupil. It is not as beautiful.

Teacher. Why do you say that?

Pupil. Because it is not in America.

Teacher. People who have been there and who have been to the Rockies say we have just as imposing scenes in the Rocky Mountains as they have in Europe, then why do we want to go to the Alps?

Pupil. Because it is historical; where Napoleon carried his army; and on account of the history and because of the old things that have been there longer.

Teacher. It is more closely associated with history, is that it?

Pupil. Yes.

Teacher. We find another range of mountains farther south; what are they?

Pupil. The Caucasus. In the southeastern part of Russia, and separating Russia from Asia Minor.

Teacher. Can you name a high peak there?

Pupil. Mt. Everest.

Teacher. How does it compare with the Alps?

Pupil. It is the highest peak in the Caucasus. It is higher than any other in Europe.

Teacher. We haven't been so much concerned until lately about Russia, have we, and the countries in Western Asia? Can you describe the surface of the peninsula of Italy? What mountains have we there?

Pupil. The Apennines, they come down the center, and there are river valleys. It is kind of rough. The Apennines are the principal mountains.

Teacher. Into what sea does this peninsula extend?

Pupil. The Mediterranean.

Teacher. We find it inclosing what little sea?

Pupil. The Adriatic.

Teacher. We find an interesting peculiarity in these mountains in Italy, different from the other mountains of Europe. What is it? They have some peaks that are familiar as what?

Pupil. Volcanoes.

Teacher. Can you name one or two of these volcanoes? I know you can name one.

Pupil. Vesuvius.

Teacher. It is near what city?

Pupil. Near Rome.

Teacher. No.

Pupil. Near Naples.

Teacher. Can you tell us about the history of Vesuvius?

Pupil. A long time ago it had an eruption and buried several cities, and during 1906 it had another eruption and buried some more. This lava was so deep that they couldn't dig the cities up again so they built new cities on top of them.

Teacher. Since 1906?

Pupil. No; after these other cities had been buried.

Teacher. Can you tell us about when the other eruption was?

Pupil. It was before Christ. No; it was a little bit after.

Teacher. It was 79 A. D. Can you give us the name of the cities?

Pupil. No.

Teacher. Maud?

Pupil. P-o-m-p-e-double-i and Herculaneum.

Teacher. These cities were buried for so long that they built other cities over them. Why did they want to dig them up?

Pupil. There were fine statues there and they wanted to keep them.

Teacher. It was not so much the value of the things themselves was it? It was the historical value, wasn't it?

Pupil. Yes.

Teacher. Just off the foot of Italy there are other volcanoes. Can you name them?

Pupil. One of the volcanoes is Popocatepetl.

Teacher. No; you have that mixed with South America. How does Vesuvius compare in height with Popocatepetl? Popocatepetl is higher, isn't it? How much higher? Can't you give the figures?

Pupil. No.

Teacher. It is about twice as high. . . . Name the two most important rivers on this peninsula?

Pupil. The Po and the Tiber.

Teacher. We have a city that is just off the coast of Italy—that is, out in the sea. What is that?

Pupil. Venice.

Teacher. We have a city across the Adriatic that is receiving a great deal of notice now. What is that city?

Pupil. Fiume.

Teacher. Can you describe the surface of the Spanish Peninsula—that includes also what other country?

Pupil. Portugal.

Teacher. Describe the surface?

Pupil. It is very rough in the eastern and northern part.

Teacher. In what direction do the rivers flow, most of them? Into what waters?

Pupil. Into the Mediterranean. Some of them flow into the Bay of Biscay.

Teacher. In what direction is that?

Pupil. North.

Teacher. Most of the rivers flow into the Mediterranean. Now tell us about the slope.

Pupil. It slopes southeast.

Teacher. Describe the climate of this peninsula, John.

Pupil. It is high.

Teacher. Describe the climate.

Pupil. Isn't it warm, or more like our Southern States? Many people go there to visit because it is so warm.

Teacher. Yes; it is pleasant there most of the year. What do you know about the rainfall?

Pupil. It is plentiful. No; it is not either.

Teacher. It is rather scanty. We find them growing what things?

Pupil. Grapes, olives, some grains.

Teacher. Most of these countries grow grain to live on, don't they?

Pupil. Yes.

Teacher. At the tip of this peninsula we find this almost adjoining what continent?

Pupil. Africa.

Teacher. What is the point that is nearest to Africa?

Pupil. The Strait of Gibraltar.

Teacher. A strait is not a point of land is it?

Pupil. No; it is a body of water.

Teacher. This strait connects what waters?

Pupil. The Atlantic.

Teacher. This point of land is what?

Pupil. The rock of Gibraltar.

Teacher. We would expect it to belong to what nation?

Pupil. To Spain; but it don't.

Teacher. But it does belong to England?

Pupil. Yes; England beat Spain all to pieces and took it away from them.

Teacher. The lowlands of Europe extend over what countries, Ella? We have spoken of only one great plain.

Pupil. I don't know. The plains of Hungary.

Teacher. Most of the plains of Europe are where?

Pupil. In Austro-Hungary and Russia and extending across Wales.

Teacher. John?

Pupil. Across eastern France and eastern Germany.

Teacher. Northern Germany?

Pupil. Yes.

Teacher. What about the little country adjoining France and Germany?

Pupil. Belgium.

Teacher. What about that surface? Are there plains?

Pupil. Yes.

COMMENTS ON THIS TYPE OF TEACHING.

We have introduced this stenographic lesson to show where the emphasis in teaching in geography is placed. We have introduced it to show the type of review that takes up two months of every year.

This lesson illustrates the character of the course of study. We merely wish to ask a series of questions. Are these facts interesting? Are they worth while? Have most of these facts any bearing upon the needs and interests of the child? Is this sort of a result indicative of real teaching? We must answer negatively.

There are some few teachers, however, who develop the geographical principles inductively and supplement the text by outside material. The majority, however, will say, "We haven't time for anything but getting ready for the examination."

The trouble is not alone in the textbook. Very few of the teachers have had training in geography of such a character as to make good geography teaching possible. Since this is the case many of them stick closely to the text for the reason that there is very little else for them to do.

Many teachers subscribe or have copies of the National Geographic Magazine and other good geographical material in the way of pictures, post cards, maps, while some schools have sets of stereographic views. On the whole, the teachers have not sufficient equipment to do good geography work. We have in mind several excellent teachers of geography who in spite of all they can do, have only the most meager equipment. The board of education should supply in some way better globes, maps, industrial exhibits, stereopticons, stereographs, moving pictures, and supplementary readers in quantities sufficiently large as to allow each child in a room to have a book. There should be geographical readers and reference books in every school library.

There is much material which each school can and ought to collect for itself. There might be in each school-supply room a cabinet with boxes, one for each big and important topic in geography, where all information, cards, pictures, bulletins, clippings, and the like might be assembled. Teachers and pupils alike can collect this material for any and all sources. Take, for example, a topic like "Our national parks," a subject which affords rich opportunity for development of geographical principles. There can be obtained in railroad offices and from the United States Government a vast amount of authoritative information in the form of bulletins and guides. There are many other such opportunities.

There seemed to be in the geography teaching as a whole too little correlation with the home community and the events of the day, which would serve to vitalize the work. A child will not work actively or think intelligently if he is not interested. It did not seem that the children in the geography classes were really anxious or desirous of learning the facts. The greatest fault in the teaching of the subject was the want of a real motive. If the teachers were only

to seize on the rich mine of geographical material in Memphis and surrounding country, the geographical changes and topics of the day, the attitude of the children would be revolutionized, to say nothing of the richer knowledge that would accrue.

In view of the fact that there is such a rich field for geographical study, physical, commercial, and industrial in Memphis, it ought to be possible for the teachers by means of frequent, well-planned excursions to acquaint the children with their immediate environment. These excursions do not necessarily need to serve geography alone, but at the same time furnish ideas for the study of history and civics, or elementary science. The composition work can also be allowed to grow out of them. A school schedule should be flexible enough to permit the teachers to thus vitalize their school activities. It is necessary to caution against excursions without plan or intention.

Good geography instruction not only furnishes a child with a mass of useful and interesting facts, but can afford one of the best opportunities possible for constructive thinking on the part of the child. If geography is approached from the inductive point of view, it will not be long before many children will acquire an inquiring attitude of mind toward the subject, and will be able soon to think rather well about ordinary observations.

There are several pamphlets which would be of great service to the schools—"Memphis, its Advantages, Resources, Opportunities," issued by the chamber of commerce, and "The call of the alluvial empire," by Southern Alluvial Land Association. These bulletins deal with the location of Memphis, its raw materials, transportation facilities, contributory territory, labor, factories, water supply, banks, streets, lumber, cotton and cottonseed oil, furniture, flour, and many other topics.

A number of times it was observed that children were reciting geography without a map in the room or without reference to the maps in their books when it was really necessary to have a map before them. The teachers, on the whole, apparently do not use map sketching as means of illustrating the work. The children as well ought to have more training in sketching maps to illustrate their recitations. Many teachers require map drawing and making of product and relief maps. Just how this is developed could not be observed, but the results were good.

As a general thing, there is no organic relationship between the course of study in geography and that in history. On very few occasions was there observed any historical setting or fact attached to the study of a place or a country. This lack of correlation is just as evident in history as in geography. This condition of affairs as a general practice is inexcusable.

In conclusion, the chief objection to geography in Memphis now is that it is chiefly a memorization of unimportant facts, whereas it ought to be an active inquiry into rich geographical topics, both close at home and elsewhere.

THE COURSE OF STUDY IN GEOGRAPHY.

The present course of study in Memphis is based largely upon the material found in the Frye Geography Series. The home geography of the third grade is based upon a text prepared by local teachers. The course is organized as follows:

Third grade: Home geography.
Fourth grade: Introduction to geographical forms and North America.
Fifth grade: United States (first semester); Europe and Asia (second semester).
Sixth grade: United States.
Seventh grade: Pacific States, Canada, Mexico, South America, (first semester; Europe, Asia (second semester).
Eighth grade: Europe, Africa, Australia (first semester); physical and commercial geography (second semester).

It can be said safely that the aim of the teachers is to teach the content of the textbook with little effort to add supplementary material. The final examination is limited strictly to the subject matter of the text, and for this reason little attempt in general is made to emphasize supplementary material.

The thought side of geography is neglected. The children are expected to memorize what the book gives and are not required ordinarily to go further than that. The subject matter of the course bears little relationship to the interests and needs of the child. Geography is a mass of dry, disconnected, unrelated facts.

SUGGESTIONS FOR A NEW COURSE.

Home geography.—The majority of good geography teachers of to-day recognize that home geography in the third and fourth grades well organized, and well taught forms the foundation of all later work. The units selected for study should be selected upon a basis of geographical soundness; each unit should have direct geographical bearing. At the same time these units should be so chosen as to permit of close correlation with local history. History and home geography should be carried on hand in hand. It is also advisable to begin in an elementary way the study of the world as a whole by means of a globe and maps.

The subject matter, if possible, ought to be based entirely upon the direct observation and experience of the children, excursions being used when necessary.

We are suggesting a list of topics that the schools in Memphis could treat with ease and with great profit. The principles upon which these topics are selected are that in general certain social units and earth units are necessary to a complete understanding of geography in its broad sense as the relation of two great subjects—earth and man.

A visit to the city market; visit the booths for fish, eggs, butter, strawberries, meats. Find out how these products are brought to the market, prices, sanitary conditions, delivery, advantages of a market.

A visit to the Mississippi River; what the boats bring; the wharves; the rise and fall of the river; the levee; the boats; the general effect of the water upon the banks, the bluffs.

A visit to Front Street, a bakery, flour mill, a garden, a hardware store, the school vicinity, city hall, the city parks, the post office, meat market, a house in the process of construction, lumber yard.

There are any number of topics that could be cited, but we have given enough to indicate the lines upon which the course should be built. A textbook is not at all necessary if the teachers are thoroughly alive to the advantages which Memphis offers for this sort of work.

Intermediate and upper grade geography.—A course in geography which does not make clear to the child the fundamental principles in geography can scarcely be called geography. By the time the child has finished the elementary school he should have clear ideas upon the earth as a globe—form, size, motion, latitude, longitude, seasons, zones, day and night, climate, temperature, rainfall, winds, waves, tides, ocean currents, plains, plateaus, mountains, rivers, glaciers, volcanoes, and the like. This can not be gotten by a mere memorization of the first few pages of the ordinary geography, where such material is customarily presented. The approach should be made more from the social or human aspects of geography, although this does not need to be an invariable rule.

We are, therefore, suggesting certain large units of study which involve not only the man's relationship to the earth, but which bring out by means of application the physical principles of geography as well. The outline offered permits of close correlation with the course suggested in history and also with the suggestions for elementary science and nature study.

Fourth grade.—The Mississippi River; cotton raising, sugar plantation, fruit raising in Florida and Georgia, oil wells in Oklahoma or Texas, granite and marble in Tennessee, tobacco, coal mining in Kentucky and West Virginia, yellow-pine industry in Memphis, water power in Southern States.

Fifth grade.—Wheat raising in Central States, lumbering in Maine or Oregon, national parks (Yellowstone or Yosemite), irrigation in the West, corn, steel mills around Pittsburgh, the Great Lakes, forest preserves, gold mining in California, Chicago as a market.

Sixth and seventh grades.—The Panama Canal; the island of Cuba; coffee raising in Brazil; rubber industry and automobile trade; cattle raising in Argentina; silver mining in Peru; Alaska; transcontinental railways of Canada; hunting in Canada; fishing in Newfoundland; North and South America as continents; shipbuilding in Scotland; Alps, the playground of Europe; grape production in Italy; cork industry in Spain; the Danube; Rome, capital of the world; silk culture in France; canal systems of France and Germany; London as a historic city; the plains of Russia; the Trans-Siberian Railway; rug manufacture in southwestern Asia; Constantinople; the Nile River; diamond mining in South Africa; the Sahara; handwork among the Japanese; tea culture in China; the Himalaya; sheep industry in Australia.

Eighth grade.—A good, vigorous course in physical, commercial, and economic geography to be a summarization and extension of the work of previous years. For example, the cotton industry could be studied intensively, with stress laid upon the various phases of geography involved.

The above list of suggested topics is not meant to be exclusive but merely indicative of the point of approach that we believe necessary to give children a thorough, worth while, interesting body of knowledge in geography which will be of immediate and future value to them.

The course is similar in point of attack to the course in history and to a certain extent parallels it. Teachers often ask this question: "Does such a course cover the ground?" "Will it teach place geography? Will it teach weather, river systems, and the like?" We answer most decidedly in the affirmative. We wish to cite merely one example. A sixth grade under our observation this year took up the study of the grape industry in the Mediterranean countries as one of the chief sources of livelihood of the peoples in those countries. Here are some of the questions they had to answer: What is the method of propagating grapes in Italy and France? Is it the same here in Tennessee? How is it done in California? In New York? What kind of climate does the industry require? How are grapes cultivated? What are the products made from grapes? How are they shipped? What is the value of the crop? All the way through the study comparisons were made between

Italy and America with respect to the industry. Rivers, cities, oceans, districts, States, weather, climates, wind, rainfall, hail, and snow all had to be discussed in order to arrive at the desired aim and always discussed with some object in mind, not a mere memorization of facts and a routine answering of questions in the text.

3. THE TEACHING OF ARITHMETIC.

THE PRESENT COURSE OF STUDY.

The course of study in arithmetic in the Memphis schools is virtually the Stone-Millis Arithmetic series of texts, with a few eliminations. But for these few exceptions the children are required to solve practically every problem and example in the books. The method of presentation is largely that given by the text.

The course as now followed is good enough, perhaps, as far as arithmetical principles are concerned, but the problem material is mostly a thing apart from the child's experience and activities. A child can not think actively or well about situations which he does not understand. We saw an eighth-grade girl solving a problem of this nature: "A derrick 45 feet in height is held in place by three steel cables reaching from the top of the derrick to stakes in the ground 38 feet from the base of the derrick. Allowing 10 feet of cable for fastening, how much steel cable is required?" The arithmetical principles involved were good, but the girl had no conception of a derrick. The teacher could have made it clear, or she could have developed the same principle in connection with some situation familiar or useful to the girl.

There seems to be an absolute refusal of the teacher to use problems from the daily lives of the children, even when the problems would illustrate the arithmetical principles involved. Because vital connections are not made, children rarely ever see the real value of many number processes. We make suggestions below with reference to the vitalization of the problem material.

The outstanding feature of the course, as now given, is the relatively small amount of oral arithmetic. Inasmuch as a vast portion of a person's number experiences are not written, it is very evident that oral arithmetic ought to have a much more prominent place in the course than is now the case. To increase the oral work would mean an enormous saving of time and an important increase in the child's everyday efficiency.

THE AIMS OF THE STUDY OF ARITHMETIC.

1. To give the pupils the knowledge of those arithmetical facts and fundamental processes necessary to interpret and solve the

problems met by every person in doing the world's work and to develop skill in using them.

2. To develop in the child power to reason accurately in the face of as complicated data as will be likely to occur in the problems met in everyday life.

3. To develop skill, rapidity, and accuracy in the use of numbers required in the ordinary business transactions and practical affairs of life.

4. To satisfy the child's felt need for a knowledge of the laws of number and to aid him in interpreting the quantitative relations of life.

Having briefly stated the general aims to be attained by the course of study in arithmetic, it seems desirable to sketch in a brief way a minimal course without which a child can not meet the quantitative situations of his environment or successfully handle the arithmetical tasks which confront almost everyone in the daily routine of life.

A MINIMUM COURSE SUGGESTED.

A minimum course should cover the following topics:

1. The fundamental operations with whole numbers and fractions, both common and decimal. The denominators of common fractions limited to those found in usual business practice. Decimals limited to three or four places. Relationships of common to decimal fractions.

2. Problems: Only those of common occurrence in the lives of every individual. (*a*) To find the fractional part of a number. (*b*) To find what fractional part one number is of another. (*c*) The same as (*a*) and (*b*) with reference to decimal fractions. Percentage as involved in these two types of problems. (*d*) To find the cost or amount of any number of articles, given the cost or value of one, three, a dozen, or a hundred. (*e*) Simple ratio and proportions.

3. Percentage and its applications. (*a*) The first and second cases of percentage, as indicated in 2 (*a*) and (*b*). (*b*) Common business applications of percentage; interest at ordinary rates for year and month, and for usual periods of days; commission and brokerage, commercial discount; profit and loss; taxes and insurance, first and second cases only of percentage applied to these problems.

4. Business forms; bills, receipts, drafts, checks, money orders, deposit slips, bank books, express and freight bills, parcel post, postal savings, and the like.

5. Denominate numbers involving problems of actual conditions. (*a*) Linear measure: In foot, yard, rod, mile, kilometer, meter. (*b*)

Square measure: Square inch, foot, yard, rod, mile; acres, section, township. (*c*) Cubic measure: Cubic inches, feet, yards. (*d*) Dry measure: Pint, quart, gallon, peck, bushel, crate, barrel, hogshead, and any other local measures. (*e*) Liquid measure: Half-pint, pint, quart, gallon, barrel and any other local measures. (*f*) Weight measure: Ounce, pound, ton, hundredweight, bale, and other local weights. (*g*) Time measure: Second, minute, hour, day, week, month year, decade, century. (*h*) Money: Cents, dollars, pounds, francs. (*i*) Mensuration: Computation of areas of triangles and common rectangular figures. Volume of common rectangular solids. (*j*) Miscellaneous: The meaning of the equation, square root.

The above course is only the minimum, but we feel that every essential arithmetical need of the ordinary individual can be met by it if the outline be properly interpreted. It is possible to give other topics and more difficult problem material in those topics mentioned to the more gifted children.

It remains for those who make the course of study in arithmetic to allot the parts of the above outline to the various grades, according to the needs and ability of the children involved. The above outline is not a course of study. It is merely a suggestion for a guide in the formulation of a course of study. The course of study itself must indicate with exactness what topics are to be given in each grade; the intensity with which a topic is to be developed; the standards of efficiency expected each year and other similar questions.

PROBLEMS BASED ON FAMILIAR SITUATIONS NEEDED.

It was our feeling that the problem material of the arithmetic course in Memphis is dead as far as the child's interest was concerned. We have, therefore, suggested certain activities which contain vital arithmetical stuff which will not only serve to motivate the arithmetic itself but other subjects, such as civics, geography, and manual arts as well.

Type problems of familiar situations should be suggested to the child for the formulation of problems, the solution of which will appeal to his interest and create a desire for further study of the mathematical side of his daily contacts. In the arithmetical work of all grades the larger part of the period should be devoted to the application of the principles of arithmetic in oral and written concrete problems. Children fail oftener in the interpretations of mathematical situations than they do in the manipulations of abstract numbers. Not more than 25 per cent of the period should be devoted to abstract drill which should be short, snappy and varied.

The following topics offer a suggestion list upon which type problems may be formulated:

The child and his games.
The child and his play.
Purchasing articles at the store and in marketing.
Cost of recreation trips to the parks, moving pictures, theaters, lectures, and other public amusements.
Computing a child's earnings and savings in running errands, selling papers, doing work at home and for neighbors, etc.
The cost of his clothing.
Family budget, income, cost of family marketing, other expenses such as clothing, house furnishings, fuel, rent, fire and life insurance, telephone, light, car fare, church, contributions to charity, etc.
Computing individual and class scholarship records.
Computing cost of schoolroom supplies, janitor's supplies, and other expenses of the school plant—coal, light, labor, etc.
Keeping of the family accounts—payment of bills, family checking account, family bank savings account, deposit slips, interest.
Economy of cash purchases and in large amounts. How much can be saved.
Various tradesmen's expenses.
Measuring a garden; expenses connected with gardening; market value of the products of gardening; net profits.
Cost of keeping a horse and buggy; the upkeep of an automobile.
Expenses of a vacation trip.
Telephone and telegraph rates.
Water rates.
Taxes on home and public property.
Study of the postal system—stamps, special delivery, registered mail, money order, parcel post, postal savings, etc.
Thrift Stamps, War Savings Stamps, Liberty Bonds (interest on same).
Cost of public improvements, street pavements, lighting, etc.
Distances by trolley, steamship and by rail between different points with comparisons of rates and schedules.
City and United States Government expenses. Different forms of revenue.
Problems in manual arts.
Gardening.
Trades of community.
Menus.

THE COURTIS TEST TO SHOW SPEED AND ACCURACY.

The most widely used test for judging of the efficiency of schools and classes in the operations of addition, subtraction, multiplication, and division with integers is that devised by Dr. S. A. Courtis, of Detroit. By testing thousands of children of all grades and in all types of schools throughout the country, he has formulated a standard of attainment in both speed and accuracy by which other schools can be rated.

The series consists of four tests printed on a four-page folder, one test to each page. Twenty-four examples of equal difficulty are

given in each. A time limit is set for each test, 8 minutes for the addition test, 4 minutes for the subtraction, 6 minutes for the multiplication, and 8 minutes for the division test. Within these respective time limits each pupil tested is required to solve as many examples as he can. The papers are then marked for the number attempted (speed) and for the number which are correct (accuracy). In order that all tests may be standardized, no credit is given for examples incomplete or partially correct. A full description of this test and its use can be found in Monroe, DeVoss and Kelly, "Educational Tests and Measurements," 1917. The following are sample exercises of the four tests, the remaining examples of each are of equal difficulty:

Test No. 1.—Addition (8 minutes).

927	297	136	486	384	176	277	837
379	025	340	765	477	783	445	882
756	473	988	524	881	697	682	959
837	083	386	140	266	200	594	603
924	315	353	812	679	366	481	118
110	661	904	466	241	851	778	781
854	794	547	355	796	535	849	756
965	177	192	834	850	323	157	222
344	124	439	567	[illegible]	229	953	525

Test No. 2.—Subtraction (4 minutes).

115364741	67298125	92057352	113380036
80195261	29346861	82689037	42556840

Test No. 3.—Multiplication (6 minutes).

3876	0245	7368	2594	0495
93	86	74	25	19

Test No. 4.—Division (8 minutes).

87)14467 86)60372 94)67774 25)9750

This series of tests was given to pupils of the fifth, sixth, seventh, and eighth grades of the Bruce, Hill, Lauderdale, Merrill, Riverside, Roselle (white schools); and Grant, Kortrecht Grammar, and La Rose (colored schools). The tests were given to 1,577 white children and 500 Negro children, 2,077 children in all. The schools selected were generally distributed throughout the city.

The rate of speed.

ADDITION ATTEMPTS (TIME, EIGHT MINUTES).

Grades.	Total papers.	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Median.	Standard median.
White:																												
VIII	268		1		3	9	12	26	33	50	37	41	22	7	11	7	3	4	2								9.0	11.6
VII	363			2	4	12	37	54	60	77	47	29	25	7	3	3	2				1						8.2	10.9
VI	413			1	5	34	54	70	78	68	46	26	17	8	3	2	1										7.6	9.8
V	533			12	29	78	119	110	70	50	30	16	4	3	1	2	2		1								6.26	8.6
Negro:																												
VIII	38					1	3	6	12	5	4	4	2		1												7.8	11.6
VII	128			1	9	17	33	21	16	16	6	6	2	1													6.2	10.9
VI	149		1	4	14	27	27	21	23	24	4	3	1														6.1	9.8
V	185			15	23	42	42	32	18	7	2	1		2									1				5.3	8.6
White and Negro:																												
VIII	306		1		3	10	15	32	45	55	41	45	24	7	12	7	3	4	2								8.8	11.6
VII	491			3	13	29	70	75	76	93	53	35	27	8	3	3	2				1						7.7	10.9
VI	562		1	5	19	61	81	91	101	92	50	29	18	8	3	2	1										7.2	9.8
V	718			27	52	120	161	142	88	63	32	17	4	5	1	2	2		1				1				5.99	8.6

SUBTRACTION ATTEMPTS (TIME, FOUR MINUTES).

White:																												
VIII	267				1		2	4	4	19	27	41	36	32	31	14	10	10	7	9	9	3	5	2	1		12.0	12.9
VII	362	1	1		3	6	5	25	46	59	59	55	44	24	19	6	3	1	4	1							9.6	11.6
VI	413	1		2	6	13	31	53	61	92	44	42	26	21	10	4	5	2									8.4	10.3
V	533	3		4	14	39	73	108	100	82	51	33	12	3	2	5	2	2									7.26	9.0
Negro:																												
VIII	38			1		1	2	4	6	6	5	7		3	1		1						1				8.8	12.9
VII	128	1		2	11	10	18	22	16	26	3	6	6	5	1	1											7.0	11.6
VI	14		4	6	12	11	8	10	17	18	10	17	11	14	1	3	3	2	2								8.4	10.3
V	185	3	2	13	17	25	23	18	16	22	11	12	6	7	5	1	1	1	1								6.5	9.0
White and Negro:																												
VIII	305			1	1	1	4	8	10	25	32	48	36	35	32	14	11	10	7	9	9	4	5	2		1	11.6	12.9
VII	490	2	1	2	14	16	23	47	62	85	62	61	50	29	20	7	3	1	4	1							8.9	11.6
VI	562	1	4	8	18	24	39	63	78	110	54	59	37	35	11	7	8	4	2								8.4	10.3
V	718	6	2	17	31	64	96	126	116	104	62	45	18	10	7	6	3	3	1	1							7.1	9.0

MULTIPLICATION ATTEMPTS (TIME, SIX MINUTES).

White:																												
VIII	268				2	1	9	22	31	28	37	41	37	23	11	10	5	2	6	3							10.1	11.5
VII	361			1	5	16	36	61	61	51	46	40	21	13	6	1	1		1							1	8.0	10.2
VI	413			2	22	36	64	85	79	67	30	17	6	2	2											1	6.9	9.1
V	533		5	11	49	73	125	106	89	31	26	5	9	1	1			2									6.0	7.5
Negro:																												
VIII	38	1					3	3	6	6	8	3	4	2	1					1							9.0	11.5
VII	128	2			6	13	21	16	26	12	13	10	2	3	1	1	1			1							7.2	10.2
VI	152			6	14	16	25	15	33	9	17	7	2	5	1		1				1						7.0	9.1
V	185	2	2	5	24	20	48	19	27	23	5	6	1		1											1	5.8	7.5
White and Negro:																												
VIII	306	1			2	1	12	25	37	34	45	44	41	25	12	10	5	2	6	4							9.9	11.5
VII	489	2		1	11	29	57	77	87	63	59	50	23	16	7	2	2		1		1					1	7.8	10.2
VI	565			8	36	52	89	100	112	76	47	24	8	7	3		1			1					1		6.9	9.1
V	718	2	7	16	73	93	173	125	116	54	31	11	10	1	2			2								1	5.9	7.5

DIVISION ATTEMPTS (TIME, EIGHT MINUTES.)

White:																												
VIII	268					4	6	16	31	36	45	30	24	16	19	19	9	7	4	1	1						8.9	10.7
VII	360	1	4	9	25	44	63	51	31	55	22	25	4	16	6	1	2	1									6.7	9.6
VI	413	4	9	34	57	89	89	51	31	22	20	3	2	1	1												5.2	8.2
V	533	12	33	93	117	131	81	27	18	11	3		2	3				2									4.1	6.1
Negro:																												
VIII	38	1			2	2	6	6	3	6	1	5	2	1	3												7.7	10.7
VII	128	2	4	18	25	40	10	16	6	5	2																4.4	9.6
VI	152	2	12	19	29	43	18	14	5	7	2				1												4.3	8.2
V	185	9	44	41	33	32	8	5	9	2	2																2.9	6.1
White and Negro:																												
VIII	306	1			6	8	22	37	30	51	31	29	18	30	22	9	7	4	1	1							8.5	10.7
VII	488	3	8	27	50	84	73	67	37	60	24	25	4	16	6	1	2	1									5.9	9.6
VI	565	6	21	53	86	132	101	65	36	29	22	3	2	1	2												4.9	8.2
V	718	21	77	134	150	163	89	32	27	13	5		2	2				2									3.8	6.1

Degree of accuracy.

ADDITION TEST—PERCENTAGE OF ACCURACY.

Grades.	Total papers.	0–49 per cent correct.	50 per cent correct.	60 per cent correct.	70 per cent correct.	80 per cent correct.	90 er cent correct.	100 per cent correct.	Median accuracy.	Standard median.
White:										
VIII	268	44	44	46	49	41	20	24	70.0	76.0
VII	363	80	67	55	57	63	10	31	66.8	75.0
VI	413	115	68	60	58	66	9	37	64.0	73.0
V	583	204	76	80	49	53	5	66	58.2	70.0
Negro:										
VIII	38	16	12	2	2	4	1	1	52.5	76.0
VII	128	45	23	23	8	17	12	.....	58.2	75.0
VI	149	52	18	21	16	21	3	18	62.3	73.0
V	185	53	24	25	24	28	.....	31	66.4	70.0
White and Negro:										
VIII	306	60	56	48	51	45	21	25	67.9	76.0
VII	491	125	90	78	65	80	22	31	63.9	75.0
VI	562	167	86	81	74	87	12	55	63.4	73.0
V	718	257	100	105	73	81	5	97	60.1	70.0

SUBTRACTION TEST—PERCENTAGE OF ACCURACY.

White:										
VIII	267	13	12	30	51	70	50	41	84.0	87.0
VII	362	46	24	36	61	98	32	65	81.5	86.0
VI	413	72	45	69	59	78	22	68	73.5	85.0
V	553	162	55	77	74	98	5	62	66.4	83.0
Negro:										
VIII	38	9	6	4	9	6	2	2	70.0	87.0
VII	128	56	19	22	10	10	4	7	54.2	86.0
VI	149	54	25	22	24	14	3	7	58.4	85.0
V	185	106	29	22	13	9	.....	6	43.8	83.0
White and Negro:										
VIII	305	22	18	34	60	76	52	43	82.5	87.0
VII	490	102	43	58	71	108	36	72	75.9	86.0
VI	562	126	70	91	83	92	25	75	69.3	85.0
V	718	268	84	99	87	107	5	68	60.6	83.0

MULTIPLICATION TEST—PERCENTAGE OF ACCURACY.

White:										
VIII	268	19	22	42	57	65	29	34	78.9	81.0
VII	361	59	45	53	47	83	15	59	75.1	80.0
VI	413	106	51	62	51	74	6	63	68.0	78.0
V	[illegible]	190	67	77	56	76	1	66	61.3	75.0
Negro:										
VIII	38	12	3	8	7	7	.....	1	65.0	81.0
VII	128	52	19	19	18	16	1	3	56.8	80.0
VI	152	67	22	22	14	14	2	11	54.0	78.0
V	185	99	14	15	17	24	1	15	47.2	75.0
White and Negro:										
VIII	306	31	25	50	64	72	29	35	77.3	81.0
VII	489	111	64	72	65	99	16	62	69.7	80.0
VI	565	173	73	84	65	88	8	74	64.4	78.0
V	718	289	81	92	73	100	2	81	58.6	75.0

DIVISION TEST—PERCENTAGE OF ACCURACY.

White:										
VIII	268	11	15	18	24	65	29	106	90.3	91.0
VII	360	53	18	33	43	72	12	130	84.7	90.0
VI	413	103	44	53	29	60	2	122	72.4	87.0
V	533	226	79	60	33	34	.....	105	55.5	77.0
Negro:										
VIII	38	10	2	6	5	6	5	4	72.0	91.0
VII	128	54	23	13	14	14	.....	10	54.8	90.0
VI	152	59	16	21	17	15	1	23	60.6	87.0
V	185	98	28	8	11	11	.....	29	47.4	77.0
White and Negro:										
VIII	306	21	17	24	29	71	34	110	88.7	91.0
VII	488	107	41	46	36	86	12	140	78.9	90.0
VI	565	162	60	74	46	75	3	145	66.2	87.0
V	718	324	96	68	40	45	.....	134	53.5	77.0

Memphis schools compared.

THE ADDITION TEST.

[Comparison of median scores—Compared also with general standard medians.]

Grades.	Examples.	White schools.						Negro schools.			General standard.
		Bruce.	A. B. Hill.	Lauderdale.	Merrill.	Riverside.	Roselle.	Grant.	Kortrecht Grammar	La Rose.	
VIII	Examples attempted	7.6	8.9	8.2	9.2	10.3	11.3	7.8	.....	.....	11.6
	Percentage correct	67.2	72.3	70.0	58.7	70.0	76.0	52.5	.....	.....	76.0
VII	Examples attempted	8.3	6.9	8.4	8.8	7.8	8.4	6.3	7.0	5.5	10.9
	Percentage correct	63.0	70.0	74.7	56.2	65.0	67.5	53.5	53.3	60.0	75.0
VI	Examples attempted	8.12	6.6	7.6	7.8	7.9	7.4	5.8	6.3	6.1	9.8
	Percentage correct	63.9	59.1	65.8	60.0	66.2	72.8	52.0	71.5	61.0	72.0
V	Examples attempted	6.0	6.4	6.3	6.4	6.8	5.5	6.5	4.7	5.3	8.6
	Percentage correct	61.5	58.3	61.0	57.5	52.8	54.2	66.7	75.6	57.7	70.0

THE SUBTRACTION TEST.

VIII	Examples attempted	14.7	10.9	11.6	11.0	12.0	11.9	8.8	.....	.....	12.9
	Percentage correct	84.7	85.3	83.8	78.5	86.0	85.5	60.0	.....	.....	87.0
VII	Examples attempted	9.4	8.5	9.5	10.5	9.7	10.2	6.4	8.3	8.4	11.6
	Percentage correct	83.2	82.3	86.2	79.3	75.6	77.5	48.8	85.0	54.2	86.0
VI	Examples attempted	8.7	6.5	8.7	8.6	10.5	8.2	4.5	8.8	10.2	10.3
	Percentage correct	78.2	66.8	80.0	71.4	70.0	80.0	58.0	61.5	56.0	85.0
V	Examples attempted	6.9	6.9	7.7	7.2	8.56	6.4	4.4	7.3	8.2	9.0
	Percentage correct	73.6	64.7	75.0	66.2	45.9	66.7	44.4	42.1	44.6	83.0

THE MULTIPLICATION TEST.

VIII	Examples attempted	10.3	9.0	10.8	8.3	11.0	10.0	9.0	.....	.....	11.5
	Percentage correct	76.4	80.9	82.8	82.5	72.5	78.5	65.0	.....	.....	81.0
VII	Examples attempted	7.7	7.0	8.3	8.6	8.6	8.9	6.8	7.0	8.0	10.2
	Percentage correct	71.0	71.6	80.0	71.6	74.2	78.8	56.7	60.0	50.0	80.0
VI	Examples attempted	6.9	5.8	7.4	7.5	7.7	6.9	5.5	5.8	7.1	9.1
	Percentage correct	65.8	57.5	76.4	65.3	60.0	80.0	55.6	42.8	61.1	78.0
V	Examples attempted	5.7	5.8	7.1	5.6	6.9	5.2	6.5	5.0	6.0	7.5
	Percentage correct	68.4	62.5	67.0	61.8	51.6	56.2	68.3	35.5	47.7	75.0

THE DIVISION TEST.

VIII	Examples attempted	9.3	7.8	9.2	9.4	8.4	10.3	7.7	.....	.....	10.7
	Percentage correct	87.6	87.6	91.2	90.0	88.8	100.0	72.5	.....	.....	91.0
VII	Examples attempted	7.2	5.1	6.1	8.0	6.1	8.0	4.6	4.3	3.6	9.6
	Percentage correct	85.5	78.9	100.0	83.6	81.6	78.3	53.1	43.7	62.0	90.0
VI	Examples attempted	5.8	4.2	4.9	5.6	5.7	5.2	4.1	4.0	4.7	8.3
	Percentage correct	77.5	57.0	85.3	67.5	76.6	82.0	51.6	63.3	65.0	87.0
V	Examples attempted	3.9	3.8	3.7	4.2	4.8	4.1	3.1	1.8	4.0	6.1
	Percentage correct	60.6	45.6	74.2	53.6	39.4	65.5	63.3	34.6	45.6	77.6

Memphis in comparison.

ADDITION.

Grades.	General standard.			Courtis standard.		Boston	San Francisco.			Columbia, S. C.						Memphis.					
										The system.			Whites.		Negroes.	The system.			Whites.		Negroes.
	Speed.	Accuracy.	Examples correct.	Speed.	Accuracy.	Speed.	Speed.	Accuracy.	Examples correct.	Speed.	Accuracy.	Examples correct.	Speed.	Accuracy.	Speed. Accuracy.	Speed.	Accuracy.	Examples correct.	Speed.	Accuracy.	Speed.	Accuracy.
VIII	11.6	76.0	8.8	12.0	100	12	11.9	74.8	8.9	7.6	61.7	4.7	8.4	64.0	6.0 53.3	8.8	67.9	5.9	9.0	70.0	7.8 52.5
VII	10.9	75.0	8.1	11.0	100	11	9.7	69.9	6.8	7.5	63.1	4.7	8.0	67.0	5.9 55.7	7.7	63.9	4.9	8.2	66.3	6.2 58.2
VI	9.8	73.0	7.1	10.0	100	10	10.3	74.1	7.6	6.8	60.0	4.0	7.4	64.0	5.2 52.1	7.2	63.4	4.6	7.6	64.0	6.1 62.3
V	8.6	70.0	6.0	8.0	100	9	8.2	75.1	6.0	5.8	56.2	3.3	6.4	61.4	4.6 47.5	5.9	60.1	3.5	6.3	58.2	5.3 66.4

SUBTRACTION.

VIII	12.9	87.0	11.2	13.0	100	12.0	90	13.9	80.9	12.6	7.6	61.7	4.7	8.1	64.0	6.0	53.3	11.6	82.5	9.6	12.0	84.0	8.8	70.0
VII	11.6	86.0	9.9	12.0	100	11.0	90	12.5	85.1	10.7	7.5	63.1	4.7	8.0	67.0	5.9	55.7	8.9	75.9	8.8	9.6	81.5	7.0	54.2
VI	10.3	85.0	8.8	11.0	100	10.0	90	11.4	84.2	9.6	6.8	60.0	4.0	7.4	64.0	5.2	52.1	8.4	69.3	5.8	8.4	73.5	8.4	58.4
V	9.0	83.0	7.4	9.0	100	9.0	80	9.1	82.6	7.5	5.8	56.2	3.3	6.4	61.4	4.6	47.5	7.1	60.6	4.3	7.7	66.4	6.5	43.8

MULTIPLICATION.

VIII	11.5	81.0	9.3	11.0	100	11.0	90	12.0	76.0	8.0	7.0	63.6	4.5	7.8	65.1	5.8	58.0	9.9	77.3	7.7	10.1	78.9	9.0	65.0
VII	10.2	80.0	8.1	10.0	100	10.0	80	9.1	74.0	6.7	7.8	71.2	5.6	8.3	76.3	5.9	50.0	7.8	69.7	5.4	8.0	75.1	7.2	58.3
VI	9.1	78.0	7.0	9.0	100	9.0	80	8.8	68.7	6.9	6.4	65.0	4.2	6.8	68.7	4.3	55.6	6.9	64.4	4.4	6.9	68.0	7.0	54.0
V	7.5	75.0	5.6	8.0	100	7.0	70	6.8	66.9	4.5	5.6	57.5	3.2	6.2	66.7	3.3	47.2	5.9	58.6	3.5	6.0	61.3	5.8	47.2

DIVISION.

VIII	10.7	91.0	9.7	11.0	100	11.0	90	9.6	89.2	8.6	6.7	82.7	5.5	7.2	86.3	4.5	63.3	8.8	88.7	7.8	8.9	90.3	7.7	72.0
VII	9.6	90.0	8.6	10.0	100	10.0	90	8.1	80.3	6.5	6.5	84.1	5.5	7.4	86.9	4.5	60.0	5.9	78.9	4.7	6.7	84.7	4.4	54.3
VI	8.2	87.0	7.1	8.0	100	8.0	80	7.6	74.7	5.7	4.9	80.0	3.9	5.5	84.4	4.0	57.2	4.9	68.2	3.3	5.2	72.4	4.3	60.4
V	6.1	77.0	4.7	6.0	100	6.0	70	4.7	57.0	2.7	4.3	57.6	2.5	5.0	69.0	3.3	42.7	3.8	58.5	2.0	4.1	55.8	2.9	47.4

THE SPEED OF MEMPHIS CHILDREN.

Reference to the tables which give the results for the median number of problems attempted will show the children in the Memphis schools very deficient in speed when compared with the general standard median which has been obtained by testing thousands of children throughout the United States. (See Monroe, Educational Tests and Measurements, pp. 38–40.) We have separated the Negro and white children, so that it can not be said that the deficiency in speed is due to deficiency in the Negro children.

Addition.—In addition processes the children of the fifth, sixth, and seventh grades, white schools, fall below what ordinary fifth-grade children have obtained in other cities, while the eighth grade of the white schools fail to exceed the general standard median of the sixth grade. In the Negro schools none of the four upper grades reach the general standard median of the fifth grade.

Subtraction.—The fifth and sixth grades in the white schools failed to reach the general standard of the fifth grade, while the seventh grade barely exceeded the standard of the fifth grade, and the eighth grade a little more than excelled the standard median of the seventh grade. In the Negro schools none of the four upper grades reached the general standard median of the fifth grade.

Multiplication.—The fifth and sixth grades, white schools, failed to reach the general standard of the fifth grade, while the seventh grade barely exceeded the general standard of the fifth grade, and the eighth grade failed to reach the general standard of the seventh grade. Only the eighth grade of the Negro schools exceeds the general standard median of the fifth grade, and then not sufficiently to equal the general standard of the sixth grade.

Division.—The eighth grade of the white schools falls below the seventh grade general standard, while the seventh grade barely exceeds the general standard of the fifth grade. The sixth and fifth grades both fall below the general fifth grade standard. The Negro fifth, sixth, and seventh grades are all inferior to the fifth grade general standard, while the eighth grade is not quite up to the sixth grade standard.

ACCURACY AND EXAMPLES CORRECT.

Not only are the children in the Memphis schools deficient in speed, but they also stand very low in accuracy. In other words, they attempt fewer problems than the average children of their respective grades and are less accurate than are the children of other school systems, even though they attempt a fewer number of examples. For example, eighth-grade children under the general standard attempt 11.6 examples out of 24 with an accuracy score of 76 per cent, thus averaging 8.8 examples correct, while Memphis eighth-grade children attempt 8.8 examples with 67.7 accuracy score and only 5.9 examples correct as an average, which is not as large a number of examples correct as a fifth-grade child should do, according to the general standard. It seems reasonable to expect an eighth-grade child in Memphis to solve as many examples correctly as a fifth-grade child in San Francisco, but at the present time he is not able to do it. We are somewhat inclined to believe that it is not entirely the child's fault.

In subtraction again the children of the upper grades in the Memphis schools fall down sadly in accuracy. The average number of examples correct for the eighth grade is less than the general standard for the seventh grade, while the fifth, sixth, and seventh grades all fall below the general standard for examples correct by the fifth grade.

In multiplication the situation is even worse. The average number of examples correct for the Memphis schools in any of the upper grades except the eighth falls below the general standard for the fifth grade, while the average number of examples correct for the eighth grade is only slightly better than the sixth grade.

In division the average number of examples correct for the eighth grade is somewhat better than the sixth grade general standard. The fifth, sixth, and seventh grades do not exceed the general standard of the fifth grade.

Reference to the table in which the Memphis school system is compared to the general standard, obtained by testing thousands of children all over the United States, and the Boston standards, obtained by several years' use, and the results found in the San Francisco and Columbia, S. C., surveys, will show that the arithmetic situation in Memphis as far as fundamental operations are concerned compares badly with all except the schools of Columbia, S. C.

We have also made a comparison of the schools which were tested and the results are presented for the benefit of teachers in those schools. In not more than three or four instances did any class exceed the median accuracy or median speed for its grade. This situation should be a subject for reflection for all teachers concerned.

The situation in the Negro schools is particularly bad. A close study of the results will show that there is a very wide range of variation in the accomplishment of the different schools both in speed and accuracy which can only result from inefficient supervision and poor classification of children. For example, the Bruce School children in the eighth grade did not attempt so many examples in addition as children in the sixth. In the Hill School the number of examples attempted by the fifth, sixth, and seventh grades is practically the same in each grade.

SNAPPY DRILLS NEEDED.

Drill, properly conducted and continuously carried on, is an absolute requirement for speed and accuracy in the arithmetical operations. A motive for drilling, a thorough understanding of the steps involved in the drill process, regular, frequent short repetitions with a maximum of attention focused on the drill, with enough variation of drill material to avoid any monotony are the most important principles upon which to base effective drills. In a month of observation only a very few drill lessons carried out along those lines were observed. We believe that it is good practice to begin almost every arithmetic lesson with a good, snappy drill, which, if possible, is connected in some way with the day's work. Not enough of this type of activity is found now in the Memphis schools. Four or five min-

utes each day spent in this way is the most economical expenditure of time that can be devised.

In this same connection, as has already been said, there is practically no oral or mental arithmetic in the upper and intermediate grades. Just why this should be so is not quite clear. The teachers urge that there is not time for it. As a matter of fact there is not time enough to do anything else than give a large percentage of the time to oral work. Too much written work, too much analysis, and too much labeling of every figure on the board or on paper take a great amount of unnecessary labor and time. Problem analysis and written solutions are all right to fix the process involved in mind, but when the process is once mastered, oral solutions, without a detailed analysis, are permissible and desirable. Very frequently children were observed writing out long anaylses of problems which would have been easily solved mentally with a great saving of time.

Many of the teachers realize the weakness of the oral work. Some urge that separate periods be assigned for mental arithmetic and for written arithmetic. This is not at all necessary nor wise. In any of the modern textbooks there are many oral problems, and further, many of the problems labeled "written" permit of oral or partially oral solution. It is frequently advisable to require children to carry the solution of a problem as far as possible orally and write only those operations which are necessary.

A REASONING TEST IN ARITHMETIC.

Although no very scientific standards for reasoning ability in arithmetic have been developed, the Stone Reasoning Test is used more than any other test of this nature. The test is printed here.

(Solve as many of the following problems as you have time for; work them in order as numbered:)

1. If you buy 2 tablets at 7 cents each and a book for 65 cents, how much change should you receive from a two-dollar bill? (1.0.)

2. John sold 4 Saturday Evening Posts at 5 cents each. He kept one-half the money and with the other half he bought Sunday papers at 2 cents each. How many did he buy? (1.0.)

3. If James had 4 times as much money as George, he would have $16. How much money has George? (1.0.)

4. How many pencils can you buy for 50 cents at the rate of 2 for 5 cents? (1.0.)

5. The uniforms for a baseball nine cost $2.50 each. The shoes cost $2 a pair. What was the total cost of uniforms and shoes for the nine? (1.0.)

6. In the schools of a certain city there are 2,200 pupils; one-half are in the primary grade, one-fourth in the grammar grades, one-eighth in the high school, and the rest in the night school. How many pupils are there in the night school? (1.4.)

7. If 3½ tons of coal cost $21, what will 5½ tons cost? (1.2.)

8. A newsdealer bought some magazines for $1. He sold them for $1.20 gaining 5 cents on each magazine. How many magazines were there? (1.6.)

9. A girl spent one-eighth of her money for car fare, and three times as much for clothes. Half of what she had left was 80 cents. How much money did she have at first? (2.0.)

10. Two girls receive $2.10 for making buttonholes. One makes 42, the other 28. How shall they divide the money? (2.0.)

11. Mr. Brown paid one-third of the cost of a building; Mr. Johnson paid one-half the cost. Mr. Johnson received $500 more annual rent than Mr. Brown. How much did he receive? (2.0.)

12 A freight train left Albany for New York at 6 o'clock. An express train left on the same track at 8 o'clock It went at the rate of 40 miles an hour. At what time of day will it overtake the freight train if the freight train stops after it has gone 56 miles? (2.0.)

The time allowance is exactly 15 minutes. The problems are graded in difficulty, each problem having a score value commensurate with its difficulty. No credit was allowed for partially correct or partially complete answers.

OBSERVATIONS ON THE STONE REASONING TEST.

Stone has recently issued the following standards of accomplishment in speed and accuracy in the reasoning test:

Eighty per cent or more of fifth grade pupils should reach or exceed a credit score of 5.5 with 75 per cent accuracy.

Eighty per cent or more of sixth grade pupils should reach or exceed a credit score of 6.5 with 80 per cent accuracy.

Eighty per cent or more of the seventh grade pupils should reach or exceed a credit score of 7.5 with 85 per cent accuracy.

Eighty per cent of eighth grade pupils should reach or exceed a credit score of 8.75 with 90 per cent accuracy.

Judged by these standards, the Memphis schools did poorly. The average (approximately equivalent to the median for a large number of pupils) or 50 per cent of the fifth grade reached a score of 3.3, with an average accuracy of 45.7 per cent.

Only 50 per cent of the sixth grade pupils reached a score of 4.8 with an average accuracy of 54.5 per cent.

Only 50 per cent of the seventh grade pupils reached a score of 6.1 with an average accuracy of 64.9 per cent.

Only 50 per cent of the eighth grade pupils reached a score of 7.5 with an average accuracy of 71.1 per cent.

This comparison does not put the Memphis schools in a particularly good light. However, when Memphis is compared with other cities, where the same test has been given and the results calculated in the same way, we find that the average credits per pupil in the fifth grade are higher than in any city compared except Salt Lake City. This is true, also, for the sixth grade and seventh grade. The average credits in the eighth grade are exceeded by the average of the eighth grades in Butte, Mont., and Salt Lake City.

The study of the scores of individual schools and grades will be very valuable to the teachers. When comparisons are made of dif-

ferent schools and grades in average credits, examples attempted and accuracy, a wide variation is found, indicating lack of supervision.

The following table shows the range of variability. Supervision should do a great deal to eradicate the differences and raise the general average or attainment:

Results of the reasoning tests in white schools.

Schools and grades.	Number of pupils.	Total examples attempted.	Total examples correct.	Percentage of accuracy.	Total credits.	Average credits per pupil.	Average examples attempted per pupil.	Average examples right per pupil.
Bruce:								
Grade V	114	665	410	63.1	442.8	3.8	5.8	3.5
Grade VI	53	384	243	63.2	256.4	4.8	7.2	4.6
Grade VII	101	863	503	58.6	546.1	5.4	8.5	5.0
Grade VIII	60	457	356	77.9	393.2	6.5	7.6	5.9
Total	328	2,369	1,512	63.8	1,638.8	3.5	7.2	4.6
Church Home: Grade V	5	33	3	.91	3.0	.18	6.6	.6
Cummings:								
Grade V	73	502	211	42.0	220.2	3.0	6.8	3.0
Grade VI	64	562	258	45.9	228.6	4.5	8.7	4.2
Grade VII	42	400	194	48.5	222.2	5.3	9.5	4.6
Grade VIII	27	232	142	61.2	164.6	6.1	8.5	5.2
Total	206	1,696	805	47.4	895.6	4.3	8.2	3.9
Gordon:								
Grade V	57	370	147	39.7	150.2	2.7	6.5	2.6
Grade VI	46	262	160	61.0	166.8	3.6	5.7	3.5
Grade VII	34	323	186	57.5	212.2	6.2	9.5	5.4
Grade VIII	25	237	144	60.7	166.4	6.6	9.4	5.7
Total	162	1,192	637	53.2	701.6	4.1	7.3	3.9
Guthrie:								
Grade V	40	234	106	45.2	107.6	2.6	5.8	2.6
Grade VI	55	379	244	64.9	252.0	4.6	6.8	4.4
Grade VII	64	558	341	60.2	364.4	5.7	8.7	5.3
Grade VIII	37	335	222	66.2	256.2	6.9	9.0	6.0
Total	196	1,506	913	60.6	980.2	5.0	7.7	4.6
A. B. Hill:								
Grade V	103	691	281	40.6	285.8	2.7	6.6	2.6
Grade VI	75	453	255	56.2	257.8	3.7	6.0	3.4
Grade VII	59	420	257	61.1	263.0	4.4	7.1	4.4
Grade VIII	44	330	226	68.4	250.8	5.7	7.5	5.1
Total	283	1,894	1,019	53.8	1,057.4	3.7	6.7	3.6
Idlewild:								
Grade V	78	483	257	53.2	272.2	3.5	6.3	3.3
Grade VI	81	621	399	64.2	424.6	5.2	7.6	4.9
Grade VII	70	688	379	55.1	436.1	6.2	9.6	5.4
Grade VIII	55	547	378	69.1	444.8	8.0	9.9	6.8
Total	282	2,339	1,413	60.4	1,577.7	5.5	8.2	5.0
Lauderdale:								
Grade V	57	337	158	46.8	159.6	2.8	5.9	2.8
Grade VI	58	640	376	58.7	417.4	7.1	11.0	6.6
Grade VII	86	515	402	78.0	416.2	4.8	6.0	4.6
Grade VIII	71	548	403	73.5	437.0	6.1	7.7	5.6
Total	272	2,040	1,339	65.6	1,430.2	5.2	7.5	4.9
Leath:								
Grade V	59	408	191	46.8	202.0	3.4	6.9	3.2
Grade VI	57	594	303	51.0	360.8	6.3	10.4	5.3
Grade VII	40	399	211	52.8	240.2	6.0	10.0	5.2
Grade VIII	35	349	206	59.0	212.8	6.0	9.9	5.9
Total	191	1,750	911	52.0	1,015.8	5.3	9.1	4.7
Leath Orphanage:								
Grade V								
Grade VI	7	33	21	63.6	220.0	3.0	4.7	3.0
Grade VII	5	37	23	62.0	254.0	5.0	7.4	4.6
Total	12	70	44	62.8	474.0	3.9	5.8	3.6

Results of the reasoning tests in white schools—Continued.

Schools and grades.	Number of pupils.	Total examples attempted.	Total examples correct.	Percentage of accuracy.	Total credits.	Average credits per pupil.	Average examples attempted per pupil.	Average examples right per pupil.
Lenox:								
Grade V	27	139	84	60.4	84.8	3.1	5.1	3.1
Grade VI	33	228	144	63.2	152.2	4.6	6.9	4.3
Grade VII	43	312	216	69.2	231.6	5.4	7.2	5.0
Grade VIII	27	225	188	83.5	210.8	7.8	8.3	7.0
Total	130	904	632	69.9	679.4	5.2	6.1	4.9
Madison Heights:								
Grade V	20	148	69	46.6	75.0	3.7	7.4	3.4
Grade VI	74	520	252	48.4	284.6	3.8	7.0	3.4
Grade VII	41	398	252	63.3	293.0	7.1	9.7	6.1
Grade VIII	31	313	182	58.1	213.8	6.9	10.1	5.9
Total	166	1,379	755	54.7	866.4	5.2	8.3	4.5
Maury:								
Grade V	92	509	270	53.0	283.4	3.0	5.5	3.0
Grade VI	68	547	299	54.6	323.4	4.7	8.0	4.4
Grade VII	67	562	375	66.7	416.6	6.2	8.4	5.6
Grade VIII	45	403	269	66.7	319.4	7.1	8.9	5.9
Total	272	2,021	1,213	60.0	1,342.8	4.9	7.4	4.4
Merrill:								
Grade V	62	419	248	59.1	258.2	4.1	6.7	4.0
Grade VI	70	490	307	62.6	326.8	4.6	7.0	4.4
Grade VII	44	370	240	64.8	288.4	6.5	8.4	5.5
Grade VIII	28	226	181	80.0	217.0	7.7	8.0	6.4
Total	204	1,505	976	64.8	1,090.4	5.3	7.3	4.8
Peabody:								
Grade V	58	377	136	36.0	130.0	2.3	6.7	2.4
Grade VI	62	462	246	53.2	261.4	4.2	7.4	4.0
Grade VII	44	331	227	68.5	250.2	5.7	7.5	5.1
Grade VIII	39	334	245	73.3	287.6	7.4	8.5	6.3
Total	201	1,504	854	56.7	929.2	4.6	7.4	4.2
Pope:								
Grade V	80	492	217	44.1	223.4	2.8	6.0	2.7
Grade VI	67	557	303	54.3	332.4	4.9	8.3	4.5
Grade VII	35	288	184	63.9	169.4	4.8	8.2	5.2
Grade VIII	13	120	100	83.3	105.0	8.0	9.2	7.7
Total	195	1,457	804	55.1	830.2	4.2	7.4	4.1
Riverside:								
Grade V	99	681	316	46.4	333.6	3.2	6.8	3.2
Grade VI	49	403	224	55.5	246.4	5.1	8.2	4.5
Grade VII	33	280	170	60.7	188.8	5.7	8.5	5.1
Grade VIII	17	150	101	67.3	117.4	6.9	8.8	6.0
Total	198	1,514	811	53.5	886.2	4.4	7.6	4.1
Rozelle:								
Grade V	52	344	192	55.8	197.0	3.8	6.6	3.7
Grade VI	41	340	198	58.2	208.4	5.0	8.3	4.8
Grade VII	53	406	305	75.1	353.8	6.6	7.6	5.7
Grade VIII	39	385	279	72.4	325.4	8.3	9.8	7.1
Total	185	1,475	974	66.0	1,094.6	5.9	8.0	5.2
Smith:								
Grade V	69	690	228	33.0	251.2	3.6	10.0	3.3
Grade VI	60	605	249	41.1	278.4	4.6	10.0	4.1
Grade VII	29	249	161	64.6	183.8	6.3	8.5	5.5
Grade VIII	25	285	200	70.01	252.4	10.1	11.4	8.0
Total	183	1,829	838	45.7	965.8	5.2	10.0	4.6
Snowden:								
Grade V	40	329	156	47.4	167.0	4.1	8.2	3.9
Grade VI	39	393	205	52.2	233.0	6.0	10.1	5.2
Grade VII	36	389	328	84.3	404.0	11.2	10.8	9.1
Grade VIII	30	2,311	185	60.4	7.1	215.4	10.3	6.2
Total	145	1,422	877	61.6	1,049.4	7.0	9.8	6.0
St. Paul:								
Grade V	28	172	110	63.9	92.6	3.3	6.1	4.0
Grade VI	49	359	212	59.0	225.4	4.6	7.3	4.3
Grade VII	36	269	171	63.5	190.6	5.3	7.4	4.8
Grade VIII	22	212	148	67.4	163.0	7.5	9.6	6.7
Total	135	1,012	626	62.8	673.6	4.9	7.4	4.7

Results of the reasoning test in Negro schools.

Schools and grades.	Number of pupils.	Total examples attempted.	Total examples correct.	Percentage of accuracy.	Total credits.	Average credits per pupil.	Average examples attempted per pupil.	Average examples correct per pupil.
Caldwell:								
Grade V	18	152	128	84.2	140.6	7.8	8.4	7.1
Grade VI	10	89	77	86.5	86.1	8.6	8.9	7.7
Total	28	241	205	85.0	226.7	8.0	8.6	7.3
Carnes:								
Grade V	52	367	177	48.2	190.6	3.6	7.0	3.4
Grade VI	47	339	184	54.3	194.2	4.1	7.4	3.9
Total	99	706	361	51.1	384.8	3.8	7.1	3.6
Charles:								
Grade V	9	86	74	86.0	92.4	10.2	9.5	8.2
Grade VI	5	49	46	93.9	59.0	11.8	9.8	9.2
Total	14	135	120	88.8	151.4	10.8	9.6	8.5
Grant:								
Grade V	43	212	115	54.2	116.0	2.5	4.9	2.6
Grade VI	18	79	24	30.3	244.0	13.5	4.4	1.3
Grade VII	84	442	226	51.1	213.8	2.5	5.2	2.7
Grade VIII	39	211	111	52.6	114.6	2.9	5.4	2.8
Total	184	944	476	50.4	687.4	3.7	5.1	2.6
Greenwood:								
Grade V	43	246	166	67.4	166.6	3.8	5.7	3.8
Grade VI	26	153	106	69.2	110.8	4.2	5.8	4.1
Grade VII	22	186	148	79.5	176.4	8.0	8.4	6.7
Total	91	585	420	73.5	453.8	4.9	6.4	4.4
Klondike:								
Grade V	41	492	237	48.9	256.6	6.2	12.0	5.8
Grade VI	33	295	185	62.7	205.0	6.2	8.9	5.6
Total	74	787	422	53.6	461.6	6.2	10.0	5.7
Kortrecht Grammar:								
Grade V	47	470	96	20.4	96.2	2.0	10.0	2.0
Grade VI	43	430	130	30.2	133.2	3.1	10.0	3.0
Grade VII	11	110	54	49.0	57.4	5.2	10.0	5.0
Total	101	1,010	280	26.1	286.8	2.8	10.0	2.6
Kortrecht High:								
Grade VII	74	637	606	95.1	842.0	11.3	8.6	8.1
Grade VIII	88	1,038	892	85.9	1,172.7	13.3	11.7	10.0
Total	162	1,675	1,498	89.3	2,014.7	12.4	10.3	9.2
La Rose:								
Grade V	112	799	293	36.6	305.2	2.7	7.1	2.6
Grade VI	65	480	221	46.0	227.2	3.2	7.4	3.4
Grade VII	32	182	92	50.5	89.2	2.8	5.6	2.9
Total	209	1,461	606	41.4	621.6	2.9	6.9	2.9
Porter:								
Grade V	48	480	177	36.8	201.0	4.2	10.0	3.7
Grade VI	24	240	118	49.1	118.0	4.8	10.0	4.9
Grade VII	24	240	140	58.3	146.0	6.0	10.0	5.8
Total	96	960	435	45.3	465.0	4.8	10.0	4.7
Virginia Avenue:								
Grade V	64	280	52	18.5	52.0	0.8	4.3	0.8
Grade VI	57	244	127	52.0	127.0	2.2	4.3	2.2
Grade VII	13	61	43	70.4	43.0	3.3	4.7	3.3
Total	134	585	222	37.9	222.0	1.6	4.3	1.6

Memphis schools compared in average examples per pupil attempted and right.

WHITE SCHOOLS.

Name.	Grades.							
	V.		VI.		VII.		VIII.	
	Average number.		Average number.		Average number.		Average number.	
	Attempted.	Right.	Attempted.	Right.	Attempted.	Right.	Attempted.	Right.
Bruce	5.8	3.5	7.2	4.6	8.5	5.0	7.8	5.9
Church Home	6.6	.6						
Cummings	6.8	3.0	8.7	4.2	9.5	4.6	8.5	5.2
Gordon	6.5	2.6	5.7	3.5	9.5	5.4	9.4	5.7
Guthrie	5.8	2.6	6.8	4.4	8.7	5.3	9.0	6.0
A. B. Hill	6.6	2.6	6.0	3.4	7.1	4.4	7.5	5.1
Idlewild	6.3	3.3	7.6	4.9	9.8	5.4	9.9	6.8
Lauderdale	5.9	2.8	11.0	6.6	6.0	4.6	7.7	5.6
Leath	6.9	3.2	10.4	5.3	10.0	5.2	9.9	5.9
Leath Orphanage			4.7	3.0	7.4	4.6		
Lenox	6.1	3.1	6.9	4.3	7.2	5.0	8.3	7.0
Madison Heights	7.4	3.4	7.0	3.4	9.7	6.1	10.1	5.9
Maury	5.5	3.0	8.0	4.4	8.4	5.6	8.9	5.9
Merrill	6.7	4.0	7.0	4.4	8.4	5.5	8.0	6.4
Peabody	6.7	2.4	7.4	4.0	7.5	5.1	8.5	6.3
Pope	6.0	2.7	8.3	4.5	8.2	5.2	9.2	7.7
Rozelle	6.6	3.7	8.3	4.8	7.6	5.7	9.8	7.1
Riverside	6.8	3.2	8.2	4.5	8.5	5.1	8.8	6.0
Smith	10.0	3.3	10.0	4.1	8.5	5.5	11.4	8.0
Snowden	8.2	3.9	10.1	5.2	10.8	9.1	10.3	6.2
St. Paul	6.1	4.0	7.3	4.3	7.4	4.8	9.6	6.5

NEGRO SCHOOLS.

Caldwell	8.4	7.1	8.9	7.7				
Carnes	7.0	3.4	7.4	3.9				
Charles	9.5	8.2	9.8	9.2				
Grant	4.9	2.6	4.4	1.3	5.2	2.7	5.4	2.8
Greenwood	3.7	3.8	5.8	4.1	8.4	6.7		
Kortrecht Grammar	10.0	2.0	10.0	3.0	10.0	5.0		
Kortrecht High					8.6	8.1	11.7	10.0
Klondike	12.0	5.8	8.9	5.6				
La Rose	7.1	2.6	7.4	3.4	5.6	2.9		
Porter	10.0	3.7	10.0	4.9	10.0	5.8		
Virginia	4.3	0.8	4.3	2.2	4.7	3.3		

Memphis schools compared in average accuracy and average credits.

WHITE SCHOOLS.

Name.	Grades.							
	V.		VI.		VII.		VIII.	
	Average accuracy.	Average credits.	Average accuracy.	Average credits.	Average accuracy.	Average credits.	Average accuracy.	Average credits.
Bruce	63.1	3.8	63.2	4.8	58.6	5.4	77.9	6.5
Church Home	.9	.2						
Central High								
Cummings	42.0	3.0	45.9	4.8	48.6	5.3	61.2	6.1
Gordon	39.7	2.7	61.0	3.6	57.5	6.2	60.7	6.6
Guthrie	45.2	2.6	64.0	4.0	60.2	5.7	66.2	6.9
A. B. Hill	40.6	2.7	56.2	3.7	61.1	4.4	58.4	5.7
Idlewild	53.2	3.5	64.2	5.2	55.1	6.2	69.1	8.0
Lauderdale	46.8	2.8	58.7	7.1	78.0	4.8	73.5	6.1
Leath	46.8	3.4	51.0	6.3	52.8	6.0	59.0	6.0
Lenox	60.4	3.1	63.2	4.6	69.2	5.4	83.5	7.8
Madison Heights	46.6	3.7	48.4	3.8	62.3	7.1	58.1	6.9
Maury	53.0	3.0	54.6	4.7	66.7	6.2	66.7	7.1
Merrill	59.1	4.1	62.6	4.6	64.8	6.5	80.0	7.7
Open Air								
Peabody	36.0	2.3	53.2	4.2	68.5	5.7	73.3	7.4
Pope	44.1	2.8	54.3	4.9	68.9	4.8	83.3	8.0
Rozelle	55.6	3.8	58.2	5.0	75.1	6.6	72.4	8.6
Riverside	46.6	3.2	55.5	5.1	60.7	5.7	67.3	6.9
Smith	33.0	3.6	41.1	4.8	64.6	8.3	70.0	10.1
Snowden	47.4	4.1	52.2	6.0	54.3	11.2	60.4	7.1
St. Paul	63.9	3.3	59.0	4.6	63.5	5.3	67.4	7.5

Memphis schools compared in average accuracy and average credits—Continued.

NEGRO SCHOOLS.

Name	Grades.							
	V.		VI.		VII.		VIII.	
	Average accuracy.	Average credits.	Average accuracy.	Average credits.	Average accuracy.	Average credits.	Average accuracy.	Average credits.
Caldwell	84.2	7.8	86.4	8.9				
Carnes	48.2	3.6	54.3	4.1				
Charles	86.0	10.2	93.9	11.8				
Grant	54.2	2.5	80.3	13.5	51.1	2.5	52.6	2.0
Greenwood	67.4	3.8	69.2	4.2	79.5	8.0		
Kortrecht Grammar	20.4	2.0	30.2	3.1	49.0	5.2		
Kortrecht High					95.1	11.3	85.9	13.3
Klondike	48.9	6.2	62.7	6.2				
La Rose	36.6	2.7	46.0	3.2	50.5	2.8		
Porter	36.8	4.2	49.1	4.8	58.3	6.0		
Virginia	18.5	.8	52.0	2.2	70.4	3.3		

Variability in grades.

Grades.	Examples attempted.	Examples correct.	Average accuracy.	Average credit.
Fifth grade	3.7–12.0	0.6– 8.2	0.9–86.0	0.2– 7.8
Sixth grade	4.3–11.0	1.3– 9.2	30.2–86.1	2.2–11.8
Seventh grade	4.7–10.8	2.7– 9.1	48.5–95.1	2.5–11.3
Eighth grade	5.4–11.7	2.8–10.0	52.6–85.9	2.9–13.3

Summary.

Grades.	Number of pupils.			Total examples attempted.			Average examples attempted per pupil.			Total examples correct.		
	White.	Negro.	System.	White.	Negro.	System.	White.	Negro.	System.	White.	Negro.	System.
Fifth grade	1,211	477	1,688	8,023	3,584	11,607	6.6	7.5	6.8	3,790	1,515	5,305
Sixth grade	1,108	328	1,436	5,832	2,398	11,230	7.9	7.3	7.8	4,898	1,218	6,116
Seventh grade	962	260	1,222	8,057	1,858	9,915	8.3	7.1	8.1	5,125	1,309	6,434
Eighth grade	670	127	797	5,999	1,249	7,248	8.9	9.8	9.0	4,153	1,003	5,156

Grades.	Average examples correct per pupil.			Average accuracy.			Total credits.			Average credits		
	White.	Negro.	System.	White.	Negro.	System.	White.	Negro.	System.	White.	Negro.	System.
Fifth grade	3.1	3.1	3.1	48.4	42.2	45.7	3,943.6	1,616.2	5,561.8	3.2	3.4	3.3
Sixth grade	4.3	3.7	4.2	55.4	50.8	54.5	5,516.8	1,504.5	7,021.3	4.9	4.5	4.8
Seventh grade	5.3	5.0	5.2	63.6	70.4	64.9	5,924.9	1,567.8	7,492.7	5.2	6.0	6.1
Eighth grade	6.1	7.9	6.4	69.2	80.2	71.1	4,765.0	1,287.3	6,052.3	7.1	10.1	7.5

Memphis compared with other cities in average credits per pupil.

Cities.	V Grade.		VI Grade.		VII Grade.		VIII Grade.	
	Median pupil.	Average per pupil.	Median pupil.	Average per pupil.	Median pupil.	Average per pupil.	Median pupil.	Average per pupil.
Janesville, Wis. (15,000 population)	2.40	1.89	3.40	2.98	5.50	5.20	6.3	6.48
Butte, Mont. (40,000 population)	2.20	2.44	3.90	4.24	5.80	5.[illegible]	7.7	7.83
Salt Lake City	3.70	4.03	6.40	6.46	8.60	8.[illegible]	10.5	10.44
San Francisco	2.85	2.40	5.52	4.06	5.40	4.96	6.8	6.43
Columbia, S. C.:								
White pupils	.....	5.0	.....	5.0	.....	6.3	.....	5.4
Negro pupils	.....	1.2	.....	2.6	.....	3.4	.....	3.2
Entire system	.....	2.8	.....	4.4	.....	5.6	.....	4.9
Memphis:								
White pupils	.....	3.2	.....	4.9	.....	5.2	.....	7.1
Negro pupils	.....	3.4	.....	4.5	.....	6.0	.....	10.1
Entire system	.....	3.3	.....	4.8	.....	6.1	.....	7.5

REASONS FOR THE POOR SHOWING IN ARITHMETIC.

It is rather difficult to account for the poor showing made by Memphis. It can be safely assumed that the native intelligence of the children of Memphis is equal to that of any other city. Therefore, we must look elsewhere for the explanation. The poor results in reasoning may be due to poor teaching, poor textbooks, too difficult problem material, too many changes in teaching staff, and epidemics which force children out of school.

The textbook used in the schools is the Stone-Millis series, and, as observed before, the course of study used is practically the textbook itself, both as to content and as to method of presentation. It is generally recognized as a good textbook, as textbooks go. It contains excellent drill and problem material. It is a mistake, however, to swallow the text whole. The author of the book has to include in it all the topics and problems which all sorts of educators demand in order to sell the book. This ought to be kept in mind by those in charge of the schools. It is not necessary even to solve all the problems in the book, as now apparently is the plan. The children have to solve so many problems that they have no time to master the thought processes involved.

Much of the problem material is foreign to the experience of the child. He deals with problems involving areas, machines, buildings, and all sorts of things of which he has no conception. In other words, the child can not really read the problems. This aids in making thinking impossible.

The observation of classes led to the conclusion that there was wide variation in attempts to make the work in arithmetic concrete. Many teachers insisted on the children building up new concepts on the basis of direct experience with the objects which were being counted, measured, or calculated. Many teachers, however, were

neglecting the concreting of the ideas which the children were trying to grasp. In the elementary school objectiveness in teaching can scarcely be emphasized too much in the beginning of any new topic.

In number situations the first essential in thinking a problem through is the ability to read well enough and intelligently enough to understand the conditions of the problem. The children ought to have more opportunity to read and explain the conditions of problems before they begin the solutions. There seemed to be too little reading—real reading—of problems by the children themselves.

Many of the classrooms in Memphis are not equipped for good arithmetic teaching. There is very great need of yardsticks, tapelines, liquid and dry measure, scales and weights, geometrical solids and apparatus, and other things of this nature. There is another type of material which is easily obtainable which would facilitate much of the arithmetic. There ought to be on hand for the children's use all sorts of sale slips, deposit slips and blanks, bank books, bills of sale, monthly statements, telegraph blanks, money-order blanks, checks, drafts, and other common commercial papers.

As suggested in several other places, the arithmetic in the Memphis schools would be much more stimulating if the children had courses in manual training, cooking, sewing, drawing, and gardening, in which the children could find practical application of and need for the arithmetical facts which they acquired.

Many of the teachers from overanxiety to have the children "get" the problem have developed the habit of interfering and aiding throughout the solution of problems. Having once given the child a good problem, it is essential for learning how to think to require the child to think and to think for himself. This is the commonest fault of all teachers everywhere.

There does not seem to be a conscious effort on the part of teachers generally to train the children to think.

4. THE TEACHING OF READING, LANGUAGE, AND LITERATURE.

THE SILENT READING TEST.

To test the reading ability of the children in the elementary schools of Memphis, the Standardized Silent Reading Tests, Form 2, devised by Walter S. Monroe, were given. This test, which is given here to indicate its character, is a test of both speed and comprehension in reading. The test was given in all white and colored schools in grades 3 to 8, inclusive.

GRADES 3, 4, AND 5.

City_____ State_____ Date_____
Pupil's name_____ Age_____ Grade_____
School_____ Teacher_____

DIRECTIONS FOR GIVING THE TEST.

After telling the children not to open the papers, ask the children on the front seats to distribute the papers, placing one upon the desk of each pupil in the class. Have each child fill in the blank space at the top of this page. Then make clear the following:

INSTRUCTIONS TO BE READ BY TEACHER AND PUPILS TOGETHER.

This brief test is given to see how quickly and accurately pupils can read silently. To show what sort of test it is, let us read this:

I am a little dark-skinned girl. I wear a slip of brown buckskin and a pair of soft moccasins. I live in a wigwam. What kind of girl do you think I am?

Chinese French Indian African Eskimo

The answer to this exercise is "Indian," and it is to be indicated by drawing a line around the word. The test consists of a number of exercises like this one. In some of the exercises you are told to draw a line around the word which is the right answer, or to mark it in some other way, and in some you are to write out your answer. If an exercise is wrong it will not count, so it is wise to study each one carefully until you know exactly what you are asked to do. The number of exercises which you can finish thus in five minutes will make your score, so do them as fast as you can, being sure to do them right. Stop at once when time is called. Do not open the papers until told, so that all may begin at the same time.

The teacher should then be sure that each pupil has a good pencil or pen. Note the minute and second by the watch and say, BEGIN.

ALLOW EXACTLY FIVE MINUTES.

Answer no questions of the pupils which arise from not understanding what to do with any given exercise.

When time is up, say STOP and then collect the papers at once.

No. 1 (Rate value 9; comprehension value 1.1).—

The little red hen was in the farmyard with her chickens, when she found a grain of wheat. "Who will plant this wheat?" she said.

Draw a line under the word which tells where the little red hen was.

barn chicken house feed bin farmyard

No. 2 (Rate value 9; comprehension value 1.1).—

Nowhere in the world do the children have so many good times as in Japan. They are allowed to play anywhere, and there are all sorts of toys and games for their amusement.

Are the children of Japan happy? Answer with "Yes" or "No."

No. 3 (Rate value 6; comprehension value 1.3).—

I have red, yellow, and blue flowers in my hand. If I place the red and yellow flowers on the chair, which color do I still have in my hand?

No. 4 (Rate value 7; comprehension value 1.4).—

A donkey, a cat, and a dog went for a walk. After a long time they came to a farmyard. A rooster stood on the gate, crowing and screaming.

Where was the rooster?

No. 5 (Rate value 5; comprehension value 1.4).—
Ruth and Frank were two little children who lived in the country. They were happy, healthy little people.
Where did Ruth and Frank live?

No. 6 (Rate value 5; comprehension value 1.5).—
The teacher told James to buy a book, pencil, tablet, and eraser. He bought the book, tablet, and eraser, but forgot the others.
Which did he forget?

No. 7 (Rate value 11; comprehension value 1.7).—
The door opened and in came a dog. The mice jumped off the table and ran into the hole in the floor. The poor little Country Mouse was so frightened!
What frightened the mice?
Draw a line under the word that tells what it was that frightened the mice.

boy woman cat trap man dog wind

No. 8 (Rate value 9; comprehension value 1.8).—
The wolf put his paws on the windows. When the goslings saw the white feet they thought it was their mother. They opened the door, and in came the wolf.
What did the goslings think it was at the door?

wolf father chicken dog mother

No. 9 (Rate value 8; comprehension value 2.3).—
Here the conversation was interrupted by the approach of a small one-horse buggy to the inn. A well-dressed, gentlemanly man sat on the seat, with a colored servant driving.
How many people does it tell us were in the buggy?

No. 10 (Rate value 7; comprehension value 2.1).—

"The golden rod is yellow,
The corn is turning brown,
The trees in apple orchards
With fruit are bending down."

Draw a line under the season of the year you think is pictured in this stanza.

autumn spring winter summer

No. 11 (Rate value 14; comprehension value 2.4).—
The western part of the United States was not settled till much later than the eastern. The discovery of gold quickly drew many settlers to California, and, as the search for the precious metal was carried farther, the entire West soon became explored and settled.
Draw a line under the one word in the paragraph above that tells what it was that caused the western part of the United States to be settled.
No. 12 (Rate value 5; comprehension value 2.5).—
Eggs and chickens are seen at Easter time in many countries, but the hare is more often seen in Germany than in any other country.
In what country do they have the hare at Easter?

No. 13 (Rate value 8; comprehension value 2.6).—

In one corner of the cabin stood a bed, covered neatly with a snowy spread, and by the side of it was a piece of carpeting of some considerable size.

What was it that stood in one corner of the room?

No. 14 (Rate value 10; comprehension value 2.8).—

On the ground the apples lie
In piles like jewels shining.
And redder still on old stone walls
Are leaves of woodbine twining.

What time of the year is pictured? If spring, draw a line under "winter." If not, draw a line around the right season.

spring summer fall winter

No. 15 (Rate value 10; comprehension value 3.5).—

If we had no more birds in the summer than we have in winter, we should suffer very much from insects. We could not raise fruit, vegetables, or grain, for the insects would eat it all.

Draw a line under the word that tells what the birds destroy.

winter fruit grain insects summer

GRADES 6, 7, AND 8.

The directions for giving the test were the same as for the 3, 4, and 5 grades. The questions follow:

No. 1 (Rate value 9; comprehension value 2.0).—

Mrs. Bird was a timid, blushing little woman about 4 feet in height, and with mild blue eyes, and a peachblow complexion, and the gentlest, sweetest voice in the world.

How tall was Mrs. Bird?

No. 2 (Rate value 7; comprehension value 2.1).—

Carbon dioxide is injurious to people. Plants give off carbon dioxide at night and take it up in the daytime.

Is it a good plan to have plants in the room where you sleep?

No. 3 (Rate value 13; comprehension value 2.7).—

Everyone hates a tattler. The tattler is the object of disgrace on any playground. But everyone respects a truth-teller when wrong has been done. A little girl of 9 was brought into court as a witness to tell all she knew of a crime that had been committed.

Will she be disgraced if she tells what she knows? Answer "Yes" or "No."

No. 4 (Rate value 14; comprehension value 2.8).—

England is the southern and Scotland is the northern part of the island called Great Britain. England is larger than Scotland, and the land is much richer, and produces better crops. Scotland is full of hills and wilderness, which bear no corn, and afford but little food for sheep or cattle.

From reading the above paragraph in which country would you think there would be the most people?

England Scotland

No. 5 (Rate value 11; comprehension value 3.2).—

The caravan, stretched out upon the desert, was very picturesque; in motion, however, it was like a lazy serpent. By and by its stubborn dragging became intolerably irksome to Balthasar, patient as he was.

Place a line under the word which tells in what respect the caravan resembled a serpent.

color length motion size

No. 6 (Rate value 19; comprehension value 3.3).—

It was the garden-land of Antioch, with not a foot lost to labor. Even the hedges, besides the lure of shade, offered passers-by sweet promises of wine and clusters of purple grapes. Over melon patches, and through apricot and fig tree groves, and groves of oranges and limes, the whitewashed houses of the farmers were seen.

Draw a line under the word given below that tells what kind of land this was.

barren hilly productive infertile desert

No. 7 (Rate value 16; comprehension value 3.7).—

Down swept the chill wind from the mountain peak,
From the snow five thousand summers old;
It carried a shiver everywhere
From the unleafed boughs and pastures bare;
The little brook heard it and built a roof
'Neath which he could house him winter-proof;
All night by the white star's frosty gleams
He groined his arches and matched his beams.

Draw a line under the word that you think the brook might build a roof of.

shingles paper grass ice wood

No. 8 (Rate value 12; comprehension value 3.7).—

Judah walked to the pilot's quarter. So absorbed was he in thought that he scarcely noticed the shores of the river, which were surpassingly beautiful, with orchards of fruits and vines.

If he is interested in the beauties around him, put a line under beautiful; if these beauties have no interest for him, put a line under shadow.

beautiful shadow

No. 9 (Rate value 14; comprehension value 3.8).—

Her couch was dressed with here and there some winter berries and green leaves, gathered in a spot she had been used to favor. "When I die, put near me something that has loved the light, and had the sky above it always." Those were her last words.

Draw a line under the word that names what the girl had loved most.

pretty clothes nature money candy to play

No. 10 (Rate value 18; comprehension value 4.0).—

As a race, the Indians have withered from the land. Their arrows are broken, their council-fire has long since gone out on the shore, and their war cry is fading to the untrodden West. Slowly and sadly they climb the distant mountains, and read their doom in the setting sun. They must soon hear the roar of the last wave which will settle over them forever.

Draw a line under the word which you think tells best how the Indians feel.

happy angry excited sad tired

No. 11 (Rate value 8; comprehension value 4.1).—

Blow, blow, thou winter wind,
Thou art not so unkind
As man's ingratitude;
Thy tooth is not so keen,
Because thou art not seen
Although thy breath be rude.

In the above paragraph with what is the wind compared?

No. 12 (Rate value 11; comprehension value 4.6).—

In front the purple mountains were rising up, a distant wall. Cool snow gleamed upon the summits. Our horses suffered bitterly for water. Five hours we had ridden through all that arid waste without a pause.

Draw a line under the word below that tells what kind of a country these people had been riding through.

mountainous swampy desert forest.

No. 13 (Rate value 10; comprehension value 4.7).—

Tracking was very difficult. As there was total absence of rain, it was next to impossible to distinguish the tracks of two-days' date from those most recent upon the hard and parched soil.

Draw a line under the word below that tells what it was that made tracking difficult.

mud snow drougth rocks grass

Results of the reading test tabulated.

[Median scores—Rate and comprehension.]

WHITE SCHOOLS.

	Grades.																	
	III.			IV.			V.			VI.			VII.			VIII.		
	Number of pupils.	Rate score.	Comprehension score.	Number of pupils.	Rate score.	Comprehension score.	Number of pupils.	Rate score.	Comprehension score.	Number of pupils.	Rate score.	Comprehension score.	Number of pupils.	Rate score.	Comprehension score.	Number of pupils.	Rate score.	Comprehension score.
Bruce	76	68.0	7.7	62	77.4	12.6	111	106.0	19.0	87	101.3	14.7	90	103.0	18.0	65	115.5	19.9
Church Home	10	56.0	11.0	11	104.3	16.6	5	78.5	13.7									
Cummings	77	67.0	8.2	71	96.0	16.7				65	160.0	15.6				28	160.0	18.0
Gordon	55	116.0	12.8	54	88.0	14.8	51	108.0	18.3	39	114.3	18.8	30	148.5	24.8	22	115.3	23.3
Guthrie	74	70.1	9.0	63	103.5	11.6	38	76.4	10.7	57	151.0	20.0				36	137.6	27.9
A. B. Hill	99	78.8	10.0	59	72.5	9.6	105	90.3	13.2	68	103.2	10.6	57	104.3	15.8	45	132.8	19.5
Idlewild	61	67.6	7.3	78	92.2	15.8	74	91.7	15.0	77	114.5	19.7	69	115.8	21.0	53	158.5	21.0
Lauderdale	81	65.3	8.8	92	81.0	14.3	93	87.1	14.8	61	111.6	20.6	75	111.4	21.4	67	115.5	27.0
Leath	76	69.3	6.7	95	79.8	11.2	59	94.3	17.6	57	132.3	21.0	41	113.5	18.4	34	131.0	10.7
Leath Orphanage	6	51.0	9.0	9	63.5	14.0												
Lenox							28	82.3	14.0	35	115.3	15.6	43	131.0	31.7	31	113.5	16.5
Madison Heights	55	80.0	12.0	33	96.0	14.1	35	87.7	15.0	53	148.1	26.7	39	154.8	30.0	31	160.0	29.0
Maury																		
Merrill	86	61.0	7.4	77	99.6	12.2	89	87.3	14.9	70	102.2	15.0	44	103.9	12.0	31	131.0	19.5
Peabody	57	66.6	7.6	71	89.5	13.2	54	84.0	13.0	63	111.7	14.0	42	111.8	20.0	36	131.0	18.8
Pope							74	89.6	14.8	62	104.6	16.1	25	151.0	25.3	13	160.0	30.0
Riverside	93	66.3	9.0	80	72.0	11.6	95	112.4	14.5	48	103.5	18.5	35	136.0	11.0	13	112.3	10.2
Rozelle	45	69.3	11.0	66	79.7	12.3	54	98.0	14.6	43	135.2	27.3	52	118.5	22.5	26	138.5	22.0
Smith	27	131.0	27.5	33	90.0	12.8	71	96.5	15.6	61	118.0	13.2	30	102.7	16.0	25	160.0	27.8
Snowden	37	80.0	12.0	56	81.0	14.8	42	121.3	23.6	38	133.6	21.0	37	160.0	32.0	26	153.0	29.5
St. Paul	53	55.4	5.3				38	69.0	11.6	45	141.0	25.5	35	133.8	18.4	22	154.3	18.0

Results of the reading test tabulated—Continued.

NEGRO SCHOOLS.

	Grades.																	
	III.			IV.			V.			VI.			VII.			VIII.		
	Number of pupils.	Rate score.	Comprehension score.	Number of pupils.	Rate score.	Comprehension score.	Number of pupils.	Rate score.	Comprehension score.	Number of pupils.	Rate score.	Comprehension score.	Number of pupils.	Rate score.	Comprehension score.	Number of pupils.	Rate score.	Comprehension score.
Caldwell	23	77.3	12.8	24	67.3	13.0	9	81.0	16.5	7	66.0	39.0	.....	.....	.....	.....	.....	.....
Carnes	.....	.....	.....	.....	.....	.....	50	92.3	15.5	.....	.....	.....	.....	.....	.....	.....	.....	.....
Charles Avenue	.....	.....	.....	6	123.5	20.0	9	116.0	27.0	5	126.0	35.0	.....	.....	.....	.....	.....	.....
Grant	74	63.5	12.8	64	122.1	16.6	49	78.1	13.4	35	51.8	9.9	67	74.6	10.4	41	89.0	14.5
Greenwood	.....	.....	.....	47	89.6	8.0	50	92.7	14.4	26	136.0	15.0	23	145.0	26.4	.....	.....	.....
Klondike	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Kortrecht Grammar	63	65.5	9.8	63	123.9	15.8	53	105.0	16.2	45	75.4	10.6	13	137.6	23.0	.....	.....	.....
La Rose	148	78.4	14.9	100	89.3	11.9	85	103.5	14.3	61	98.0	10.7	32	123.5	9.2	.....	.....	.....
Porter	79	121.0	14.8	67	123.6	25.8	47	124.0	22.0	.....	.....	.....	25	151.0	18.0	.....	.....	.....
Virginia Avenue	72	67.3	7.1	65	70.5	11.8	65	91.0	15.0	56	91.0	6.7	12	55.2	11.0	.....	.....	.....

Comparison of standard median scores with median scores of Memphis.

	White, Negro, and entire system, by grades.																	
	III.			IV.			V.			VI.			VII.			VIII.		
	Total number of pupils.	Rate score.	Comprehension score.	Total number of pupils.	Rate score.	Comprehension score.	Total number of pupils.	Rate score.	Comprehension score.	Total number of pupils.	Rate score.	Comprehension score.	Total number of pupils.	Rate score.	Comprehension score.	Total number of pupils.	Rate score.	Comprehension score.
Standards	5,638	66.1	8.8	5,651	77.3	14.8	5,435	90.4	19.4	4,915	90.6	20.9	3,886	98.2	24.4	3,030	107.8	28.5
Memphis white schools	1,021	68.0	8.9	1,010	80.1	13.2	1,098	91.3	14.8	1,029	113.2	37.2	750	114.7	20.6	613	136.6	32.9
Memphis Negro schools	459	76.7	11.6	438	92.4	13.0	417	96.0	15.5	235	74.5	10.1	172	111.6	11.9	41	89.0	14.0
Entire system	1,480	70.0	9.7	1,448	80.8	13.1	1,515	92.4	14.9	1,264	112.8	16.1	922	114.3	19.5	654	134.6	21.0

Certain schools and individual grades had to be excluded for various reasons. It is our belief that the results are reasonably dependable in spite of the fact that the teachers who gave the tests had had little experience in giving tests of this sort. The results were checked as closely as possible.

INTERPRETATION OF RESULTS.

White schools—Comprehension.—The third grades as a group are just a little above the general standard; the fourth grades are below standard, but not far below; the fifth grades just reach fourth-grade standard; the sixth grades reach a score half way between fourth and fifth grade standards; the seventh grades fail to reach sixth-grade standard; while the eighth grades fail to reach seventh-

grade standard. On the whole, each grade is about a year behind what it ought to do.

White schools—Rate.—Each group of grades exceeds the standard for the grade.

Negro schools—Comprehension.—The Negro schools are above standard only in the third grade. They excel the white schools in the third and fifth grades only.

Negro schools—Rate.—As in the white schools, the Negro schools excel the standards for each grade and exceed the white schools in the third, fourth, and fifth grades, but fall behind the white children in the upper grades.

The entire system—Comprehension.

Memphis grades.		Standard grade.
Third	Reached	Third.
Fourth	Below	Fourth.
Fifth	Reached	Fourth.
Sixth	Slightly above	Fourth.
[illegible]nth	Equals	Fifth.
[illegible]h	Slightly above	Sixth.

The entire system—Rate.—The reading rate in the third, fourth, and fifth grades seems normal, while in the sixth, seventh, and eighth grades far above the standards.

On the whole, the children seem to read too fast and too superficially. Many of the schools appear to have attained far better results in silent reading than others, largely because some of the teachers practice silent reading with the children while others do not. The results show a most imperative demand for supervision and adequate instruction upon the proper method in reading. Calling words rapidly is not reading.

METHODS USED IN TEACHING READING.

The prevailing custom in the reading recitation is to have the children stand on the floor around or at the side of the room. They lean against the wall and appear lifeless and uninterested. They read in turn around the class, often one child "going above" another because of the failure of a child to pronounce or call a word correctly. Many children were noted "counting down the line" in order to discover their number that they might select the paragraph that would be likely to fall to them, devoting themselves to the silent reading thereof in order that they might read their assignment well. There is no questioning on the part of the teacher to bring out the thought or beauty of the selection read, nor effort made to discover the comprehensive understanding of the children regarding what is read. There is no work of commendation to encourage the pupil in his effort to read well. Comments such as "John, read," "Vir-

ginia, next"; "That word in the second line is magnifi*cent*, not magnifi*cence*. You must be more careful about your words"; "If you watched your pauses, you would read better"; "You must study harder on your reading at home"; "We went over all these new words yesterday; you ought to know them"; "Who noticed a mistake"; "Any criticisms," etc., were so common that the rare exception found where children were reading for joy, appreciation, and understanding leads us to believe that little or no thought is given to the aims and purposes of teaching reading, nor to the methods of instruction.

Reading over the lessons with the children and teaching them to pronounce the difficult words in order that they may take their books home and return to school the next day to read the selection, "call the words," is not teaching children to read but hearing them read. Dull grind upon words will not make good readers in any sense. Interest is fundamental.

As has been pointed out, the mastery of the mechanics of reading must be secured in the lower grades. From the fourth grade on through the elementary schools the conscious effort of acquiring the art of reading in the primary grades has been expanded into the search for information and a cultivation of beauty, appreciation, and discrimination between good and bad literature. The reading period is the teacher's opportunity to open the doors of the children's minds to the richness and beauty of the finer things of life as expressed in song and story.

THE IMPORTANCE OF READING.

Reading is beyond comparison the most important of the conventional school exercises, not only because it provides the key for advancement in other departments of school in gaining information, but because it is the key to the world's great literature and acquaints us with the master minds in all fields of knowledge. "Reading is interpreting symbols, imaging the ideas, and thinking the thoughts symbolized."

From the fourth grade through the sixth the main work is to provide such material and motive that reading is still a delight. The exercises which are assigned during the period should be as varied in character as are the demands which are made upon the reader, both in and out of school.

Both oral and silent reading procedures should be continued from grades four through six by the assignment of independent study at the seats. For example, outlining on the blackboard, through a series of questions very definite things to be discovered or determined in silent reading, which during the recitation period

should be used for testing thought; getting thought discussions and reproduction of the text, for quickening the reading pace; for testing retention content; and for oral reading.

The material should be mainly literary, though much should also correlate with civics, history, geography, nature study, and hygiene. In addition to a good basal text, there should be required the reading of, at least, two sets of supplementary readers for each of these grades. Books to be read for the joy and pleasure of reading. These books should be continued stories. For example, such stories as "Heidi," Kingsley's "Water Babies," "The Viking Tales," "Robinhood," "Two Years Before the Mast," "The King Arthur Tales," "Evangeline," and the like. The readers now assigned to these grades are not of such a character as to stimulate an interest in reading or a desire to read.

In grades seven and eight, emphasis in the reading period should be upon the reading and study of literature, poetry, and prose. This type of literature evolves the necessity of a teacher of breadth and culture, possessing a sympathetic spirit—one who can catch the author's feeling as well as comprehend his thought. Children in these years can be led to appreciate phases of sentiment in selections read, by first reading selected short passages from a long selection. For example, the cheerful sentiment as expressed in the first line of Whittier's "To a Barefoot Boy"; the humorous in Cowper's "John Gilpin's Ride"; the tender feelings of Tennyson's "Sweet and Low"; a thrill of patriotism in Macaulay's "Horatius"; the dramatic appeal of Shakespeare's "Julius Cæsar"; and the serious thought of the earlier stanzas of Gray's "Elegy Written in a Country Churchyard."

Children should not be required or expected to read and reread a school reader. The rereading of a book should come from the impelling interest in the story, which prompts the desire. Skill and power in reading is acquired by reading many books.

The reading lesson, of all the lessons of the day's program, should be a pleasure and not a task. It should always be reading to get at the thought and spirit of what is read—a careful and sympathetic study of the selection.

THE TEACHER'S PREPARATION.

Careful preparation of the reading lesson on the part of the teacher is as important as careful preparation for the history lesson. She must carefully study the selection that she may become acquainted with its beauty; and she must know the difficulties which her pupils will encounter. She must know the words that are new, the familiar words in unfamiliar meanings, the phrases that are puzzling, the peculiar customs and institutions not found in the

child's own experience, and the situations and conduct that challenge and bewilder the child's own ethical judgment. She must know how to overcome all of these and along what road she will lead her pupils in the mastery of them.

We recommend that the teachers make a study of a few of the fine books that have been written on the subject of reading, such as Huey's "Psychology and Pedagogy of Reading," Klapper's "Teaching Children to Read," and Briggs' and Coffman's "Reading in Public Schools."

It will be helpful to teachers of every grade if they can answer affirmatively each of the following questions:

1. Do you make careful preparation for your reading recitation?
2. Do you know all of the new and difficult words and word groups in the lesson, and have you a plan for the development of the same?
3. Do you insist upon the standard in your recitations which will bring a permanent result—for example, (*a*) silent reading for thought getting; (*b*) oral reading (and oral reproductions) for thought giving?
4. Do you insist upon the good expression of every thought read?
5. Do you question for expression?
6. Do you insist on good, clear, distinct enunciation and pronunciation?
7. Do you talk with your pupils about the story at the close of the recitation, often calling attention to the beautiful passages in the lesson?
8. Do you have occasional sight-reading lessons for testing your pupils' power?
9. Do you have daily phonetic and vocal drill for enunciation and pronunciation?
10. Are your pupils intelligent readers?
11. Can your pupils read anything of equal grade as intelligently as they do their own readers?
12. Are your pupils able to reproduce selections read, connectedly?

ENUNCIATION AND PRONUNCIATION.

We recommend that more attention be given to the glaring weakness in the ability of children to enunciate clearly and pronounce clearly and distinctly the spoken word, which is a general weakness of the American people. Pupils should have daily practice in repeating elementary sounds, also in pronouncing the consonant combinations composed of these sounds. Without clear and distinct articulation there can be no correct pronunciation. This fault can only be corrected by continuous drill exercises, which will make for correct habits. Faulty enunciation may be due to some defect of the vocal organs. Faulty pronunciation to carelessness or ignorance, pure and simple. To correct these errors should be the object of a definite period of the day, for they are serious defects.

Faulty articulation may arise from several causes: (*a*) The omission of a sound (histry for history); (*b*) the use of more sound than is necessary (ca'Ow for cow); (*c*) substitution of the wrong sound (jist for just).

A well-graded scheme for phonetics, including exercises for drills in articulation, enunciation, pronunciation, and open tone, would greatly improve the reading in the schools. This should be built upon the system of phonics developed for the lower grades.

THE NEED FOR TRAINING IN THE USE OF LANGUAGE.

The aim or object of language instruction in the earlier years of school is not to give the children a technical knowledge of grammatical construction, but to train them to facility, accuracy, forcefulness, and elegance of expression in oral speech and in writing, to cultivate a discriminating taste as to literature, and the ability and tendency to read good books with intelligent appreciation.

The fundamental reason for teaching language, insisting upon its proper use, rests upon the intimate relation of thinking and expression. Clear and accurate thinking and clear and accurate expression are mutually dependent, hence, it must follow that the power to think clearly and logically is very imperfect when expression is imperfect.

English language composition is the most important subject taught in our schools because it is the basis of all thinking; and consequently of all subjects of knowledge. It should be cultivated to as high a degree as possible for the purpose of thought training and organization, and in order that we may have the power of communicating our thoughts and feelings to our fellow beings.

How does a child naturally learn to use language? At first altogether and always chiefly by sheer imitation. There is no other way than this. Vocabulary is a matter of memory. The "art of language consists in using the remembered vocabulary in artistic and effective combinations, and such combinations are for the most part imitations."

Language is a habit. The child learns to talk by adopting for his own vocabulary and style the colloquial speech which he hears.

THE VALUE OF FACILITY IN ORAL SPEECH.

Of the two phases of language work, oral and written composition, oral speech and conversation are the more important to the majority of the children of the public schools. The best gift with which we can send children into active life is the ability to talk intelligently and entertainingly. There is too much writing and too little talking demanded in the schools. To stand on one's foot and tell what one knows is as valuable as it is rare, for in a country like ours, governed by the people, the value of the power to express thought can hardly be overestimated. People convene in caucuses, mass meetings, church meetings, school meetings, commercial clubs, county conventions, etc., to confer upon questions of vital interest to the individual, the family, and the State. How often, at such gather-

ings, a person who has intelligent and well-defined views and who fairly burns with a desire to make his opinions known is compelled to remain silent because he has not acquired the art of speaking in the presence of his peers upon subjects with which he is perfectly familiar.

Oral exercises should be planned so as to afford opportunities for vigorous and interesting expression. By such exercises there may be obtained much practice in good style and sentence construction so that many of the mistakes and weaknesses commonly seen in written expression can be anticipated and prevented. The literature, reading, history, geography, nature study, games, and activities demand from the pupil extended and connected speech. In these subjects the topical recitation should be practiced, the children talking from an outline.

The telling of stories and anecdotes is instructive and affords a wholesome amusement. At times as an application of silent reading or thought getting, stories in literature and history (after proper preparation) may profitably be read independently by the pupils and reproduced in informal short talks to the class. Reports on home reading, on traveling, or on adventure are also interesting. Individual contributions of stories new to the class, putting the pupil in the position of an actual story teller, also stories of personal experience of interesting happenings at school, at home, and on the street, cultivate not only the imagination but are aids to the development of good literary style.

The description and explanation of games, objects of nature study, places, persons, and the operations and processes of agriculture and manufacturing industry, so far as the grade work offers opportunities, are strong stimuli for oral expression.

There should be patriotic stories read and told in connection with the celebration of holidays. The dramatization of suitable stories and poems and the presentation of simple plays, based on literature and history stories that the pupils themselves have composed, should be encouraged.

In oral exercises whether the pupil is talking from notes or without notes he should be led to keep to his subject and to proceed clearly and coherently. In all oral work and particularly in the telling of stories note the natural parts of a subject as instruction toward good planning and paragraphing. Often in the retelling of stories different parts at times should be given by different pupils. Throughout the year, in conducting the oral English lessons, there should be kept in mind the specific needs of the pupils.

HABIT DETERMINES THE FORM OF SPOKEN LANGUAGE.

In the earlier stages of a child's learning language, rules are ineffective. With advancing maturity and logical powers they become

increasingly more important as clinching and putting into convenient and condensed form the principle and language customs that have already been demonstrated and imitated by the learner. Only when they record experience are these rules of great value—a fact that should bear directly on our method of teaching.

The first essentials in teaching language to children are good models to imitate and good thought to express with the desire to express it.

Before a child comes to school his models are chiefly the oral speech of the family and his playmates. Among the members of any class entering schools there are wide differences of vocabulary both in extent and character. In the first few years of the school life the teaching of language is mainly incidental, and undoubtedly for this very reason especially effective. The source of a new vocabulary and the materials from which to draw for the development of a new vocabulary are vast, the range of experiences which may be grouped or classified as personal, social, and industrial as well as all the subjects of the school curriculum contributing to this end.

We may bend every effort to the breaking point to eliminate objectionable words, phrases, and idioms, and to secure clearness of expression for the purpose of clearness and accuracy of thinking, we may possibly give a sort of veneer to the language by constant drill on correct models, but we shall develop no permanent power in the use of language, without coming to a full realization that, (1) the mere form of correct and elegant English is of no value if there is no thought in it, and, (2) also we must believe to the knowing point that if written language is forced before there is sufficient mastery of the oral, that the result is arrested development; (3) and foremost and above all, we must not ask the pupils to think on an empty mind.

We may drill parrot-like on correct forms, we may emblazon our blackboards with them to appeal to the sense of sight, we may fill in blanks with the correct word, until the trick seems automatic, we may call for original sentences from barren ground until the verbs, "go," "see," and "to be" are threadbare, we may have dictation work and copying by the page, we may teach the kinds of sentences and the parts of speech, but when it comes to the actual everyday living experience our pupils are going to talk with their spinal cords instead of their brains, they are going to do that which habit in their real (not school) life has fastened upon them and they are going to say *blowed* for *blow*, *me* for *I*, and *aint got no* for *have no*, *have went* for *have gone*, etc.

Furthermore, these incorrect forms belong to spoken language, and if ever overcome it must be by establishing right habits in spoken language.

The great majority of people have less use for written language than is generally supposed. Everyone needs spoken language, the humblest laborer as well as the professional man, and the speech is not only a criterion by which his social qualities may be determined, but an index to his character, an index to his thinking. Spoken language is easier to correct and of more consequence to the average person.

The amount of oral language work in the Memphis schools should be increased until it stands three to one. So intimate is the reciprocal relation of spoken and written language that after a correct oral form has been acquired the correct written form will usually follow.

If no attempt is made to force technique upon pupils before it is needed, teachers will find their work better, the difficulties reduced in number and easily classified. As difficulties arise and definite instruction is required, such instruction should be given in definite lessons and repeated until the points are made perfectly clear and right habits started.

John Locke expressed an important principle when he said, "What you think it is necessary for children to do, settle in them by indispensable practice." Imitation, practice, and habit—not rules, formulas, and definitions—should be in the mind of the teacher of English. "It is constant use and practice under never-failing watch and corrections that make good writers and speakers." By the above means the English in any school may be made effective, and effective English work in one school makes possible such work in all schools.

GRAMMAR IN THE ELEMENTARY SCHOOLS.

Grammar is too greatly emphasized in the Memphis schools. Grammar looks to words and their classification. It has its place in the high school and college but as a part of practical education such as is intended to be given in the elementary school it has but little place. However, throughout the grades many facts regarding the structure of language can be taught incidentally, but anything approaching a systematic study of the generalizations of grammar should certainly be deferred to the upper grades at least. The following outline comprises all that the staff would recommend for the sixth, seventh, and eighth grades.

Sixth grade:

1. Kinds of sentences—as to use—drill in construction of sentences.
2. Nouns—common, proper.
   (a) Number.
   (b) Gender.
3. Pronouns—personal. Much drill for ear training on such forms as "It is I," "It is he," "If I were you, I would go."
4. Verbs—recognize; use in sentences.

Sixth grade—Continued.

5. Adjectives—recognize; use in sentences; use of articles a-an.
6. Adverbs—recognize; use in sentences.
7. Distinguish between adjectives and adverbs.
8. Prepositions and prepositional phrases.
9. Conjunctions—recognize; illustrate.
10. Interjections—recognize; illustrate.
11. Expletives—recognize; illustrate.

Seventh grade:

1. The noun.
   - (*a*) Definition or test.
   - (*b*) Classes—common and proper; study of capitalization.
   - (*c*) Inflections or properties.
     - (1) Gender—drill on correlatives in gender.
     - (2) Person—drill in use of comma with first person.
     - (3) Number—drill on formation of plurals.
     - (4) Case—points to be emphasized. Case and case relation. Formation of possessives. Syntax.
2. The pronoun.
   - (*a*) Definition or test.
   - (*b*) Classification.
     - (1) Personal—drill on declension and syntax. Use of compound personal.
     - (2) Relative.
     - (3) Interrogative—drill on expressions similar to the following: "To whom are you speaking?" "Whom did you see?"
     - (4) Adjective—drill on use of this, that, these, those.
3. Points for special study on the pronoun.
   - (*a*) Declension.
   - (*b*) Case and case relation.
   - (*c*) Syntax.
4. Clauses as to use.
   - (*a*) Adjective—the relative pronoun; declension, case, and case relation to be taught in connection with the adjective clause.
   - (*b*) Adverbial.
   - (*c*) Noun.

[illegible]rade:

1. Sentences as to form.
   - (*a*) Simple.
   - (*b*) Compound.
   - (*c*) Complex.
2. Verbs as to use—Intransitive, copulative, transitive.
3. Complements.
   - (*a*) Attribute, object, factitive.
   - (*b*) In connection with the complements teach the case relation of nouns and pronouns; also the use of adjectives with the attribute and factitive.
4. Indirect object (objective or dative case). Teach case and case relation to indirect object.
5. Study of prepositional phrase.
6. Participles and infinitives.
7. Special study of adjective, adverb, preposition, conjunction, and interjection.

5. THE TEACHING OF SPELLING.

THE AYRES SPELLING TEST.

In testing the spelling ability of the children of the Memphis schools the Ayres Spelling Scale was used. The scale is made up of 1,000 words most commonly used in correspondence, business, and books. The words are arranged in groups in order of difficulty as determined by tests given in 84 cities. Ten words were given each grade, each test being selected from the group of words upon which the grade average for 84 cities was 73 per cent. In other words, each grade in Memphis was given a spelling test upon which thousands of children in the United States in corresponding grades had averaged 73 per cent. The tests used are as follows:

Second Grade.	Third Grade.	Fourth Grade.	Fifth Grade.
1. Nine.	1. Catch.	1. Eight.	1. Sometimes.
2. Got.	2. Able.	2. Aboard.	2. Period.
3. Spring.	3. Fell.	3. Restrain.	3. Firm
4. Stone.	4. Soap.	4. Population.	4. Crowd.
5. Fall.	5. Express.	5. Figure.	5. Relative.
6. Put.	6. Table.	6. Everything.	6. Serve.
7. Monday.	7. Road.	7. Farther.	7. Due.
8. Take.	8. Power.	8. Knew.	8. Ledge.
9. Its.	9. Another.	9. Fact.	9. Information.
10. Sold.	10. Church.	10. Public.	10. Present.

Sixth Grade.	Seventh Grade.	Eighth Grade.
1. Often.	1. Meant.	1. Organization.
2. Total.	2. Distinguish.	2. Emergency.
3. Examination.	3. Assure.	3. Appreciate.
4. Marriage.	4. Probably.	4. Sincerity.
5. Opinion.	5. Responsible.	5. Athletic.
6. Witness.	6. Difficulty.	6. Extreme.
7. Theater.	7. Develop.	7. Practical.
8. Supply.	8. Material.	8. Proceed.
9. Course.	9. Senate.	9. Cordially.
10. Doubt.	10. Agreement.	10. Character.

Results of spelling test in white schools.

Schools and grades.	Boys.	Words correct.	Per cent correct.	Girls.	Words correct.	Per cent correct.	Total pupils.	Total words correct.	Per cent correct.
Bruce School:									
Grade II	45	334	78.6	35	274	78.2	80	608	78.0
Grade III	41	335	81.7	33	294	89.0	74	629	85.0
Grade IV	33	265	80.3	34	312	91.7	67	577	86.1
Grade V	55	463	84.1	65	564	86.7	120	1,027	85.0
Grade VI	45	341	75.7	45	369	82.0	90	710	78.8
Grade VII	48	355	73.9	51	420	83.0	99	775	77.0
Grade VIII	32	233	72.8	28	222	80.0	60	455	76.0
Total	299	2,326	78.4	301	2,486	84.0	600	4,812	81.2
Church Home:									
Grade II	1	26	26.0	3	88	88.0	4	84	90.0
Grade III	2	20	100.0	3	78	86.0	10	98	96.0
Grade IV	1	8	80.0	10	90	90.0	11	98	89.0
Grade V				5	42	84.0	5	42	84.0
Grade VI									
Grade VII									
Grade VIII									
Total	4	54	90.0	26	298	88.4	30	352	89.2

Results of spelling tests in white schools—Continued.

Schools and grades.	Boys.	Words correct.	Per cent correct.	Girls.	Words correct.	Per cent correct.	Total pupils.	Total words correct.	Per cent correct.
Cummings School:									
Grade II	43	321	74.6	33	222	67.3	76	543	71.4
Grade III	37	334	90.2	40	345	86.2	77	679	88.2
Grade IV	54	276	83.0	36	276	76.6	70	552	78.8
Grade V	32	221	69.0	40	306	76.5	72	527	73.2
Grade VI	23	182	79.1	38	331	87.0	61	513	84.0
Grade VIII	17	136	80.0	26	218	83.0	43	354	82.0
Grade VIII	9	82	91.0	18	172	95.0	27	254	94.0
Total	195	1,552	79.5	231	1,870	80.9	426	3,422	80.3
Gordon School:									
Grade II	21	172	82.0	18	160	89.0	39	332	84.0
Grade III	27	258	95.0	30	283	94.0	57	541	94.0
Grade IV	33	253	76.0	25	188	75.2	58	441	76.0
Grade V	26	204	78.0	31	255	82.0	57	459	81.0
Grade VI	14	116	82.0	32	280	87.0	46	396	86.0
Grade VII	14	121	80.0	20	163	85.0	34	284	83.0
Grade VIII	9	67	74.0	17	137	81.0	26	204	78.0
Total	144	1,191	82.7	173	1,466	84.1	317	2,657	83.8
Guthrie School:									
Grade II	46	326	70.9	45	371	82.4	91	697	76.6
Grade III	39	317	81.3	38	278	73.1	77	595	77.0
Grade IV	33	225	68.0	29	201	69.3	62	426	69.0	
Grade V	17	118	69.0	18	141	78.0	35	259	74.0
Grade VI	22	160	72.7	31	244	78.7	53	404	76.0
Grade VII	35	256	73.1	26	217	83.4	61	473	77.0
Grade VIII									
Total	192	1,402	72.9	187	1,452	77.6	379	2,854	75.3
A. B. Hill School:									
Grade II	53	328	61.9	53	340	64.1	106	668	63.0
Grade III	45	332	73.7	56	471	84.0	101	803	79.0
Grade IV	32	198	60.9	56	381	68.0	88	579	65.8
Grade V	53	389	73.0	51	385	75.0	104	774	74.3
Grade VI	32	203	63.0	37	274	74.0	69	477	69.0
Grade VII	21	124	59.0	38	252	66.0	59	376	63.7
Grade VIII	19	131	68.0	26	192	73.0	45	323	71.0
Total	255	1,705	66.8	317	2,295	72.0	572	4,000	70.0
Idlewild School:									
Grade II	36	267	74.3	38	322	84.7	74	589	79.6
Grade III	30	232	77.0	35	310	88.5	65	542	83.4
Grade IV	24	179	74.5	26	187	71.9	50	366	73.2
Grade V	34	256	75.3	39	312	80.0	73	568	77.8
Grade VI	46	334	74.7	37	301	81.3	83	635	76.1
Grade VII	28	217	77.5	42	310	73.8	70	527	75.2
Grade VIII	29	226	78.0	26	217	83.5	55	443	80.5
Total	227	1,711	75.8	243	1,959	80.6	470	3,670	78.1
Lauderdale School:									
Grade II	49	413	84.0	56	480	85.7	105	893	85.0
Grade III	37	325	87.8	43	397	92.3	80	722	90.0
Grade IV	48	367	76.5	44	347	77.9	92	714	77.6
Grade V	39	323	82.8	58	477	82.2	97	800	82.4
Grade VI	51	405	79.4	38	333	87.6	89	738	82.9
Grade VII	32	241	75.3	55	450	81.8	87	691	79.4
Grade VIII	22	153	69.5	45	379	84.2	67	532	79.2
Total	278	2,227	80.1	339	2,863	84.4	617	5,090	82.4
Leath School:									
Grade II	39	288	74.1	34	240	70.6	73	528	72.3
Grade III	39	272	69.7	34	266	77.6	73	538	73.7
Grade IV	38	273	71.5	34	435	80.5	72	708	76.4
Grade V	32	283	82.9	27	203	75.1	59	486	79.0
Grade VI	28	226	80.3	20	287	79.0	48	462	79.6
Grade VII	17	129	76.0	22	176	80.0	39	305	78.2
Grade VIII	12	97	80.8	13	106	80.8	25	203	80.8
Total	205	1,567	76.4	224	1,713	77.3	429	3,280	76.6

Results of spelling tests in white schools—Continued.

Schools and grades.	Boys.	Words correct.	Per cent correct.	Girls.	Words correct.	Per cent correct.	Total pupils.	Total words correct.	Per cent correct.
Leath Orphanage:									
Grade II	3	29	96.0	2	15	75.0	5	44	88.0
Grade III	4	35	87.0	2	19	95.0	6	54	90.0
Grade IV	1	8	80.0	7	56	80.0	8	64	80.0
Grade V									
Grade VI	1	9	90.0	6	52	86.6	7	61	87.0
Grade VII				5	39	78.0	5	39	78.0
Grade VIII									
Total	9	81	90.0	22	181	82.2	31	262	84.5
Lenox School:									
Grade II	20	299	79.6	13	107	82.3	43	346	80.4
Grade III	22	180	82.0	18	151	83.0	40	331	83.0
Grade IV	22	136	62.0	10	74	74.0	32	210	66.0
Grade V	13	80	60.0	14	121	80.0	27	201	70.4
Grade VI	16	137	85.6	20	186	90.3	36	323	89.7
Grade VII	20	181	90.5	21	186	88.6	41	367	89.5
Grade VIII	11	64	58.2	21	154	73.3	32	218	68.1
Total	134	1,017	75.8	117	979	83.6	251	1,996	79.5
Madison Heights School:									
Grade II	12	112	93.3	25	226	90.4	37	338	91.3
Grade III	33	291	88.1	21	197	93.8	54	488	90.3
Grade IV	18	148	82.2	14	120	85.7	32	268	83.8
Grade V	21	167	79.5	16	128	80.0	37	295	80.0
Grade VI	27	123	45.5	23	107	49.0	49	230	47.0
Grade VII	20	145	72.5	21	174	82.3	41	319	77.6
Grade VIII	13	97	75.0	18	161	90.0	31	258	85.0
Total	144	1,083	75.2	137	1,113	81.2	281	2,196	78.1
Maury School:									
Grade II	35	273	78.0	40	340	85.0	75	613	81.7
Grade III	37	320	86.4	33	339	89.2	75	659	87.8
Grade IV	42	369	87.8	28	226	80.7	70	595	85.0
Grade V	51	389	76.2	38	319	83.9	89	708	79.5
Grade VI	24	180	75.0	42	363	86.4	66	543	82.1
Grade VII	32	250	78.1	34	285	83.8	66	535	81.0
Grade VIII	19	146	76.0	27	218	79.0	46	361	78.0
Total	240	1,927	80.2	247	2,087	84.5	487	4,014	82.4
Merrill School:									
Grade II	44	337	76.6	32	231	72.2	76	568	74.7
Grade III	39	308	78.9	30	263	87.6	69	571	82.7
Grade IV	42	356	84.8	27	299	80.8	79	655	82.9
Grade V	36	282	78.3	31	272	87.7	67	554	82.7
Grade VI	39	315	80.7	31	247	79.7	70	562	80.2
Grade VII	22	179	81.3	32	182	79.1	45	361	80.2
Grade VIII	7	57	81.4	22	185	84.0	29	242	83.0
Total	229	1,834	80.0	206	1,679	81.5	435	3,513	80.7
Peabody School:									
Grade II	42	256	60.9	41	279	68.0	83	535	64.4
Grade III	30	250	83.3	30	267	89.0	60	517	86.1
Grade IV	38	257	67.6	33	252	76.3	71	509	71.1
Grade V	20	150	75.0	34	225	66.1	54	375	69.4
Grade VI	29	196	67.6	35	275	78.5	64	471	73.6
Grade VII	24	209	87.0	20	155	77.5	44	364	82.7
Grade VIII	18	140	77.7	22	188	85.8	40	328	82.2
Total	201	1,458	72.5	215	1,641	76.3	416	3,099	74.5
Pope School:									
Grade II	33	243	73.6	39	281	72.0	72	524	72.7
Grade III	46	395	85.8	32	284	88.7	78	679	87.0
Grade IV	38	292	76.8	38	292	76.8	76	584	76.4
Grade V	38	286	75.2	39	305	78.2	77	591	76.7
Grade VI	26	188	72.3	42	211	50.2	68	399	55.7
Grade VII	10	65	65.0	25	188	76.0	35	253	72.0
Grade VIII	6	36	60.0	6	43	71.0	12	79	65.0
Total	197	1,505	76.4	221	1,804	72.6	418	3,109	73.5

Results of spelling tests in white schools—Continued.

Schools and grades.	Boys.	Words correct.	Per cent correct.	Girls.	Words correct.	Per cent correct.	Total pupils.	Total words correct.	Per cent correct.
Riverside School:									
Grade II	54	401	74.2	40	283	70.7	94	684	72.7
Grade III	54	442	81.8	45	379	84.2	99	821	82.9
Grade IV	39	283	72.5	39	329	84.3	78	612	78.4
Grade V	46	358	77.8	52	421	80.9	98	779	79.4
Grade VI	22	191	86.8	26	218	83.8	48	409	85.2
Grade VII	20	139	69.5	17	119	70.0	37	258	69.6
Grade VIII	12	92	76.6	16	122	76.2	28	214	76.4
Total	247	1,906	77.1	235	1,871	79.6	482	3,777	78.3
Rozelle School:									
Grade II	26	195	75.0	37	303	81.8	63	498	79.0
Grade III	21	191	91.0	24	203	84.5	45	394	87.5
Grade IV	33	246	74.5	32	247	77.1	65	493	75.8
Grade V	27	189	70.0	26	187	71.9	53	376	70.9
Grade VI	19	147	77.3	26	222	85.3	45	369	82.0
Grade VII	23	182	79.1	29	219	85.8	52	431	82.9
Grade VIII	17	136	80.0	20	170	85.0	37	306	86.4
Total	166	1,286	74.4	194	1,581	81.5	360	2,867	79.7
Smith School:									
Grade II	33	290	87.8	36	278	77.2	69	568	82.3
Grade III	12	100	83.3	16	140	87.5	28	240	85.2
Grade IV	19	144	76.0	16	98	61.0	35	242	69.0
Grade V	38	295	77.6	33	273	82.7	71	568	80.0
Grade VI	29	233	80.3	32	247	77.1	61	480	78.7
Grade VII	11	81	74.0	16	122	76.0	27	203	75.0
Grade VIII	10	87	87.0	13	114	87.6	23	201	87.3
Total	152	1,230	80.9	162	1,272	78.5	314	2,502	70.1
Snowden School:									
Grade II	26	230	89.0	29	229	92.0	55	459	90.0
Grade III	19	177	93.0	19	182	96.0	38	359	94.4
Grade IV	33	305	94.0	21	204	94.5	54	509	94.0
Grade V	23	202	88.0	20	196	98.0	43	398	92.0
Grade VI	16	131	82.0	22	197	90.0	38	328	86.0
Grade VII	18	154	85.4	19	161	85.0	37	315	85.0
Grade VIII	9	87	96.6	21	202	96.2	30	289	96.3
Total	144	1,286	89.3	151	1,371	90.8	295	2,657	90.1
St. Paul School:									
Grade II	21	133	63.3	30	273	91.0	51	406	79.6
Grade III	32	282	88.0	22	188	82.0	54	470	85.5
Grade IV	24	186	71.0	19	163	77.5	43	349	73.0
Grade V	28	194	85.0	15	115	76.6	43	309	71.8
Grade VI	18	127	70.5	30	230	76.6	48	357	74.2
Grade VII	14	111	79.2	21	176	83.8	35	287	81.5
Grade VIII	9	60	66.6	14	112	80.0	23	172	74.7
Total	146	1,093	74.8	151	1,257	83.2	297	2,350	79.1
Vocational High School:									
Grade VII	25	184	73.0	31	242	76.0	56	426	75.0
Grade VIII	40	279	66.0	56	421	75.0	96	700	71.0
Total	65	463	72.0	87	663	76.2	152	1,126	74.1

Results of spelling tests in colored schools.

Schools and grades.	Boys.	Words correct.	Per cent correct.	Girls.	Words correct.	Per cent correct.	Total pupils.	Total words correct.	Per cent correct.
Caldwell School:									
Grade II	19	173	90.0	14	136	96.0	33	307	93.0
Grade III	6	54	90.0	15	135	90.0	21	[illegible]	90.0
Grade IV	9	[illegible]	75.0	12	[illegible]	87.0	[illegible]	181	82.0
Grade V	[illegible]	[illegible]	97.0	17	161	96.0	[illegible]	[illegible]	96.0
Grade VI	6	[illegible]	[illegible]	6	60	100.0	[illegible]	115	97.0
Total	45	398	[illegible]	65	[illegible]	[illegible]	110	[illegible]	91.4
Carnes School:									
Grade II	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	77.7
Grade III	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Grade IV	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Grade V	[illegible]	[illegible]	[illegible]	41	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Grade VI	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	84.4

Results of spelling tests in colored schools—Continued.

Schools and grades.	Boys.	Words correct.	Per cent correct.	Girls.	Words correct.	Per cent correct.	Total pupils.	Total words correct.	Per cent correct.
Charles Avenue School:									
Grade II	2	18	90.0	6	57	95.0	8	75	93.3
Grade III	3	29	96.6	3	29	96.6	6	58	96.6
Grade IV	4	35	87.5	2	20	100.0	6	55	91.6
Grade V	5	40	80.0	6	51	85.0	11	91	82.0
Grade VI	6	43	86.0	3	26	87.0	8	69	86.0
Total	19	165	86.8	20	183	91.5	39	348	89.2
Grant School:									
Grade II	26	222	85.3	35	319	91.1	61	541	88.7
Grade III	28	203	72.5	51	447	87.6	79	650	82.2
Grade IV	27	246	91.9	32	300	93.7	59	546	92.5
Grade V	18	60	33.3	29	180	66.2	47	240	51.0
Grade VI	5	26	52.0	13	84	64.0	18	110	61.0
Grade VII	14	102	72.8	42	314	74.7	56	416	74.3
Grade VIII	7	40	59.1	31	236	76.1	38	276	72.6
Total	125	899	71.9	233	1,880	80.6	358	2,779	77.6
Greenwood School:									
Grade II	33	289	88.0	29	256	88.0	62	545	88.0
Grade III	18	174	96.0	29	274	94.0	47	448	95.0
Grade IV	27	231	86.0	39	316	81.0	66	547	83.0
Grade V	27	206	76.0	23	182	79.0	50	388	78.0
Grade VI	8	58	73.0	18	133	74.0	26	191	74.0
Grade VII	5	29	58.0	17	116	68.0	22	145	66.0
Total	118	987	82.6	155	1,277	82.3	273	2,264	82.9
Klondike School:									
Grade II	24	233	97.0	25	239	94.8	49	470	95.9
Grade III	11	91	82.7	20	172	86.0	31	263	84.8
Grade IV	11	104	94.5	18	165	91.7	29	269	92.7
Grade V	16	94	58.7	20	159	79.5	36	253	70.2
Grade VI	13	111	85.1	18	164	91.1	31	275	88.7
Total	75	633	84.4	101	897	88.8	176	1,530	86.9
Kortrecht Grammar School:									
Grade II	48	355	73.9	51	386	75.6	99	741	74.8
Grade III	22	208	94.5	45	405	90.0	67	613	91.4
Grade IV	19	108	56.8	47	322	68.5	66	430	65.1
Grade V	16	120	75.0	27	207	76.6	43	327	76.0
Grade VI	11	100	90.9	37	312	84.8	48	412	85.8
Grade VII	5	31	60.0	6	50	83.3	11	81	73.0
Total	121	922	76.2	213	1,682	78.9	334	2,604	77.9
Kortrecht High School:									
Grade VII	27	219	81.1	50	415	83.0	77	634	82.3
Grade VIII	30	272	90.6	60	575	95.8	90	847	94.1
Total	57	491	86.1	110	990	90.0	167	1,481	88.6
La Rose School:									
Grade II	46	351	76.3	71	586	82.5	117	937	80.0
Grade III	60	497	82.8	88	818	92.9	148	1,315	90.2
Grade IV	31	212	68.3	49	343	70.0	80	555	69.3
Grade V	36	256	71.1	46	336	73.0	82	592	72.1
Grade VI	21	142	67.6	41	219	53.4	62	361	58.2
Grade VII	9	62	70.0	22	163	76.0	31	225	74.0
Total	203	1,520	74.8	317	2,465	77.8	520	3,985	76.6
Porter School:									
Grade II	32	266	83.0	56	471	84.0	88	737	83.0
Grade III	34	320	94.0	41	398	97.0	75	718	96.0
Grade IV	28	197	70.0	35	282	81.0	63	479	76.0
Grade V	11	67	60.9	18	108	60.0	29	175	60.3
Grade VI	8	67	83.7	18	163	90.5	26	230	88.4
Grade VII	6	39	65.0	18	137	76.1	24	176	73.3
Total	119	956	80.3	186	1,559	83.2	305	2,515	82.4
Virginia Avenue School:									
Grade II	50	375	75.0	46	345	75.0	96	720	75.0
Grade III	32	288	90.0	42	384	91.4	74	672	90.8
Grade IV	31	233	75.1	45	367	81.7	76	600	78.9
Grade V	24	147	61.2	42	269	64.1	66	416	63.0
Grade VI	17	119	70.0	37	279	75.4	54	398	73.7
Grade VII	4	23	57.5	9	83	91.1	13	106	80.7
Total	158	1,185	75.0	221	1,726	78.1	379	2,911	76.8

Summary of spelling tests distributed by grades.

WHITE SCHOOLS.

Name.	II Grade.			III Grade.			IV Grade.			V Grade.			VI Grade.			VII Grade.			VIII Grade		
	Total pupils.	Total words correct.	Per cent correct.	Total pupils.	Total words correct.	Per cent correct.	Total pupils.	Total words correct.	Per cent correct.	Total pupils.	Total words correct.	Per cent correct.	Total pupils.	Total words correct.	Per cent correct.	Total pupils.	Total words correct.	Per cent correct.	Total pupils.	Total words correct.	Per cent correct.
Bruce	80	628	78.0	74	629	85.0	67	577	86.1	120	1,027	85.0	90	710	78.8	99	775	77.0	60	455	76.0
Church Home	6	54	90.0	10	95	95.0	11	98	89.0	5	42	84.0									
Cummings	76	543	71.4	77	679	88.2	70	552	78.8	72	527	73.0	61	513	84.0	43	354	82.0	27	254	94.0
Gordon	39	332	84.0	57	541	94.0	58	441	76.0	57	459	81.0	46	396	86.0	24	284	83.0	26	204	78.0
Guthrie	91	697	76.6	77	595	77.0	62	426	69.0	35	259	74.0	53	404	76.0	61	473	77.0			
Hill	106	668	63.0	101	803	79.0	88	578	65.8	104	774	74.3	69	477	69.0	59	376	63.7	73	323	71.0
Idlewild	74	589	79.6	65	542	83.4	50	366	73.2	73	568	77.8	83	635	76.1	70	527	75.2	55	443	80.5
Lauderdale	105	893	85.0	80	722	90.0	92	714	77.6	97	800	82.4	89	738	82.9	87	691	79.4	67	532	79.2
Leath	73	528	72.3	73	538	73.7	92	708	76.4	59	466	79.0	58	462	79.6	39	305	78.2	35	283	80.8
Leath Orphanage	5	44	80.0	6	54	90.0	8	64	80.0				7	61	87.0	5	39	78.0			
Lenox	43	346	80.4	40	331	83.0	32	210	66.0	27	201	70.4	36	323	89.7	41	367	89.5	32	218	68.1
Madison Heights	37	338	91.3	54	488	90.3	32	268	83.8	37	295	80.0	49	230	47.0	41	319	77.6	31	258	85.0
Maury	75	613	81.7	75	659	87.8	70	595	85.0	89	708	79.5	66	543	82.1	66	535	81.0	46	361	78.0
Merrill	76	568	74.7	69	571	82.7	79	655	82.9	67	554	82.7	70	562	80.2	45	361	80.2	29	242	83.0
Peabody	83	535	64.4	60	517	86.1	71	509	71.7	54	375	69.4	64	471	73.6	44	364	82.7	40	328	82.2
Pope	72	524	72.7	78	679	87.0	76	584	76.4	77	591	76.7	68	399	58.7	35	253	72.0	12	79	65.0
Riverside	94	684	72.7	99	821	82.9	78	612	78.4	98	779	79.4	48	409	85.2	37	258	69.6	28	214	76.4
Rozelle	63	498	79.0	45	394	87.5	65	493	75.8	53	376	70.9	45	369	82.0	52	431	82.9	37	306	85.4
Smith	69	568	82.3	28	240	85.2	35	242	69.0	71	568	80.0	61	480	78.7	27	203	75.0	23	201	87.3
Snowden	55	459	90.0	88	359	94.4	54	509	94.0	43	398	92.0	38	328	86.0	37	315	85.0	30	289	96.3
St. Paul	51	406	79.6	54	470	85.5	43	349	78.0	43	309	71.8	48	357	74.3	35	287	81.5	23	172	74.7
Vocational High																56	426	75.0	96	700	71.0
Total	1,373	10,515	76.5	1,260	10,727	85.1	1,283	9,551	77.4	1,281	10,076	78.6	1,149	8,867	77.1	1,013	7,943	78.4	770	5,862	76.1

NEGRO SCHOOLS.

Caldwell	33	307	93.0	21	189	90.0	22	181	82.0	22	209	96.0	12	116	97.0	......	......	......	......	......	......
Carnes	89	692	77.7	73	650	89.0	82	723	88.1	53	441	83.2	46	392	85.2	......	......	......	......	......	......
Charles	8	75	93.8	6	58	96.6	6	55	91.6	11	91	82.0	8	69	86.0	......	......	......	......	......	......
Grant	61	541	88.7	79	650	82.2	59	546	92.5	47	240	51.0	18	110	61.0	56	416	74.3	38	276	72.6
Greenwood	62	545	88.0	47	448	95.0	66	547	83.0	50	388	78.0	26	191	74.0	22	145	66.0	......	......	......
Klondike	49	470	95.9	31	263	84.8	29	269	92.7	36	253	70.2	31	275	88.7	......	......	......	......	......	......
Kortrecht Grammar	99	741	74.8	67	613	91.4	66	430	65.1	43	327	76.0	48	412	85.8	11	81	73.0	......	......	......
Kortrecht High	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	77	634	82.3	90	847	94.1
La Rose	117	937	80.0	148	1,315	90.2	80	555	69.3	82	592	72.1	62	361	58.2	31	225	74.0	......	......	......
Porter	88	737	83.0	75	718	95.0	63	479	76.0	29	175	60.3	26	230	88.4	24	176	73.3	......	......	......
Virginia Avenue	96	720	75.0	74	672	90.8	76	600	78.9	66	416	63.0	54	398	78.7	13	105	80.7	......	......	......
Total	702	5,765	82.1	621	5,576	89.7	549	4,385	79.9	439	3,132	71.1	331	2,554	77.1	234	1,782	77.4	128	1,123	87.7
Total entire system	2,075	16,280	78.4	1,881	16,303	86.6	1,782	13,936	78.2	1,720	13,208	76.6	1,480	11,421	77.0	1,247	9,725	77.9	898	6,985	77.7
Ayres average	......	......	73.0	......	......	73.0	......	......	73.0	......	......	73.0	......	......	73.0	......	......	73.0	......	......	73.0

Summary of spelling tests in Memphis schools.

	II Grade.			III Grade.			IV Grade.			V Grade.			VI Grade.			VII Grade.			VIII Grade.		
	Total pupils.	Total words correct.	Per cent correct.	Total pupils.	Total words correct.	Per cent correct.	Total pupils.	Total words correct.	Per cent correct.	Total pupils.	Total words correct.	Per cent correct.	Total pupils.	Total words correct.	Per cent correct.	Total pupils.	Total words correct.	Per cent correct.	Total pupils.	Total words correct.	Per cent correct.
White schools' total	1,373	10,515	76.5	1,260	10,727	85.1	1,233	9,551	77.4	1,281	10,076	78.6	1,149	8,867	77.1	1,013	7,943	78.4	770	5,862	78.1
Negro schools' total	702	5,765	82.1	621	5,576	89.7	549	4,385	79.9	439	3,132	71.1	331	2,554	77.1	234	1,782	74.4	128	1,123	87.7
Entire system's total	2,075	16,280	78.4	1,881	16,303	86.6	1,782	13,936	78.2	1,720	13,208	76.6	1,480	1,142	77.0	1,247	9,725	77.9	898	6,985	77.7
Ayres average	......	......	73.0	......	......	73.0	......	......	73.0	......	......	73.0	......	......	73.0	......	......	73.0	......	......	73.0

OBSERVATIONS ON THE SPELLING TEST.

When the schools as wholes are considered, an examination of the foregoing tables discloses the fact that all, including the colored schools, passed the accepted standard of 73 per cent correct, except the A. B. Hill and the Smith Schools, each of which received a grade of 70 per cent. A number of the schools made an exceptionally fine showing, notably the Bruce, Church Home, Cummings, Gordon, Lauderdale, Maury, Merrill, and Snowden among the white schools, and the Caldwell, Carnes, Charles Avenue, Greenwood, Klondike, Kortrecht High, and Porter among the colored schools. These all reached or exceeded a grade of 80 per cent correct, three of them, the Church Home, the Snowden, and the Caldwell (colored), receiving the high grade of 90 per cent correct.

As to the grades taken separately, but for each group of schools (white and colored), it is seen that all passed the standard of 73 per cent correct except the fifth grade of the colored group, which received a rank of 71 per cent.

In comparing the white and colored groups it is interesting to note that, with the exception of the fifth grade and the seventh grade, the group of colored schools equaled or surpassed the record made by the corresponding grades of the white group.

A comparison between the showing made by the boys and that by the girls of each group is interesting; 38,750 words were attempted by the boys of the white schools, with 29,904 spelled correctly; this is a percentage right of 77.1; 41,760 words were attempted by the girls of the white schools, with 33,637 spelled correctly, 80.5 per cent.

Similarly with the schools of the colored group the girls made a better showing than did the boys, and it is to be noted that both the boys and girls of the colored group did better than those of the white group; the boys getting a rating of 78.3 per cent correct and the girls 82.6 per cent correct.

The results obtained in the foregoing test would seem to indicate that more time and attention is being given to the study of spelling than is necessary, and that it would be the part of wisdom to lessen cautiously the time devoted to this subject in order that more time can be given to subjects in which the showing made is not so good. Fifteen minutes per day should be ample time in which to master the relatively short list of words which investigations have shown is sufficient for all practical purposes. But, of course, this formal drill on spelling must be supplemented all along the grade line by careful attention to all written work, for children will grow careless if permitted.

6. THE TEACHING OF OTHER SUBJECTS IN THE ELEMENTARY GRADES.

MUSIC.

It is difficult to see what place in the lives of children the music in the Memphis schools fills. The quality of tone in the singing is uniformly so strident and heavy that little of beauty is produced. The rote songs sung in the lower grades are often poor in themselves, besides being sung poorly. On the side of expression one is forced to recognize that many priceless minutes that might be spent in singing that would lift and cheer and unite the group are spent in the most joyless and unmusical study of facts of musical notation. If these were facts about music that had lived gloriously in the lives of the children as song they would be alive and interesting. But they are made abstract, general; are applied to music that is not born yet, but that in some vague, future day may be discovered and experienced, or to no music at all—so great is the chasm between the musical theory taught and the music itself.

"Question and answer" forms of instruction are found in the music work as in other subjects. Often evidence abounded that the effort in "music" had fallen to nothing but a barren memory exercise, dealing with statements and definitions related at best to the printed symbols of staff notation and often not understood by the children even in this application. The examination questions in music, which fell under the observation of the survey members in the elementary department, will bear ample testimony to the accuracy of this judgment.

A detailed discussion of the teaching of this important subject of music will be found in Chapter VIII of this report.

ELEMENTARY SCIENCE—NATURE STUDY.

Elementary science is practically a negative quantity in the Memphis schools. Physiology, taught in the fourth grade, is the nearest approach to the subject. There are occasional topics more or less under the head of nature study taught in the various grades, but there is no well-defined course of study.

Physiology in the fourth grade is purely a textbook matter and is not at all of the character of health instruction that children ought to be getting.

The following examination questions indicate the nature of the facts the child is expected to learn. An examination of the text will reveal that these questions were intended to call forth the material of the text regardless of its value to the child:

1. What three things does physiology teach us?
2. (a) What is a muscle? (b) How may your muscle be strengthened?
3. (a) Name five different kinds of food and tell one thing which is obtained from each. (b) Which is the most perfect food and why?

4. Why is it harmful to eat too much or to eat between meals?
5. (*a*) Why is ice water harmful? (*b*) What are the best drinks?
6. Give five rules for taking care of the teeth.
7. (*a*) Name the juice in the stomach that aids digestion. (*b*) Name a juice in the intestines.
8. Define tendons; narcotic; saliva; enamel; oesophagus.
9. Why do children's bones mend more easily than those of grown people?
10. Why is wine a dangerous drink?

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1. Describe the heart.
2. How can you tell when an artery is cut?
3. How should we breathe and why?
4. What do the lungs do for the body? What is the effect of cigarette smoke on the lungs?
5. Tell how the body gets rid of its poisons and waste.
6. Why should we have the windows open while we sleep?
7. (*a*) What is the nervous system? (*b*) Give the most important work of each part of the nervous system.
8. Describe the eye and tell how it is protected.
9. Give reasons for bathing and keeping clean clothing next to the body.
10. What causes teeth to decay? How may decay be prevented?

A large share of the above questions have no value or interest whatever. Why should a 10-year-old child know the names of the juices of the intestines and stomach? What does he care about the oesophagus? What can he really understand about the nervous system? Why should he be able to tell the uses of saliva? "What juice is mixed with the food?" "Saliva." "How does it help us?" "It changes starch into sugar." "What does the stomach do to the food?" "It mixes the food with gastric juices." "Where do we get the bile?" "Where do we get the pancreatic juice?" Comment is scarcely necessary.

We are suggesting that a course in elementary science and nature study that will be very closely correlated with the other subjects of instruction be organized for the lower intermediate grades. We most earnestly recommend the introduction of such a course.

A detailed discussion of the teaching of science will be found in Chapter VII of this report.

INDUSTRIAL ARTS.

Important as reading, writing, and arithmetic are, the vast majority of children will not spend their hours directly using them after they leave school.

It is impossible to have a well-balanced educational system without introducing such phases of handwork as will enable the child to express himself through doing and thus make definite what is often vague and indefinite in his mind.

Industrial arts in the elementary school considers the problems of selection of materials and methods of construction more from the standpoint of the user than the producer.

The purpose of this course should be cultural, not utilitarian. It should provide such information, develop such habits and attitudes, and cultivate such appreciation as will make intelligent consumers and citizens.

The end sought is not skill alone, rather the development of the child through the exercise of his natural and spontaneous self-activity. The value of handwork, the industrial arts, in the grades, lies in the realization of the following aims:

To supplement and make more accurate the other subjects of the curriculum, through the construction of models to illustrate those subjects.

To bring school and home into closer harmony through the construction of articles of real value in the home.

To arouse the child's interest in school work through problems, enlisting both mind and hands; concrete, and of value from the child's point of view.

To bring the pupil into touch with the industries of the world, through the study of typical methods of manufacture and through the actual transformation of rough materials into finished products.

To instill a taste and respect for manual labors and an appreciation of good workmanship and honest construction.

To develop habits of accuracy, thoroughness, and skill.

Since this phase of school work is founded upon the development of self-activity, the work should begin with those exercises that are most easy from the child's point of view and proceed to those more difficult. During the first six grades the work may well be largely the same for both boys and girls and without reference to future vocations. The exercises should be grouped or graded according to the age and ability of children to handle certain materials.

Every model constructed by the child should have a vital connection with life. His home life, his school life or his life of sport. For example: Models useful to the child in his play. Suitable problems may be selected for each grade from those fields of industry which are of importance to all people, such as projects centering about food, shelter, clothing, utensils, tools, etc. Models can be made for permanent school exhibits. Apparatus for simple experiments in physics. Simple furniture for the schoolroom, such as bookstalls for the teacher's desk, frames for pictures, pedestals for plants, statuary, etc., hanging shelves for books, magazine racks, etc.

The equipment for this work in the first six grades need not be elaborate nor very expensive.

The committee feels that the Memphis school system should as soon as possible provide opportunities whereby hand or industrial work of various kinds, skillful cooperation of brain and muscle

every day may be possible for the children throughout the elementary grades.

To realize the great importance, the value, and we might safely say the imperative need of the "Doing Side" in education, one needs simply to pass from grade to grade throughout the elementary school and note the idle, uninterested children. This is due, no doubt, to fatigue at the continual use of a pencil; the many overgrown children; the physically defective and some foreign born who are marking time largely waiting for "The Earliest Possible Moment" when they may leave school and go to work.

The more numerous the avenues open to a human being to create, to construct, to build, to make things, the greater the possibility of his rendering efficient service in life, and the less likely is he to be "a square peg in a round hole." (See Chapter IX of this report for a further discussion of this work.)

7. GENERAL ASPECTS OF INSTRUCTION AND MANAGEMENT.

THE VISION OF THE TEACHING STAFF.

Memphis possesses a golden opportunity for the making of an ideal school system through the personnel of its teaching staff. Courtesy, graciousness, and refinement are in evidence on every hand. One notes the wholesome and refining influence as reflected in the spirit and attitude of the pupils toward their school work.

An examination of the content of the work done and the methods of instruction pursued shows too frequently a lack of vision and educational outlook. Most of the teaching is done on the basis of words, rather than on the basis of reality. The schools move on from day to day in a groove. We were impressed with the fact that the teaching tends more toward "memory storing" than toward achieving power to act and react quickly in thought processes. The textbook is the end and not the means to an end. Lessons are assigned from day to day, as so many pages or the next chapter to be studied, to the end that the children return the next day having committed to memory the facts contained therein.

This type of school work indicates that the teacher has lost sight of the fact that teaching is not mere learning and lesson hearing; that knowledge as gained in memory training is not power; that teaching is weak, if not positively evil, which weakens the individual power of children by the processes used in communicating knowledge to them.

Instruction in school can best be judged by the activity of the pupils; hence the observer asks, What are these children doing? Are they setting up problems and projects of their own? Are they pointed and forceful in their work? Are they selecting facts according to values? Do they exercise any initiative in their study etc.?

The answer to each of these questions is negative. It is memory teaching only and often in the exact language of the text, at least the exception is so rare that it is almost a negligible quantity.

To instruct means to throw the child into the adjustment of a "problem situation," which is not the case in the following type of work. For example, a portion of a lesson assigned on the blackboard was—

Memphis is the trade center for western Tennessee and Kentucky, Mississippi, and eastern Arkansas.

The farmers of these States send their cotton, fruit, and vegetables to Memphis to sell.

Memphis merchants sell to the farmers groceries, plows, wagons, furniture, and clothing.

Memphis is a great market for cotton and lumber.

There are many large lumber mills at Memphis, etc.

The recitation which followed the assignment was of the memory type—

Teacher. Memphis is a trade center for what section?

Child. Memphis is a trade center for western Tennessee and Kentucky, Mississippi, and eastern Arkansas.

Teacher. Where do the farmers send their cotton, fruit, and vegetables?

Child. The farmers send their cotton, fruit, and vegetables to Memphis to sell.

Teacher. For what is Memphis a great market?

Child. Memphis is a great market for cotton and lumber.

Each question asked by the teacher was responded to by the children in "parrotlike fashion."

These important facts about Memphis should have been discovered and could have easily been discovered by the children through their own efforts. The teacher should have set a problem for them by directing them to find out "Why Memphis is a trade center and for what area of country." Also to find out "What the important productions are and how they they are distributed." Problems set for children utilize their instincts for investigating and collecting of data and material. The teacher's function is to aid the children in sifting and organizing the data collected, whereby the facts gained and knowledge required become vital and fixed. Children once subjected to the problem type of work will no longer be satisfied with having the teacher write on the blackboard statements to be copied, to be memorized at home and later recited verbatim.

This type of teaching means constant study and investigation on the part of the teacher; for, to be an efficient teacher, one must be a growing teacher. An element in the teaching staff, which is essential to an effective and efficient school system, is initiative and resourcefulness. We recognize that it is impossible to preserve and

cultivate the initiative of the teaching force, when teachers feel they are to be measured by uniform tests and standards, the basis of which is shown in the child's ability to memorize and answer set questions in order to pass uniform textbook examinations.

It was the exceptional classroom observed that showed any evidence that the teacher alone, or the teacher and the children together, had made any effort to make the work concrete or relate it to the children's own experiences in the home, school, and community. As an illustration of this, in all the classes observed during centennial week only one was making any use of the centennial edition of the local newspaper—the Commercial Appeal. This was a golden opportunity lost to enrich and vitalize the geography and history. The edition of this paper might have been profitably used during the reading period. It was the situation which had created the information contained in this paper. So instruction in every subject should link up with life's situations in an interpretative way.

There seems to be little or no incentive given to the children to investigate and question, in order that they may grasp things in a meaningful and systematic way.

PREPARATION BY TEACHERS.

The tendency to neglect the preparation of topics that we have taught many times in the past is universal. The tendency to neglect preparation when there is textbook teaching is likewise very widespread. A course of study which is narrow and inflexible tends more than any other one cause to cutting down preparation for lessons which apparently are the same year after year.

Work in the elementary schools of Memphis is largely of the straight textbook type. Outside work is very seldom brought in as has been observed already in many places in the report. The teachers take the attitude that there is no time for anything more than they are now doing. Consequently there is very little incentive for careful preparation, preparation which goes beyond the text itself. It should not be assumed that none of the teachers prepare carefully for each day's work, seeking each day to add something to what has been prepared for the same lesson in former years. It was our feeling, however, that in the intermediate and upper grades, particularly, the teachers of grammar, arithmetic, spelling, geography, and history had made little or no preparation for the day's work beyond having well in mind the facts in the text. If there had been preparation, the facts discussed or recited in class did not indicate wide divergence from the text itself.

Are the teachers so hindered by the course of study that the motive for preparation is killed?

TYPES OF QUESTIONS USED IN INSTRUCTION.

In general, there are two broad types of questions, those which call forth facts accumulated in memory, and those which call for the exercise of thought in arriving at an answer. In school, questions are asked, for the most part, because it is supposed to be the thing to do. In life outside the school questions are asked because some problem needs answering. This latter situation should be the ideal sought for in classroom procedure.

In Memphis during the month of observation we saw practically nothing but a long list of questions being asked which were nothing but memory questions. Thought was not in the least involved in getting the answer. Very frequently there was no connection between the first question and the next. Memorized facts were desired and frequently very unimportant facts. There is a definite place for memory questions. There is also a place in school for thinking. The chief reason for lack of interest in school work is the failure by the teachers to introduce children to situations (questions) which require thinking. It is our judgment that the teachers of Memphis put an undue amount of emphasis upon memory rather than upon thought work.

The other side of the problem of questions is the response given by the child. We direct the reader's attention to the stenographic lessons and point out the nature of the answers given by the children. The answers are brief, uninteresting, and inaccurate, frequently only a "yes" or "no." Such answers tend to mental laziness and inexactitude. Why do children give such brief unsatisfactory replies? First a great many of the questions are asked in such a way as to permit of a "yes" or "no," or one word for an answer.

It is more closely associated with history, is that it?
We find another range of mountains farther South, what are they?
Can you name a high peak there?
We haven't been so much concerned about Russia lately, have we?
We find it inclosing what little sea?
It is near what city?
It was not so much the value of things themselves, was it?
It was the historical value, wasn't it?

Another reason that children give brief answers is that the fund of information at the child's disposal is extremely meager. Still another reason is the child's tendency to follow the line of least resistance. The teacher accepts brief, incomplete answers, and the child falls into the habit more or less consciously of offering just enough to satisfy.

A study of the stenographic lesson will reveal a great many questions which are the answer desired put in question form, requiring

nothing more than a reforming of the sentence. The following examples will clarify this point. Such questions are another cause of brief and unthinking answers.

Name the largest prairie city that ships the most meat and corn.
What would be especially inconvenient in building railroads?
What is it called where a river goes through?
Isn't it warm or more like our Southern States?
Most of these countries grow grain to live on, don't they?
But it does belong to England?

A great many of the teachers' questions are very similar to langauge-completion tests or puzzles where words have to be guessed and filled into blanks. The following questions will indicate the type. (Never use more than one word.) The words "where," "what," "who," "how" are blanks.

Finally goes out where?
Has the largest what?
They are between what?
For making what?
They have some peaks that are familiar as what?
Most of the plains of Europe are where?
This point of land is what?

Repetition of answers by teachers is also a rather common fault of the Memphis teachers. This is a waste of time, if nothing worse.

We wish to urge a very careful consideration on the part of teachers of the whole matter of questions in the instruction. The question, however, can not be separated from the more important ones of course of study, organizations of lessons, and training of children to think and study.

HOME STUDY.

To watch the boys and girls pass out of a Memphis school at the close of the day, each one carrying a book and usually an armful of books, including an arithmetic, a reader, speller, geography, history, pencil box, etc., one wonders why and mentally asks such questions as these: "Have these children failed in their day's work?" "Have they no time for study in school?" "Are they expected to work at books from early morning until evening?" "Have they no time for play and home-work activities which will develop their health, heads, hearts, and hands?"

Finally, one asks: "Have they home conditions suitable for quiet study?" Upon investigation it is found that very many, possibly the majority of the children, have not.

Then what are the advantages or disadvantages of home study? In those homes where the environment is conducive to quiet work and where the parents have time and the interest to aid the children in their work, one readily sees that an advantage would obtain in that

it enables the parents to judge of the mental ability of their children, also acquainting them with the development of the curriculum as carried on in the school.

To the thoughtful observer the disadvantages seem numerous. There is the temptation on the part of some to overstudy, there is the temptation to get too much help, the temptation to cheat, the formation of careless habits of study, the danger of memorizing merely words, the interference with outside cultural studies such as music, and art, the lessening of the play time and outdoor sports. Last, but by no means least, the physical burden of carrying heavy books to and from the home daily is a matter for parents to take into serious consideration.

The usual physical conditions under which a child studies at home, at high tables and with poor artificial light, warps his body and injures his eyesight. When the classroom work is properly organized, grouping the children in classes according to their ability to progress, there should be ample time for the preparation of the next day's work in school, for while one group studies or prepares an assigned task the other group recites.

The amount of home work should be reduced to the minimum, and should not be required at all before the fifth or sixth grade. It should consist, mainly, in investigation in the field, at the library or museum, of some project which is to be worked out in school the next day.

ECONOMY OF TIME.

There are two ways in which time may be saved in the schools. To the teachers of Memphis we recommend a most serious consideration on their part of this vital question. We heard on every hand, "We haven't time to do that." Can it be really true that the elementary school course is overcrowded? The children receive no instruction in nature study, no instruction in civics, no handwork or drawing, of any considerable amount, and in some grades none at all. Only a few schools have cooking and only a little time is given to sewing, and there is no manual training. Physical training receives only very slight attention. The subjects which are taught are limited for the most part to the adopted texts.

There are many school systems which secure better results in the subjects which are found in the Memphis schools, in addition to having all the activities mentioned in the last paragraph. Can it be possible then that the teachers in the grades in Memphis really have not time to teach other subjects or to offer richer content in the subjects which are now in the course?

Our answer is that, if present methods of organization and selection of subject matter and present methods of instruction are con-

tinued, the teachers really will not have time for any more than they are doing.

In the first place, time can be saved by the elimination of all subject matter which has no value for the development of the child and the furtherance of his needs. Many important topics are crowded out because there "is no time" since much traditional material is retained for no other reason than it was in the course of study heretofore. Much of place geography, the third type of percentage problems in many applications, difficult fractions, much of the denominate number work, a great deal of the problem material in mensuration, a large part of the spelling lists, and formal grammar could be dropped from the Memphis course with no loss to the pupil and with a great gain in time. Many other items might be mentioned.

A still greater loss of time is brought about by obsolete, ineffective, wasteful teaching methods. If a teacher presents a topic to a class ineffectively the entire time of the class is wasted regardless of how hard the class and teacher may have worked. If children study a spelling lesson in the wrong way, time is lost. If short methods are not employed in mathematics, time is lost. If interest and attention are not secured by the methods employed, time is lost. We have already pointed out, both in spelling and arithmetic, the enormous waste of time in teaching methods.

Another cause for loss of time is a badly correlated course of study. Unless one subject supports and clarifies another, valuable time and effort go for naught. (We commend to the teachers of Memphis Russell's Economy of Time in Education.)

All of the above causes for waste of time are present in the Memphis elementary schools to an alarming degree.

EXAMINATIONS.

The examination system in Memphis is worthy of attention. Examinations in all major subjects—arithmetic, language and grammar, history, physiology, and spelling—are given each half year in all grades, two to eight, inclusive. In the second and third grades examinations are given, of course, for those subjects only which occur in those grades. The reading examination is an oral one. Composition is considered a minor and does not come during examination week. One week is given over to examinations each half year. One examination is given daily—varying in length, but in the upper grades sometimes three hours are allowed.

The month preceding each examination week is devoted to a review of the term's work—literally cramming for the final week. This review is in general of two kinds: A review of the textbook

material, or a review based upon examination questions of previous years. The teachers have sets of old examination questions, and they give them out from day to day. The questions this year were made out by the superintendent, to whom the questions had been recommended by a committee of principals.

Every teacher says upon inquiry that there is no time for this or time for that, because her children must be ready for examination. The ability to master the text and the ability to answer the examination questions seems to be the desired goal. The principals as a whole believe in the examination system. "It gives the teacher a definite aim to shoot at." "It keeps teachers from passing along children who ought to be failed." "It makes children study." "Children will not work if they know they have no final examinations." These are some of the replies one gets from principals and teachers when one inquires into the advantages of the examination system.

It is our opinion that the examination system now in use in Memphis is one of the great hindrances to really effective instruction. Our objection is not to examinations as a general idea. Good examinations are of great value. Examinations which force children to cram up on disconnected and unrelated facts, facts of little use now or in the future, are a positive detriment. During the last month of school the surveyors in the elementary grades saw not more than a dozen lessons in which new material, new facts, new data were presented. We did not hear 50 questions in the month's time that called for real exercise of thought.

If there must be an examination, why not have the review preceding it based upon some organized plan? The review cited in the stenographic lessons is typical of the major portion of the month's work. To really review a subject, connections between related ideas ought to be stressed. Do these lessons show any coherence? Would a child organize his ideas on European geography by such a review? If there must be an examination, why could it not be prepared without the entire devotion of one month's time to it? Could not new topics be used to review the important principles or facts? After a careful study of these questions, what ones could not have been answered just as well by a continuation of regular work as to stop all advance work and drill on such facts for four weeks?

We wish to ask these questions in conclusion: Is an examination the best means for getting children to work in school? Does the teacher really need an examination to decide who shall be promoted? Do the present examinations keep the teacher from doing a more interesting and vital type of work? Is cramming really the best

method of preparing for an examination? In Chapter II of this report a plan of promotion which eliminates the formal examination is suggested and discussed.

SUPERVISION OF INSTRUCTION.

There is no general supervision of instruction in the elementary grades except that exercised by the superintendent. The principals of the schools supervise their teachers to a greater or less degree, depending somewhat upon the amount of office work that the principals have to attend to. Intensive supervision is received by very few teachers. The great number of new teachers each year should demand a large amount of time and thought upon the part of the principal.

We should like to make the following general suggestions regarding the work of the principal as a supervisor, since practically every principal asked that suggestions be offered as to how he could be of greater help to his teachers.

It would be well for a principal, by the use of well-known educational tests, to determine as accurately as possible the exact status of the results in his school with reference to the most important subjects. This should be done regularly at the first, the middle, and the last of each year. Having done this, he should next, by thorough visitation, determine the reasons for any unsatisfactory results. Then, by consultations, teachers' meetings, and study, the staff should determine means for correcting the deficiencies. It would be well in some cases for the principal to take classes for the teacher if it were necessary to make his meaning clear or to show the teacher what in his judgment ought to be done. Teachers' meetings which take up problems of instruction to determine the best possible methods of teaching, with demonstration lessons as the basis of discussion, are exceedingly inspiring to the teachers of a school. It is also wise for a staff to call in outsiders of recognized ability to work on special problems.

Supervision is not at all a one-sided affair. The teacher must do her share of the supervision by being open to criticism, by preparing her lessons every day with the idea of doing the work better than ever before. The entire teaching staff ought to outline the topics for the year's work in advance, so as to be able to modify and enrich the subject of each topic in the light of experience and criticism.

In addition to the supervision which the principals do or might give, it is very necessary that there be general supervision of the regular work for the elementary schools to coordinate and direct the work from the point of view of the whole system. The schools now show great need of this sort of supervision. It ought not to be necessary to give reasons here as to the value of good supervision.

In addition to supervisors of the common subjects, there ought to be supervisors of the special subjects which are so technical as to demand a specialist. We are not referring to a supervisor whose chief business is to rate teachers, but a supervisor who knows how to teach, knows how to improve instruction, and who will initiate all sorts of projects that will challenge the best the teachers have in them. She should lead, not drive. This subject is discussed also in Chapter II of this report.

THE TIME SCHEDULE.

Waste in the proper utilization of a child's time in school is inexcusable. No part of school work requires more careful planning than the daily program. This fact should be impressed upon the teachers of all grades with great emphasis. It is an easy matter to think of the program as a mere mechanical contrivance, with no thought back of it other than to get the subjects out of the way, one after another, without reference to the ends to be gained. It is important to impress upon the teachers of all grades that while a program should be flexible, designed to suit the needs of growing children and modified to suit those needs, there must in the main be a definite time schedule followed.

Every child should be actively occupied every moment of school-time at something which is interesting to him and which is truly worth while. This is not true of the children in the Memphis schools at the present time. The sum total of time wasted during a school year would, we are confident, amount to hours during a school year—due to lack of proper arrangement and balance of studies, to mass teaching, lack of interest in work assigned, and to the fact that many teachers check and mark papers during the time allotted for recitation.

The program of school exercises, the time schedule, should be evaluated from several angles, considering first, the ralative importance of the several subjects therein to determine which are of the greatest value in the life of the child. When this is done, spelling and reading will not occupy the same period as they now do, with the major amount of time being given to spelling. Second, the amount of time per week and day which should be given to each subject according to its importance should be determined and, third, the physical and mental conditions under which the child works should be noted.

THE DAILY PROGRAM.

For an elementary school system which has practically no manual activities, such as drawing, manual training, cooking, sewing, gardening, and the like, the daily program is too long. Nor is it wise in general to give the same amount of time to every subject as is the

case in the upper grades. In some schools spelling receives as much time per day as geography or history. The question of how much time each subject ought to receive is one to which the administration should give its immediate attention. (See section on time schedule.)

It should be the aim of those intrusted with the direct instruction of the children to see and feel that every exercise of the school should offer occasion for the child to put forth effort—effort that will result in acquired knowledge and skill. Also that there is no time for lawlessness and inattention. The program should be so arranged as to afford variety for the children calling different energies into action at different periods. Drawing should not follow writing; music and physical training should alternate with written work; reading, arithmetic, geography, etc., with music and manual work. A scientifically constructed program saves the time of the teacher and that of the child through the effective work accomplished.

We offer the following schedule, now in force in Rochester, N. Y., as a suggestion for Memphis, to be modified, of course, to meet different conditions.

Time schedule (Rochester, N. Y.).

Grades.	I[1]				II		III		IV		V		VI		VII		VIII	
	A. M.	Week.	P. M.	Week.	Day.	Week.	Day.	Week.	Day.	Week.	Day.	Week.	Day.	Week.	Day.	Week.	Day.	Week.
OPENING EXERCISES.																		
1. Registration																		
2. Inspection	10	50	10	50	15	75	15	75	15	75	15	75	15	75	15	75	20	100
3. Health Club																		
Reading	75	375	50	250	120	600	100	500	40	200	30	150	30	150	(2)	.....	(2)	.....
Language	20	100	15	75	25	125	25	125	30	150	30	150	30	150	50	150	50	150
Literature	45	45	45	45	15	75	15	75	15	75	15	75	15	75	50	100	30	120
Grammar	...	...	...	...	...	...	...	...	...	...	...	...	...	...	50	100	50	100
Arithmetic	...	...	...	...	45	225	45	225	50	250	50	250	50	250	50	250	50	250
Writing	10	50	10	50	15	75	15	75	15	75	15	75	15	75	15	75	15	75
Spelling	...	...	...	...	15	75	15	75	15	75	15	75	15	75	15	75	15	75
Geography	...	...	...	...	...	...	15	45	40	200	45	225	45	225	50	100	...	...
History and civics	...	...	...	...	...	...	...	...	...	...	10	50	10	50	50	250	50	250
Music	10	50	10	50	20	100	20	100	20	100	20	100	20	100	25	75	25	75
Drawing	30	60	30	60	30	90	30	90	30	90	30	90	30	90	30	90	50	100
Manual training																		
Domestic art	30	30	30	30	30	30	30	50	50	50	75	75	75	75	75	75	120	120
Domestic science																		
Physiology and hygiene	15	15	15	15	25	25	25	25	25	25	25	25	25	25	25	25	25	25
Physical training	10	50	10	50	20	100	....	160	...	160	...	160	...	160	...	160	...	160
Individual help	...	...	...	...	....	55	....	50	...	75	...	75	...	75	...	50	...	50
Nature study[4]	...	...	...	...	....	...	....	...	...	...	...	...	...	...	...	...	...	...
Total	...	825	...	675	....	1,650	....	1,650	...	1,650	...	1,650	...	1,650	...	1,650	...	1,650

[1] The time schedule provides for half-day sessions in the first grade, three groups in the morning and two groups in the afternoon.
[2] Extra time is provided for student activities.
[3] The Reading in the seventh and eighth grades is taught in connection with other subjects.
[4] No time is assigned as Nature Study is taught in connection with Language and Geography.

Morning session 8.45 to 11.45.
Afternoon session 1.15 to 3.45.
The kindergarten and first grade will close work in the morning at 11.30 and in the afternoon at 3.30.

SPECIAL CLASSES.

Some of the schools in Memphis have special classes for children who are making up lost grades or who are trying to skip a grade, or who are to do the work of a whole year in a half year. For example, one teacher will have an eighth-grade special, in which some of the children are failures and some are accelerates. They are taught together in the same classes in the most of the subjects. These classes are organized to take care of individual differences. They are a step in the right direction, but they should be much more numerous and better organized. The promotion system ought to be so arranged that the able children could really take advantage of and use their native ability. By means of intelligence tests and actual school results laggards also could be segregated or given less work to do.

Except for slight administrative difficulties it might be well to outline maximum and minimum courses for each grade and equalize the differences in the class by giving each group, selected on the basis of ability, work corresponding to its power of accomplishment. The department of psychology or bureau of educational measurements which has been recommended ought to make a study of this problem.

SCHOOL EXCURSIONS.

A drive over Memphis boulevards and the famous Speedway, through the beautiful parks, including a visit to the zoo, impressed us with the wonderful advantages for acquainting the children with the kinds of trees, the variety of flora, and the songs of the native birds and their haunts through school-excursion work.

The zoo is a concrete gold mine of opportunities to acquaint the children with the animal life of foreign lands, and every geography class in the city of Memphis should be given an opportunity for the study of its wonders. One is fairly fascinated with the curious life of animals, birds, and reptiles as depicted there.

In a round of school visitations we came in touch with one class that had visited the zoo the day before. While the faces brightened when interest was shown because they had had this experience, it was evident that the real and educational value of a school excursion had been lost somehow. In attempting to discuss the excursion with them they seemed to have gained little definite knowledge. Here, as on many other occasions, when children were asked questions concerning their work, they responded by asking, "What does she want me to say?" When the ice was fairly broken, their delight in having found an opportunity to just talk gave evidence that they had much to tell. Had the work been definitely planned and arranged for before going they would undoubtedly have had very much more to tell.

SCHOOL EQUIPMENT.

The man who is successful in business has a well-equipped office, store, or factory. The thrifty and successful farmer has the necessary tools and machinery to aid in the production of good crops and their conservation. The well-ordered house is supplied with those essential materials necessary for human needs and comfort. Memphis at every angle shows prosperity in its trade and industry, due to its having constantly sought for the best equipment. The schools, the workshops, filled with the choicest of God's products—the little children—are woefully barren of equipment. Those tools which are essential to a full comprehension and appreciation of the content of the subject matter as laid down to be taught are lacking. Teachers and children alike have a right to demand a certain equipment. The schools are in need of maps, globes, and supplementary textbooks, both for the teacher's desk use and for the use of the children. Especially is this true in geography and history. Every school should have a good lantern with an abundance of well-chosen slides suited to the work of different grades. Some one room in each building should be supplied with dark curtains, where there is no general assembly room, to be used on occasions by different classes. With a small expenditure of money for mounting board cut to a uniform size and a cabinet in which to file them, pictures can be collected and mounted for use in making all the school subjects more concrete. The stereoscope and stereograph are also needful and helpful parts of school equipment.

Another important phase of equipment is a cork bulletin board in every classroom, upon which can be displayed materials collected, so that they may be observed, studied, and talked about by all the children. Each school should be supplied with the various sets of weights and measures. For example, the foot rule, yardstick, tapeline, weights, liquid and dry measures, so that when these subjects are presented in the arithmetic period the children may have the experience of actually measuring and thereby evolve for themselves, through doing, that "two pints equal one quart," "eight quarts one peck," and "four pecks one bushel." Every school should be provided with an aquarium for fish and a terrarium for animals and insects, in order that nature specimens may be studied first hand. An equipment and environment conducive for every child to give the fullest expression to his self-activity and created instincts is an absolute necessity.

Many teachers in both elementary and secondary schools complain bitterly of the lack of supplementary books and illustrative material. They have nothing aside from the books and equipment prescribed in the course of study. There is, however, a wealth of material to be had free of cost such as will enrich the work in history, in geography, in natural science, and the like. It is worth while to give an example.

The International Harvester Co., of Chicago, issues a neat booklet entitled "The Story of Bread." The story is interesting and instructive, and will hold the attention of young and old, as the narrative traces the history of the development of the breadstuffs industry. The social and economic significance of bread and the inventions and machines that have made cereal raising the chief occupation are set forth. The pen sketches are helpful. This suggests the possibilities for teachers in other lines. Practically every transportation company in the country publishes maps of the United States or of local regions. These can be had free, as can the pamphlet above mentioned. In some instances a few cents' postage is required. The folders and special circulars issued by all railway and steamship companies contain excellent pictures of scenery. These pictures, when cut out and pasted upon cheap manila cards, and classified, can be used in the class to illustrate all phases of geography teaching.

Manufacturers, tradesmen, publishers, development boards, and, in one's own State particularly, the various boards of trade and chambers of commerce issue printed matter, pictures, maps, etc. These can be had for the asking. Hardware, lumber, and paint concerns; firms dealing in decorative materials, fabrics and the like, frequently have exhibits which trace the process of manufacture from the raw material through the various stages to the finished product. In this industrial age such material is of great value in the hands of a wise teacher. A tool catalogue with its many illustrations or a card holding the various bits of steel and showing the pen in the successive processes of manufacture—these may open up a new world to the boy or girl. The public is always ready to cooperate with the school.

Members of the Memphis Rotary Club and of other local civic bodies, representing various manufacturing interests, would, no doubt, be glad of an opportunity to cooperate with the teachers in providing cabinets or cases, showing the process of manufacturing which they represent. Every school should be on the mailing list for Government maps, charts, and bulletins of the agricultural and geological survey departments.

DISCIPLINE.

One of the most pleasing aspects of the school situation in Memphis is the uniformly splendid discipline throughout the school system. The relationship of pupils and teachers is most cordial and lays an excellent foundation for good work. All the members of the staff noted the friendly interest manifested by the teachers in their children and the respectful reaction to this interest by the children.

Some of the schools still use corporal punishment rather freely, but on the whole the practice is entirely out of fashion. The only

feature of the discipline which seemed at all bad was the rather too frequent practice of sending children to the principal for minor offenses or annoyances. Some other method ought to be devised for handling this situation, since the present method only weakens the teacher's control over the individuals concerned.

8. A SUMMARY OF OBSERVATIONS AND RECOMMENDATIONS.

1. The course of study does not meet the demands of modern education in the best sense of the word.

2. Many important activities are omitted from the course, namely, nature study, elementary science, manual arts, including cooking, sewing, drawing, manual training; the proper sort of physical training and school gardening. The child's environment as a basis of a course of study is totally ignored.

3. Many of the subjects now included in the curriculum are not in touch with modern needs and require reorganization, eliminating useless material and substituting that which is vital in the life of the child.

4. The course of study has no underlying principles or aims which control its plan. It is now merely a mass of unrelated, traditional pieces of knowledge thrown together regardless of the controlling aims of the educative process. There is no distinction between essential and nonessential elements in the course.

5. The methods of instruction are antiquated. The typical methods are memorization and "question and answer" recitations.

6. The present methods of instruction are wasteful of time and energy to say nothing of the great distaste they arouse in the child's mind for learning.

7. The arithmetic is poorly taught and poor results are obtained.

8. The music is devoted too much to study of musical notation and not enough to good singing.

9. The schools are poorly equipped for good teaching, lacking libraries, laboratories, maps, charts, globes, manufacturers' exhibits, weights, measures, auditoriums, lantern slides, pictures, and the like.

10. The schools show need of helpful, constructive supervision.

11. The teachers need more academic and professional training before appointment and after appointment.

12. Many of the teachers are not qualified for the positions they are now holding.

13. The "aid system" is bad, hard alike on the teachers and aids.

14. Many of the principals are out of touch with modern elementary school practice.

15. The principals in all cases are not good school administrators.

16. There are inadequate facilities for play and recreation.

17. No provision is made for first-hand knowledge such as would be provided for by laboratories, gardens, excursions, etc.

18. The teachers are dissatisfied with salaries and with the general policy of the school system.

19. Teachers waste time in school by making out reports.

20. There is too much home study.

21. Teachers do not always cooperate with their principals.

22. The geography instruction is lifeless on account of a poor course of study and lack of equipment.

23. The grammar phase of the English work is overemphasized and is not approached inductively.

24. The reading is narrow in its scope and the children are backward in comprehension of material read.

25. The spelling is good but at too great a cost of time and work.

26. The history is not closely enough tied up with present-day problems.

27. The material of the course of study should be based upon the social, intellectual, and physical environment.

28. The future course ought to include those activities that we have indicated as being omitted.

29. The course should be flexible enough to admit new material, as it proves its value for the child's growth.

30. Methods of instruction and courses of study should be so modified as to permit the use of projects and larger units of activity, thus affording wider employment of the child's own interest and activities, placing thereby the emphasis upon learning and growing through doing rather than through memorization.

31. Methods of teaching should be founded upon the instincts and nature of children.

32. All the teaching should employ the fundamental principles of self-activity of the children, concreteness, correlation, and apperception.

33. Teachers must learn teamwork.

34. Teachers should plan their work more carefully.

35. No teacher should have more than 35 children.

36. The principals should be trained for supervision and methods of instruction in order that they may offer teachers real supervision, by demonstration if necesary; and also that each principal be required to teach a few hours regularly each week.

37. Teachers should be encouraged to use their initiative and creativeness.

38. Teachers' meetings should be held at regular intervals, with a definite program of work laid down for such meetings.

39. Excursions for instructional purposes ought to be organized for every teacher three or four times yearly.

40. The teacher's day need not be longer than eight hours, including preparation.

41. Children should be promoted according to their ability to progress.

42. A bureau of educational research should be established to assist in the supervision and testing of instruction.

43. Kindergartens ought to be established.

44. The junior high schools ought to be established as soon as possible.

45. Physical training and health training ought to be thoroughly reorganized.

46. The manual arts, fine and industrial, ought to be developed to a much higher degree.

47. An elementary science or nature study course of study ought to be organized for each of the elementary grades.

48. School museums are a necessity.

CHAPTER II. THE HIGH SCHOOLS.

CONTENTS.—I. Introduction—Pupil groups that leave school; failure and elimination. II. The high school curriculums—Theory of the curriculum; new curriculums recommended; the Latin and modern language sequence; the mathematics sequence; the English sequence; the sequence of social studies; the natural science sequence; the sequence of applied arts. III. High-school teachers—Difficulty of measuring worth, standard of qualifications; types of faulty technique. IV. High-school administration—Principles of internal government; organization of pupils; size of classes; organization of executive and teaching staffs; the library and librarian; male teachers needed; supervised study and the socialized recitation; student self-government; the building and equipment. V. Summary of conclusions and recommendations.

I. INTRODUCTION.

The people of Memphis, through their board of education, maintain and operate three high schools: The Central High School, the Vocational High School, and the Kortrecht High School for the colored children. These schools through their organized activities embody what is being done, consciously or unconsciously, by the citizens of Memphis to accomplish two very definite civic and social purposes.

The first of these purposes is to meet the needs, the legal requirements, and the educational policies of the State of Tennessee, so far as these apply to the city school districts, and to pupils who have won promotion into the high schools from the elementary grades. These legal requirements are expressed in the State statutes, and are interpreted and administered for the most part through the State department of public instruction, whose function it is to see that the school laws are lived up to and the department's administrative policies carried out.

Every child in the State is a part of the State and an actual or potential citizen, and no matter where he may dwell within its boundaries his proper maintenance, growth, and training are of direct and deep concern to the safety, welfare, and prosperity of the State.

Hence the larger good of the State and the Nation should have an important place in the thought of the community concerning the education of its children.

The second of the two purposes above mentioned touches more nearly the intimate community life and growth of Memphis itself. This is to develop and train those children who in a very few years are to become the leaders of Memphis. The great bulk of the people in every city who to-day are making it what it is—who are shaping its municipal policies, developing its commerce and its industries and directing its team play for social and civic enterprises, such as public-health protection, music, art, architecture, city planning and beautification, parks, playgrounds, Y. M. C. A., Y. W. C. A., churches, and charitable institutions—are graduates or ex-students of its public high schools.

Hence a progressive school system, with good modern high schools, based on thorough elementary schools, makes a progressive city. This must be true of Memphis no less than of other cities. The pupils now in its high schools will determine its development 15 and 20 years hence. If its high schools fulfill their complete measure of responsibility, that development will be marvelous. If either because of inadequate internal administration or because of improper or incompetent or unwise external control they fail to function effectively, Memphis will retrograde. This is a matter in which every citizen of Memphis is vitally concerned and should be deeply and actively interested.

PUPIL GROUPS THAT LEAVE SCHOOL.

The high schools of the city, in conjunction with the elementary schools, constitute a selective agency which picks out from the children between the ages of about 13 and 20 a limited body, small in proportion to the whole number, and gives them courses in training of from a half year to four years' duration, according to the length of time they continue in attendance. Many of them drop out by the way, and thereby cease their training so far as the high schools are concerned in it. Any further training that these children may possibly obtain is obtained in their employment or by other agencies, such as business colleges, Y. M. C. A., Y. W. C. A. classes, correspondence schools, or private reading and study. Undoubtedly a part of those who drop out do so because they are unable or unwilling to profit by the kinds of training that the high schools are giving them.

Some of these must be lacking in the capacity to profit by further school training of any sort; but it may be that a considerable number of them could profit by further training and can not now get in the high schools the particular kinds of training that they want and could profit by. If the elementary schools and the high schools acting in conjunction with them are functioning properly as selective agencies, the former class should be discovered and eliminated after completing the eighth or at most the ninth grade and they should not be turned out on the streets, but should be trained for or directed into the jobs where they can do the best for themselves and the community. This class raises the question of vocational guidance, which is discussed in detail in Chapter IX. On the other hand, if there are many of the second class—those who could not profit by further training if among the courses provided there were such as would meet their needs—then the high schools are failing as selective agencies because they do not hold these children, and are failing as training agencies because they do not provide the training that this class of youth could use.

This class raises the question of better curriculum organization, which is discussed in this chapter. There is also a third class of

pupils who leave school, not because of either of the two conditions just mentioned, but because economic pressure compels them to go to work to assist in the support of themselves and the family. Undoubtedly many of these could profit by further training to the benefit of both themselves and the community, and for such as these especially many communities are providing night schools, part time or cooperative vacational courses, and continuation schools.

CONNECTION BETWEEN FAILURE AND ELIMINATION.

There is a direct connection between failures and elimination. Absences constitute the most potent cause for failures, and failures constitute the most potent cause for leaving school. Again both absences and failures are largely caused by lack of interest in the work. In spite of sickness and other causes of necessary absence, those who like the work and are successful with it when they attend manage for the most part to make up the losses due to their absence and meet the requirements for promotion. Hence failures and elimination occur most among those who are not interested in their work or who find it too hard. Tables showing the percentage failing in the Central High School are given in Chapter II.

A large percentage of failures in a given subject may mean one or all of several things:

1. The pupils are too immature or not well prepared before entering class.

2. The work does not make vital appeal to them because they can see no connection between it and their aims and interests.

3. The teacher's requirements are too rigid and his marks are too low.

The remedy for the first condition is more care in making promotions to the high schools from the elementary grades. Not many pupils are passed into the high school who are mentally too immature; but it is probable that many are passed on from the eighth grade who are not thoroughly grounded in the elementary work and who have not learned how to study there.

The only remedy for this condition consists in better teaching and more attention to holding every pupil to a strict accountability for thorough study and the faithful performance of tasks in the elementary schools. If the elementary teachers are competent and not overburdened with too many pupils, if the classes are properly graded, if the supervisor is adequate, and if an efficient system of testing the pupils is in use, there is no reason why every healthy and mentally normal pupil should not be promoted to the high school at the age of 14 or 15 years. If these normal pupils are guided into the kinds of high-school work to which they are adapted by their interests and natural aptitudes, very few of them should

fail there. Pupils who are physically or mentally defective should not enter the high schools, but should be discovered earlier and set apart for training in special classes for the kinds of work they can do.

The remedy for the second cause of failures consists, first, in better educational guidance for the pupils, in order that they may select courses adapted to their interests, capacities, and needs, and, secondly, in better methods of choosing, organizing, and teaching the subject matter in the various high-school studies.

The remedy for the third cause of failures is obvious. The teachers who are too exacting should be made to use less severity, more inspiring methods, and better judgment.

Based upon studies made in the Central High School, the details of which it is unnecessary to set forth, the following conclusions are drawn:

1. A large proportion of the pupils are undecided as to their future occupations. They have no present definite intentions as to what sort of the world's work they are best fitted for and really want to do.

2. Therefore, the high schools can best serve these by giving them knowledge and experience in rather a wide range of the various fields of thought and activity, allowing them to choose as their major work such sequences of studies as lie nearest the interests that they already have manifested.

3. The high schools should require of all the pupils certain studies and activities such as history and civics, written and oral English composition, English literature, experimental science, advanced geography, and physical training, that are absolute essentials in the training of intelligent citizens. These should appear as required lines of work, up to certain minimum amounts in all high-school curriculums. They are therefore termed constants, because pupils must pursue them.

4. In order to prevent dissipation of effort and to hold each pupil to continuous and persistent endeavor in some chosen lines of work, there should be sequences of courses in a variety of different lines each involving three or four consecutive years of work. These are therefore termed major sequences, or major groups.

5. In order at the same time to secure the principles set forth in 3 and 4 above as to constants and major sequences, and to afford opportunities for groups of pupils having different talents and capacities to get acquaintance with a wide enough variety of the various lines of training, each pupil should be required to pursue major sequences of three or four consecutive years of work in two different lines, and minor sequences of two consecutive years of work in two other lines.

These requirements insure both breadth and depth of training and allow for some choice of elective studies in making up the number of units required for graduation. In every case the constants will be included within the major sequences, the minor sequences, or the electives.

II. THE HIGH SCHOOL CURRICULUMS.

DEFINITIONS OF TERMS.

Discussion of school studies involves the use of certain time-saving terms which, in order to insure clearness to the reader are here defined. *A course of study* means an arrangement of the facts, laws and principles of a single subject placed for study and training in the order and relations according to which they are to be presented to the group of pupils who are to learn them. The course of study may be arranged to be completed in a school year or half year with required attendance in the class on five days per week, or fewer.

A unit course of study, or more briefly, a unit is a course of study in which the student attends five class periods a week, each of not less than 40 minutes duration (exclusive of time taken in going from one class room to another), for one school year of not less than 36 weeks. Defined in terms of the time required in class attendance the unit course of study consists in the pursuit of one subject for a total net time in the class room of 7,200 minutes, or 120 clock hours. For work in shops and laboratories for which no time is required for study outside the classroom a double laboratory or shop period is counted as a single-class period. Graduation credits or college entrance credits of fractional parts of a unit may be gained in classes running five days per week for a half year, or four or three or two or one day per week for a whole year. Standard colleges do not give credit in any subject of study for course of less than half a unit.

The program of studies is a complete list of all the courses of study offered in a school. These courses of study may be grouped into major or minor sequences.

A major sequence consists of three or four consecutive unit courses in a single subject or in closely related subjects.

A minor sequence consists of two consecutive units in a single subject or in two closely related subjects.

The constants consist of certain studies or sequences of studies which are deemed necessary to the education of all pupils and which therefore appear in all curriculums as studies required for graduation.

A curriculum is a systematic arrangement of major and minor sequences and single courses of study, requiring three or usually four years for its completion and fulfilling the requirements for the diploma or certificate of graduation from the school. In schools organized on the 8-4 plan, as those of Memphis are, the elementary

curriculum is normally completed in eight years and each of the high-school curriculums in four years. In schools organized on the 6–3–3 or junior-senior high-school plan the elementary curriculum normally required six years, the junior high-school curriculum three years, and the senior high-school curriculums three years, respectively, for their completion. Small schools ordinarily can offer only one or two curriculums, but large schools have the great advantage of being able to offer many, each of which is planned to meet the needs of some important group of students.

The timetable of schedule of classes is a chart which shows the sections into which the classes of pupils are divided for recitations, together with the times when they meet, the rooms where they meet, and the teachers who instruct them.

THEORY OF THE CURRICULUM.

According to the theory commonly held by educators and by people generally until quite recently the curriculum consisted only of subject matter to be learned largely if not entirely from books. Modern educational doctrine, however, has a much wider scope and gives to the word curriculum a much more comprehensive meaning. Education is now regarded as a process of conscious evolution in which the human race takes itself in hand and raises its own level of intelligence and welfare by passing on to the rising generation the essential and worthy achievements of the past and present.

The school program of studies, then, represents the selections from the accumulated knowledge, skill, and achievements now possessed by the race which its adult members intend to bequeath to their children as a social heritage, to be held and improved and passed on in like manner to future generations.

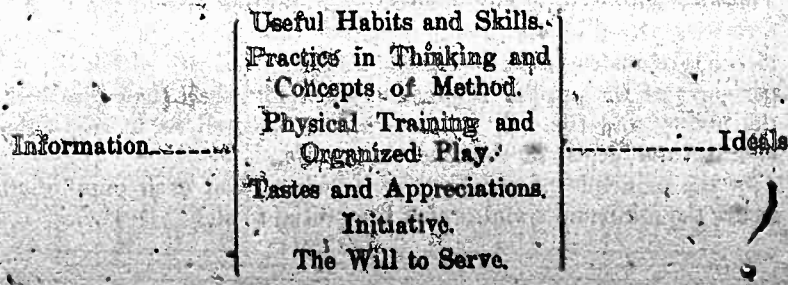
Each study has its science and its art, its theory and its practice, or its subject matter and its method. That is, in each kind or branch of knowledge or skill that is to be learned there are two things, so to speak, the materials and rules of the game and the method of playing it successfully. According to the modern view, then, we must teach the method as well as the subject matter and teach them together; the pupils must learn not merely by memorizing but by doing as well. He must learn the game by intelligently self-directed practice under the guidance of the teacher. Furthermore, since children differ in their natural endowments, inclinations, and aptitudes, they will not all do the same things in life, so all the things in the program of studies will not be taught to each one. The pupils will fall naturally into certain groups, and the aims of those in one group will differ considerably from the aims of those in another group, while within each group the aims of its members will be somewhat alike. Hence for each group it is desirable to select from the program of studies those studies

which will meet the needs of that group and form these studies into a curriculum. There will thus be several curriculums, one for each important group of pupils, but each curriculum should contain the studies and activities which it is important to society that all children should learn.

However, according to the modern view there are more things in the curriculum than mere knowledges and skills. There are certain highly important habits of conduct that must be formed. There are ideals and standards of thought and taste and of individual and civic character which constitute the most cherished achievements of the ages, and these must be inculcated and become a part of each individual's make-up, so far as this can be accomplished. So also the world needs thinkers, and every individual needs to learn how to think; consequently every subject taught should give the pupil some practice in thinking and some concepts as to the best methods of thinking out problems and carrying out projects. Again, everyone should learn about and enjoy some of the finer things of life, such as literature, music, drawing, painting, sculpture, architecture, interior decoration, landscape gardening, and the charm of the out of doors. Some of these experiences he must have in order that he may acquire tastes and appreciations for the things that refine and that provide for recreation and the harmless enjoyment of leisure hours. We Americans especially need to learn how to play out of doors. We need to form habits of employing our leisure healthfully and profitably. There will be great social danger in the shortened hours of labor that are surely coming unless we train our youth in beneficial and refining habits of employing their leisure hours.

Finally we must have leadership, individual initiative, and devotion to the common good—the will to serve. All these are part and parcel of the curriculum in its modern conception, and in every subject that is taught the teacher should have them in mind. The following diagram shows how these elements of the modern curriculum are related to one another, and shows them in such form that they may easily be kept in mind for the studies and discussions of the curricula of the Memphis high schools which follow.

THE CURRICULUM.



The above diagram shows that all these important elements of the modern curriculum are related both to information and to ideals. For example, the efficient formation of a fundamentally useful habit, such as neatness and system in the preparation of school papers and notebooks must be based on information from the teacher as to the right ways of arrangement and execution. Then, knowing the right way, the pupil fixes the habit by attentive and purposeful repetitions of the act. He must make the various moves in the right ways and in the approved order on every occasion that calls for the act and must not permit any lapses until the act has become automatic and requires no further thought or attention. Furthermore, he will not do this unless he gets satisfaction out of the result. Having formed some habits of neatness and system through the use of the necessary information, and having gained further information through experience and observation of the convenience and satisfactory appearance of the product, the student gradually develops appreciation of neat and well-arranged papers and of efficient methods of preparing them. With appreciation of neat product and efficient methods comes a taste for turning out that kind of product. Also, under skillful and earnest guidance and inspiration from the teacher, who points out the beauties and advantages of neat and orderly products in other fields of work, an ideal of turning out neat and tasteful products in all his other lines of endeavor begins to take hold of the student and control his aims and efforts. Ideals constitute the motive power that drives human beings toward accomplishment. Boys and girls, men and women, do in spite of obstacles what they think and strongly feel is most worth while. They try to make conditions fit their ideals of what the conditions ought to be. Furthermore, when they meet difficulties they have to think their way out; and this requires both thinking ability and initiative. So from this concrete example it becomes clear that habit formation and the acquisition of skill are closely related to acquiring information, developing tastes and appreciations, forming ideals, and thinking out problems.

In like manner every one of these elements of the modern curriculum is related by means of information and ideals to every other. Therefore in teaching any subject or in guiding any of the pupils' activities, the teachers should recognize this relation and use such methods of instruction as will combine these elements within the experiences of the pupils. Thus, and thus only, shall they gain both the ability and the will to serve society, as well as to enjoy the breadth and depth of rich individual life.

Is the principle of constants observed, so that each pupil shall secure the minimum training that is essential to all?

THE CENTRAL HIGH SCHOOL CURRICULA (1917).

ELECTIVE (Select four subjects)	LATIN	HISTORY	SCIENTIFIC	MODERN LANGUAGES	COMMERCIAL	TECHNICAL	HOME ECONOMICS
English Music Gymnastics } 5 Arithmetic Algebra Ancient History A Modern Language Latin Military Vocational Guidance General Science Typewriting Business English Commercial Arithmetic Shop Work Home Economics Art Chorus	Take: English Latin Algebra Arithmetic Music } 5 Gymnastics Elect one: General Science Ancient History	Take: English Ancient History Algebra Arithmetic Music } 5 Gymnastics Elect one: General Science A Modern Language Latin	Take: English General Science Algebra Arithmetic Music } 5 Gymnastics Elect one: A Modern Language History Latin	Take: English French, German, or Spanish Algebra Arithmetic Music } 5 Gymnastics Elect one: General Science History	Take: English Commercial Arithmetic. Business English, Spelling, and Penmanship Expression Music } 5 Gymnastics Spanish or French or German	Take: English, Algebra Joinery and Cabinet, and Mechanical Drawing and Art Elect one: History A Modern Language General Science Vocational Guidance	Take: English Cooking and Sewing Algebra or First Year Mathematics Music Gymnastics } 2 Elect one: General Science A Modern Language History. Art
English Gymnastics Expression Algebra Geometry Medieval History A Modern Language Latin Botany and Zoology Stenography Typewriting Shop Work Home Economics Art Chorus Military	Take: English, Latin Geometry Gymnastics Expression Elect one: Botany and Zoology French, German, or Spanish Medieval History	Take: English Modern History Geometry Expression Gymnastics } 4 Elect one: A Modern Language Latin	Take: English Botany and Zoology Geometry Expression Gymnastics } 4 Elect one: A Modern Language History Latin	Take: English First Language [Con.] Geometry Expression Gymnastics } 4 Elect one: A Second Modern Language History Botany and Zoology	Take: English, Bookkeeping, Gymnastics (2) First Year Mathematics, Modern Language [Con.] May select three periods: Expression (3) Music (1), Study (3) Salesmanship (3)	Take: English, Pattern Making and Wood Turning and Mechanical Drawing, Geometry Elect one: A Modern Language History Physical Geography	Take: English Cooking and Sewing Expression Gymnastics } 5 Design Elect one: A Modern Language History Applied Art Geometry or Second Year Mathematics
English Algebra Geometry Modern History A Modern Language Public Speaking Commercial Law Business Correspondence Bookkeeping Stenography Typewriting Shop Work Home Economics Military, Physics Physical Geography History of Commerce	Take: English, Latin Algebra Elect one from: Physics, Physical Geography, Modern History Elect one from: French, German, or Spanish	Take: English Modern History Algebra May elect two: A Modern Language Latin Physical Geography Botany and Zoology	Take: English Physics Algebra (common) A Modern Language May elect one: History Latin A Modern Language	Take: First Modern Language [Con.] Algebra (common) May elect two: Physics Physical Geography History Second Modern Language	Take Continue Bookkeeping, Stenography, and Typewriting, English Literature and Bus. Correspondence, Commercial Law and History of Commerce May elect one: Economics Modern Language * May postpone to Senior Year	Take: English Forge Work Algebra (common) Physics Elect one: A Modern Language History Commercial Geography	Take: English Cooking and Millinery and Household Chemistry. Applied Art Elect one A Modern Language History Chemistry
English, Art American History and Civics Commercial Geography, Trigonometry A Modern Language, Finance, Latin Commercial Law, History of Commerce Chemistry. Physics Stenography Home Economics Typewriting Chorus, Geometry Economics. Physical Geography Shop Work Military Public Speaking	Take: English, Latin, American History and Civics Elect one: Geometry Trigonometry. Chemistry French, German, or Spanish	Take: English American History and Civics Elect two: Geometry Trigonometry Science (one) A Modern Language Latin	Take: English, Chemistry American History and Civics Geometry and Trigonometry May elect one: A Modern Language Physical Geography Latin	Take: English First Modern Language [Con.] American History and Civics Elect one: Geometry and Trigonometry Second Modern Language Chemistry	Take: Stenography and Typewriting, American History and Civics, Commercial Geography May elect one: Commerce and Finance, Economics,* English Literature and Business Correspondence *Business Economics required in Third or Fourth Year	Take: English Machine Shop Chemistry Geometry and Trigonometry American History and Civics must be taken in Third or Fourth Year	Take: Cooking and Millinery American History and Civics Applied Art May elect a Modern Language

The preceding chart shows the curriculums of the Central High School as they now stand. Reference to this and to the circular of information that is placed in the pupils' hands reveals the fact that the constants are four units of English, one unit of American history and civics (in grade 12), where it should be, two units of foreign language, and two units of mathematics. The principle of constants is therefore observed, in theory; but in the opinion of the surveyors the constants specified are not specified in the right amounts. Too much English and too much mathematics are exacted of some pupils and not enough social studies; while foreign language certainly should not be forced upon all high-school children.

According to the belief of many of the best authorities in education, two units of English, two of social studies, and one each of science and mathematics should be constants, required of all students for graduation. One of the units of social studies, assuredly should be American history and civics, and this should be taken in the last year of the high school. The high-school students have then reached the age when they take a strong and lively interest in their personal relations to citizenship and social cooperation for the achievement of common purposes. Why one year of science at the very least should be insisted on will be explained in Chapter VII, which deals especially with science instruction in the Memphis schools.

Is the principle of major and minor sequences observed, so that persistence of effort and both depth and breadth of training are secured for each pupil?

Again referring to the curricula, we see that the major and minor sequences are as follows:

Curriculums.	Major sequences and numbers of units.[1]	Minor sequences and numbers of units.
Latin	English, 4; Latin, 4; Mathematics, 3.	None.
History	English, 4; history, 4; mathematics, 3.	None.
Scientific	English, 4; science, 4; mathematics, 4.	None.
Modern language	English, 4; modern language, 4; mathematics, 3.	None.
Commercial	English, 3	Arithmetic and bookkeeping, 2; stenography and typewriting, 2; modern language, 2; social studies, 2.
Technical	English, 4; drawing and shop, 4; mathematics, 4.	Science, 2.
Home economics	English, 4; cooking, sewing, and millinery, 4.	None.
Elective	English, 4	None.

[1] The Arabic numerals tell the number of years or units offered.
[2] Machine shop. Schedule for the fourth year can not be given. There is no machine shop, which is a pity.

From this comparative table it appears that four of the eight curriculums require three majors and no minor; one requires three majors and one minor; one requires one major and four minors; one requires two majors and no minor, and one requires one major and no minor.

Thus, as far as the general requirements for graduation are concerned, it is evident that the principle of requiring two major se-

quences and two minor sequences from every candidate for graduation is not upheld. The curriculum that most nearly approaches the application of this principle is the "Technical," which requires three major sequences and one minor sequence.

However, in each of the curricula it is possible for the student to obtain from the elective studies certain major and minor sequences; so that this principle of depth and breadth of training might be enforced by a general graduation requirement. The school is not now making such a general requirement. In the Latin curriculum a student may elect a major or a minor sequence in either science or history in the history curriculum, a major or minor in Latin or in a modern language, or a minor in science. In the scientific curriculum he may elect a major or a minor in history, in a modern language or in Latin. In the technical curriculum minor electives are offered in modern history and geography, in the home economics curriculum a major or a minor in history or in a modern language and a minor in art; while in the commercial curriculum no additional major or minor sequences are obtainable, and in the elective curriculum either majors or minors may be obtained in Latin, modern languages, mathematics, science shop, home economics, commercial work or art.

CURRICULUMS NOT WISELY PLANNED.

It is clear, therefore, that the program of studies is broad enough and there are sufficient sequences of studies to make it "deep" enough, so that any student may get two majors and two minors. Furthermore, according to the rules of choice announced by the school circular mentioned above, a major sequence in English and minors in mathematics and in a foreign language, together with one year of history and one of science, must be included by every student among the 32 half units to be completed for graduation. Yet even with these specifications of constants the curriculums in many details are not wisely planned. In the first place, the requirement of constants just stated can not be fully met by pupils in the commercial curriculum without going outside this curriculum for the one year constant of science and without crowding the electives out of the [illegible] year. In the second place, in many cases the sequences of studies are not well and consistently arranged and the constants are not wisely chosen. Thirdly, the curriculums and the sequences of studies seem to be arranged with the idea most prominently in mind of giving the pupil a very wide and free choice of studies that he may fancy to pursue or choose to avoid. These curriculums do not appear to be planned with the idea of offering him or her a choice of a consistent and purposeful program of training for the kind of work that he or she is naturally fitted for and wants to do in the living working

world. Nor do the schools have and carry out an efficient plan of educational and vocational guidance that would help the pupils to discover their capacities and aptitudes and give them the information about the studies of the high-school program that would enable each to choose the curriculum that should give him or her the best training for present needs and future career. Fourthly, and finally, in effect, the curricula practically (though not nominally) allow the pupils almost unlimited liberty in choosing studies.

This liberty of elections makes it exceedingly difficult to construct a time-table that will work, especially when there are many pupils who fail and become "repeaters" in one or more subjects or turn to some other subject that has gained an "easy" reputation.

Furthermore, large liberty of election is not good for pupils of high-school age. They do not know enough and can not know enough to choose wisely among such an array of studies. Neither are their parents nor even many of their teachers well enough versed in the philosophy and science of education and the details of the various lines of training to guide them through such a labyrinth of mysteries. The free-election system is being abandoned in the colleges. Assuredly, then, it has no place in the high schools.

NEW CURRICULUMS RECOMMENDED.

The members of the survey commission, therefore, have reached the conclusion that it would be advisable to suggest for the Central High School a group of curriculums definitely planned to meet the needs of each of the several groups into which the pupils attending that school would naturally fall when classified according to the data which the commission has obtained concerning the needs and probable aims of the children themselves and concerning the needs and activities of the community of Memphis and its tributary territory.

These classes into which the pupils seem naturally to fall are as follows:

1. Those who intend to continue their general education in colleges of arts. For these an "Arts preparatory curriculum" has been planned which will fit them for any college of arts, philosophy, and science; in other words, any college of the usual sort.

2. Those who intend to enter colleges of engineering, medicine, agriculture, or commerce and journalism for specific higher training in the professions in which much knowledge of the sciences and of mathematics is necessary. For these the "Science Preparatory Curriculum" is offered, which will fit them for such colleges and professional schools.

3. Those who on graduation from the high school will go directly into business and commercial lines. For these the "Commercial Curriculum" has been planned. This will give them both breadth and

depth of education for citizenship as well as specific preparation for starting a business career in a store or office or warehouse.

4. Those who will go directly into the industries or manufacturing lines, where knowledge of shop work and science are essential to success, and who expect to work up through shop experience into positions of responsibility in the management of such businesses. For these the "Industrial Curriculum" has been outlined.

5. Those girls who do not intend to go to college, nor into business, but whose main interests center in the home. For these, the "Home Ecomonics Curriculum" has been planned. This will afford a good cultural training for the woman citizen, as well as specific training in the science and art of home making.

6. Those whose main interest is in music. For these the "Music Curriculum" offers a central core of musical studies with the other studies that are basic for both general culture and social and civic activity, together with a line of elective studies to be chosen from among those offered in other curriculums.

7. Those whose main interest is in art. For these the "Art Curriculum" is offered, with a core of art studies and with other studies essential to a fine type of social and civic life. Here also the girl or boy may choose one elective study in each of the first three years and two in the fourth.

The arts preparatory curriculum.[1]

Grade.	Ninth.	Tenth.	Eleventh.	Twelfth.
Foreign language	I	II	III	IV
English	I	II	III	IV
Mathematics	I	II	or III	
Natural science	Civic biology or	General geography or	Physics	Chemistry or mathematics or physics III.
Social studies	Civics	Ancient and medieval history.	Modern history	American history and civics. IV
Physical training	I	II	III	

[1] For students who intend to enter colleges of arts.

Music or art or both may be elected for three periods per week.

This curriculum provides sequences of four years in Latin or a modern foreign language (French or Spanish), four in English, three in mathematics, four in natural science and four in social studies; but since there are 20 units represented (five for each year) they can not all be taken by any one student. Most schools require 16 units for graduation, as the Memphis Central High School does, and most of the colleges require 15 for full entrance credit. Hence there must be options allowing the omission of four of the 20 units. Thus in the first year there is indicated an option between civic biology and community civics; and in the second year between general

geography and ancient and medieval history. In the third year any student may choose either third year English, third year mathematics, or physics; and in the fourth year he may study chemistry, or he may substitute for it either physics or third-year mathematics if he has omitted either of these in the third year and still wants to get it, rather than chemistry. Since the maximum requirements of practically all of the arts colleges for both men and women are satisfied by four years of Latin or a modern language, four of English, two or three of mathematics, two or three of social studies and one of science—with a total of not fewer than 15 units, it is clear that by exercising the proper options in this curriculum of 16 units the student may prepare himself to meet the requirements of any arts in college in the country, provided that the content of the courses and the methods of teaching them are satisfactory. Furthermore, this curriculum as well as each of the others presented here, fulfills the requirements of the constants and major and minor sequences, which we already have explained, and laid down as a basic principle.

According to the recommendation of the survey, the reasons for which are fully discussed in Chapter X, on Health Work in the Memphis Schools, this curriculum in common with the others requires each student to carry five periods per week, each year, in physical training. This makes the daily program of the student look like a heavy one; but it should be remembered that a certain amount of physical exercise and play is necessary for everyone in order to maintain health and build a good body. Provision is also made for crediting against this requirement exercise taken in other ways, and outside the scheduled hours. It is claimed by hygienic authorities that students do more and better work in their studies with this regular physical exercise than they do without it; and it, of course, requires no study or preparation outside the scheduled periods.

In addition to the regular four unit courses per year and the physical training, it is provided that the student may take work in music or art up to three periods per week. This work is to require no study outside the classroom.

The science preparatory curriculum.

Grade.	Ninth.	Tenth.	Eleventh.	Twelfth.
Foreign language	I	II	III	IV
Mathematics	I	II	III	
English	I	II		IV
Social studies	Civics	Modern history	American history	Problems of democracy.
	or			
Natural science	Civic biology	General geography.	Physics	Chemistry.
Physical training	I	II	III	IV

Music or art or mechanical drawing and shop work may be elected up to 3 additional periods per week.

This curriculum is less flexible than the preceding, having only one option—that between civic biology and community civics. It, however, meets the requirements of standard colleges of engineering, technical schools and premedical courses, and also gives a good all-around training for boys who like science and mathematics.

The commercial curriculum.

Grade.	Ninth.	Tenth.	Eleventh.	Twelfth.
Drawing and shop-work.	.....	.....	I, II, or III	II, III, or IV
Music or art.....	.....	.....	or I	or II
Language.....	English composition, spelling, punctuation, literature I.	English composition, rhetoric, literature II.	or Foreign language I, or English composition and literature III,	or Foreign language II, or English composition and literature IV,
Natural science....	Civic biology.....	General geography.	or Physics.....	or Chemistry, agriculture, or botany, and forestry.
Social studies.....	or Civics.....	Modern history....	American history.	Problems of democracy.
Mathematical studies.	Commercial arithmetic and bookkeeping.	Bookkeeping and office practice.	Costs and contracts, salesmanship and advertising.	Auditing, banking, and finance, insurance and investments.
Commercial studies	Stenography and typewriting.	Stenography and typewriting.	Office and factory management, personnel work, elementary business law.	Elements of economics IV.
Physical training..	I	II	III	IV

Music or art or mechanical drawing and shop work may be elected in the first and second years up to 3 periods per week; also in the third and fourth years if full courses in either of these subjects are not chosen as indicated above.

This curriculum makes a very strong course of preparation for any boy or girl wishing to start in a store or office and work up into a business career. It requires the studies most essential for business and citizenship; and it provides by options in the third and fourth year for either a good training in the sciences that underlie the business activities of Memphis and its vicinity, or for two years of additional study of English composition and literature, or two years of foreign language or of shop work and drawing or of art or music. Hence an abundance of both vocational and cultural training is provided by it. The students who choose this curriculum are not hampered by being compelled to take a foreign language or college preparatory algebra and geometry, but take instead studies that are just as good for intellectual development if well taught. However, if they strongly wish to do so they may choose these

studies instead of the scientific ones, and still have the essentials of a good commercial training.

Another strong point in the make-up of this curriculum consists in the fact that the first half of it affords for those who can stay but two years in high school an excellent short business curriculum, containing the essentials for citizenship and for preparation for work in an office or store. Therefore it would be advisable to grant a certificate of proficiency to such pupils as shall have satisfactorily completed these first two years and must then leave school. In every school there are many such, and their needs should be provided for by just such a short course of training.

Another great advantage of this curriculum is that many pupils will be held in high school by it who would otherwise drop out; for many will enter a two years' course who would not enter at all if they must spend four years in getting what they want. A good share of these also, having stayed two years and succeeded in the work because it was the kind of work they wanted to do, would by that time appreciate the great value to them of further training; and these would remain and graduate in the four-year curriculum. Thus they would train themselves for ultimately rising to managerial or secretarial positions instead of remaining as under clerks or petty sales people.

The industrial curriculum.

Grade.	Ninth.	Tenth.	Eleventh.	Twelfth.
Drawing and art	.....	.....	Freehand drawing, color and design I, or	Freehand drawing, color and design II, or perspective and projection II, or
Language	English composition, spelling, punctuation, literature.	English composition, rhetoric, literature.	Foreign language I, or English composition and literature III, or	Foreign language II, or English composition and literature IV. or
Mathematics	Algebra (5), or algebra (2), geometry (2), graphs, and geometrical construction,	Plane and solid geometry (5), or algebra (2), geometry (2), graphs, and geometrical constructions (1).	Advanced algebra, trigonometry, and elementary coordinate geometry.	
Social studies	Civics ..... or	Modern history	American history	Problems of democracy.
Natural science	Civic biology	General geography	Physics	Chemistry.
Industrial practice.	Mechanical drawing and woodwork.	Drawing and cabinetmaking, wood turning and pattern making, bench-metal work or sheet-metal work.	Forge work, foundry practice, or drawing and machine shop.	Machine drawing and machine shop.
Physical training	I	II	III	IV.

Art or music may be taken each year as an additional part-unit elective up to three periods per week, excepting art in the third or fourth year, when full unit art courses are chosen as electives.

This curriculum in its main features is similar to the commercial, excepting that the course consists of drawing, shopwork, science, and mathematics instead of commercial studies. It has the same advantages for the boys who are mechanically and scientifically inclined that the commercial has for those who are commercially inclined.

The home economics curriculum.

(See also course outlined in Chapter IX.)

Grade.	Ninth.	Tenth.	Eleventh.	Twelfth.
Art	Drawing, color and design I.	Drawing, color and design II.	Drawing, color, and costume design III, or	Drawing, color, and interior decoration IV, or
English	Composition, spelling, punctuation, literature I.	Composition, rhetoric, literature II.	Composition, literature, history of literature III, or	Composition, literature, history of literature IV, or economics IV.
Social studies	Civics, or	Modern history	American history	Problems of democracy.
Natural science	Civic biology	General geography.	Household physics and chemistry.	Dietetics, care and feeding of children, first aid, and nursing.
Home economics	Foods and cooking (3) I, textiles and sewing (2).	Foods, cooking, and sewing (2), textiles and sewing (3) II.	Dressmaking and millinery III.	Household management, housewifery, budgets and accounts, laundry IV.
Physical training	I	II	III	IV.

Music may be taken each year as an elective fractional unit up to three periods per week. Two, three, or four units of Latin or a modern language, or one, two, three. or four full units of music, or one, two, or three units of mathematics may be elected instead of art, if with the formal approval of the principal.

This curriculum is intended for girls who can not go to college or do not wish to go, but who want as good an education for all-around development with special reference to social, civic, and home activities, as they can get in high school. The home economics curriculum will give them this; and, at the same time, it frees them from the incubus of foreign language and college preparatory mathematics requirements. It also lets them out of two of the four units of formal English that are usually required; and in place of the four years of foreign language, the two or three years of mathematics, and two of the four years formal study of English it gives them science, history, home economics, and art, with options in sociology and economics. All of these things are far more essential to the modern woman than foreign languages and formal mathematics. These last, however, or full units in music, may be elected instead of art by those who have definite and valid reasons for preferring them, and who secure the formal approval of the principal. This curriculum seems to violate the principle of constants in that the constant of

one unit of mathematics does not appear in it. However, there is in it opportunity for equivalent mathematical practice, since arithmetic is in constant use in connection with the study of foods, of household physics and chemistry, and of dietetics. Hence, the mathematical side of mental development is not neglected. To some again it may seem unwise to let girls off with only two years of formal English; but if good English be required in all recitations, notes, and reports in connection with the required subjects, and if a taste for good reading has been formed by the end of the second year, as it should be, there will be little real loss to her literary culture if the girl does not elect the last two years of formal English. A more thorough knowledge of art or music, or thorough courses in sociology and economics, should add more to her thinking ability and culture than two years practice in the vivisection of literary classics of a by-gone time.

The music curriculum.

Grade.	Ninth.	Tenth.	Eleventh.	Twelfth.
Music	I	II	III	IV
English	I	II		
Social studies	Civics or Civic biology	Modern history	American history	Problems of democracy.
Natural science		General geography.	Household physics and chemistry, or physics III.	Chemistry IV or physics III, or
Electives	French I	French II or I	French III, II, or I.	French IV, III, II, or I.
	Spanish I	Spanish II or I	Spanish III, II, or I.	Spanish IV, III, II, or I.
	Home economics I.	Home economics II or I.	Home economics III, II, or I.	Home economics IV, III, II, or I.
	Mathematics I	Mathematics III, II, or I.	Mathematics III, II, or I.	Mathematics III, II, or I.
	Shop work	Shop work II or I	Shop work III, II, or I.	Shop work IV, III, II, or I.
	Art I	Art II or I	Art III, II, or I	Art IV, III, II, or I.
		History of music II.	History of music II.	History of music II.
			Sociology III	Economics IV. Sociology III.
			English III	English III or IV.
Physical training	(1 unit.) I	(1 unit.) II	(1 unit.) III	(2 units.) IV

Choice of optional or elective studies must provide for a major sequence of three consecutive units in one other subject besides music. A fractional unit of art may be elected in addition to the four full units of each year, excepting when a full unit of art work is elected.

The music curriculum, like the home economics curriculum, does not require the student to study any foreign language, any formal or college preparatory mathematics or more than two years of formal English; yet she may obtain by election a major or a minor sequence in any of these if she desires, for good reasons, to do so. This curriculum is expected to appeal strongly to a considerable body of girls; but it also provides for boys whose principal gifts

and interests incline them toward a musical career. It allows a larger freedom of election than the preceding curriculums, but it safeguards the fundamental principles of curriculum making that we have previously laid down, and to which we have frequently referred. This curriculum will fit the student to enter any standard conservatory of music provided the student chooses among the optional studies and electives so as to meet the minimum entrance requirements of the particular school which she (or he) desires to enter. (For a further discussion of music in the high schools see Chapter VIII.)

The art curriculum, which follows, is similar in intent and purpose, as well as in make-up and arrangement, to the music curriculum. It provides for the interests and needs of both boys and girls whose primary talents and capacities be within the field of art. It provides by proper choice of optional and elective studies for entrance into standard schools of art. It also affords a well-balanced high-school education for all-around womanhood or for young men of special talent and limited means who wish to take up directly the work of a cartoonist, illustrator, advertising artist, engraver, printer, etc., and learn it through a process of apprenticeship. Many such boys leave our high schools with a handicap because they are obliged to spend their time in them taking subjects for which they have little aptitude and less interest, while they miss much valuable training at which they would work hard and by which they would profit greatly. This curriculum would be a boon to such boys and should appeal strongly to them.

The art curriculum.

Grade.	Ninth.	Tenth.	Eleventh.	Twelfth.
Art	I	II	III	IV
English	I	II		
Social studies	Civics, or Civic biology	Modern history	American history	Problems of democracy.
Natural science		General geography	Household physics and chemistry	Principles of art reproduction (engraving, etching, photographing, textiles, etc.
Elective	French I	French II or I	French III, II, or I	French IV, III, II, or I.
	Spanish I	Spanish II or I	Spanish III, II, or I.	Spanish IV, III, II, or I.
	Home economics I.	Home economics II or I.	Home economics II or I.	Home economics IV, III, II, or I.
	Shop work I	Shop work II or I	Shop work III, II, or I.	Shop work IV, III, II, or I.
	Mathematics I	Mathematics II or I.	English III	English III or IV.
			Mathematics III, II, or I.	
	Music I	Music II or I	Music III, II, or I	Music IV, III, II, or I.
		History of art	History of art	Economics IV.
			Sociology III (1 unit.)	Sociology III. (2 units.)
Physical training	(1 unit.) I	(1 unit.) II	III	IV

Choice of optional or elective studies must provide for a major sequence of three consecutive units in one other subject besides art. A fractional unit of music may be elected in addition to the four full units of each year, excepting when a full unit of art work is elected.

THE LATIN AND MODERN-LANGUAGE SEQUENCE.

The Latin and modern-language sequences are so firmly established and so standardized by the well-known associations of colleges and secondary schools that they need little comment here. The circulars and bulletins issued by these associations and by the various colleges explain them in greater or less detail. The sequences all are ordinarily of four units. There may be four—of Latin, or of French, or of Spanish, or of German; but many colleges accept minor or two-unit sequences of each of two languages in place of a major sequence of one. To many pupils this alternative may be an advantage; and the school should permit it for such pupils who are either not preparing for college entrance or are intending to enter colleges which accept it.

Of late years there has been a pronounced tendency to make the contents of these sequences more interesting and easier of mastery, especially in the second year. In Latin it has been advised that instead of the usual reading of the first four books of Caesar's Gallic War entire, some of the more difficult parts of these books be omitted or translated for the pupils with explanation by the teacher, and that selection from Caesar's Civil War and the Lives of Nepos be substituted, that some omissions be made from the six orations of Cicero usually required for the third year, and that his De Senectute and some of his letters or some selections from Sallust be substituted, and that, instead of confining the pupils of the fourth year to the first six boks of Virgil's Aeneid, they read some selections from the last six books of the Aeneid, the Bucolics, or the Georgics, or some selections from Ovid. This tendency to make the contents of the courses more varied and interesting shows prominently in some of the more recent first-year books, in which there are interesting stories and pictures of Roman life. The movement headed by Miss Sabine, toward vitalizing Latin by emphasizing its many derivatives in English and the Romance languages, and the many uses of Latin words in everyday life is doing much to arouse the interest of the pupils in studying it. Charts and posters like those devised by Miss Sabine are quite extensively used in the Memphis Central High School and are undoubtedly creating strong interest on the part of the pupils who are inclined to take them.

A similar tendency is observable in French, Spanish, and German, and shows itself in the choice of easier reading and more of it.

Choice selections of short stories and other modern literature are frequently substituted for the more difficult of the classics that were formerly prescribed.

German has been dropped from many high schools because of the recent revelations concerning the perfidy and insidiousness of the "Deutschtum" propaganda. The Spanish language is perhaps of more concern to us than German, since our relations with the Spanish-speaking peoples of Cuba, the Philippines, and the Central and South American States are likely to be much closer in the immediate future than our relations with the Germans. It may not be out of place to say here that the importance of Latin and modern foreign languages in general education has been much overemphasized, and that the practice, so widely followed, of making all students study one or more of these has driven out of school many pupils who should have continued there, and has taken from many others much time that they might more successfully and profitably have spent on history, sociology, economics, geography, biological and physical science, home economics, commercial studies, or drawing and shopwork.

These when properly taught are for the most part just as cultural as foreign languages, and to the large majority of pupils are much more useful. Most people who have been through high-school and college courses in foreign languages do not either read or speak them with practical or pleasurable facility and would have gained both a wider and a more thorough acquaintance with the literatures of these languages through good English translations. There must, of course, be classicists and modern-language experts among our professional scholars, and these should start their linguistic studies early. But do we need to make all or nearly all high-school and college students take these languages in order to find and identify the few who have sufficient aptitude and interest in them to become really proficient? National economy in education should provide less wasteful means. We should train in these languages the few who may become producers of valuable literature and philological studies concerning them, or who can become gifted translators and interpreters of their literatures, and we should let the other few who can profitably do so read these literatures in such translations. Thus the overwhelming majority of high-school pupils who will never care for these things or work profitably with them may be freed from them and allowed to get from wider and more intensive reading and study in English literature, art, history, and science those cultural values that are so strongly claimed for foreign-language study and for the most part so little realized. The study of foreign languages was no part of the training of those who produced the great

masterpieces of Greek literature. The cultural studies of the Athenian youth were their own national literature, music, gymnastics, art, and choral dancing.

THE MATHEMATICS SEQUENCE.

The mathematics sequence also has been standardized through college entrance requirements and the influence of certain widely used series of textbooks. Algebra through radicals and including the simplest methods of solving, quadratic equations (1 unit) is ordinarily prescribed for the ninth grade, and plane geometry (1 unit) for the tenth grade. These two units are followed in the eleventh grade by solid geometry (½ unit) and advanced algebra (½ unit), including simultaneous quadratics, progressions, binomial theorem, and in some of the requirements the simpler cases of permutations and combinations, of determinants, and of solutions of equations of higher degree. Many schools finish the unit and a half of algebra before beginning geometry; but this is unwise, both because the advanced algebra is abstract and difficult and so should be left until the pupils are more mature, and because geometry is (or may be made) more concrete and more closely connected with daily life activities, and should therefore be begun early. These same reasons make it desirable that the solid geometry should precede the higher algebra in the third year.

Recently the custom has been growing among the arts colleges to let the entering students off with two units of mathematics, one of algebra and one of plane geometry instead of demanding three. This loosening up of the former rigidity is highly commendatory, but unfortunately it is not applied in the wisest possible way. The pupils who take advantage of this liberality spend too much time on plane geometry and get no training at all in solid geometry, which is of vastly greater practical value on account of its more numerous applications. The student who learns no solid geometry also misses much, because this is one of the very few school activities that train the students to think and imagine in three dimensions of space. The other studies that do this are mechanical drawing, manual training, modeling, and free-hand drawing from model. The pupils who get no training in these arts are only too likely to be the same ones who omit solid geometry.

The obvious remedy for this one-sided requirement is to omit from plane geometry a large portion of the abstract, uninteresting and almost useless materials that have been accumulating in the textbooks during the last 25 years, and to retain only the most important and most concrete propositions. By such wise eliminations and selections the subject matter of geometry could be reduced in amount to what it was 30 or more years ago.

At the same time, the great improvements in methods of organization and proof, and in methods of teaching, including particularly the emphasis on original proofs and practical problems to be solved by the pupils, should be retained and carried still further forward.

Thus both the college preparatory pupils and those not preparing for college could get a good working knowledge of both plane and solid geometry in one year. That this can be done, the writer personally knows because it was done by the generation to which he belongs; and his extensive observations of high-school pupils has not convinced him that the average high-school pupil of to-day is conspicuously better able to handle the higher mathematics in college with his three units of preparatory mathematics than were we of their father's generation with our two units. Algebra, like geometry, has been tremendously overloaded, and the books are clogged with much traditional material which is of no practical use whatever to most of those who study it, and is not at all necessary even for those who are preparing for the study of the higher mathematics. If the content of the algebra courses were reduced by omitting those topics and methods that are highly theoretical and of interest only to mathematicians, or are little used in practical affairs, or are too abstract and difficult for high-school pupils to master, and are not at all essential in preparation for college mathematics, this subject could easily be covered satisfactorily in one year. The essentials of plane trigonometry and the simplest elements of surveying together with some of the simplest facts and relations of coordinate geometry could then be offered as a third elective unit, which would be of great value to a considerable number of pupils.

Within the past 10 years experts in the pedagogy of mathematics have been strenously advocating another reform. They make the claim that arithmetic, algebra, geometry, and trigonometry have been parceled off as it were into water-tight compartments, and their principles taught with too little relation to one another. They believe that all these are not separate subjects, but should be thought of and taught as different phases of the one great subject, mathematics. Hence the simplest fundamentals of algebra should be given in the seventh and eighth grades as literal arithmetic, and taught as modes of generalizing the arithmetical processes and problems with which the pupils have already become familiar. Very simple algebraic equations can also be introduced in order to show how certain problems that are very abstract and elusive when the attempt is made to solve them by purely arithmetical methods, become very simple and direct when negative numbers, literal notations, and the algebraic equation are employed.

In the ninth grade the introduction of each new topic in algebra should be based on the pupils' knowledge of the corresponding

arithmetical process; and it should begin inductively with a brief review of this process. Simple, concrete problems of geometrical construction of plotting on squared paper, of paper folding, and other types of inventional and practical geometry should be given, also, in connection with arithmetic in the seventh and eighth grades. In the ninth and tenth grades algebra and geometry can be carried on together, using geometrical constructions to illustrate and classify algebraic equations, and using algebraic methods in the solution of geometrical problems. Such an introductory unit of combined algebra and geometry should contain only the simpler and easier problems and propositions of both these branches. The approach to each new phase of the subjects should be inductive, starting with many simple problems and relations that are particular cases of the principle to be taught. The second unit should be a continuation in like fashion of the first, but should treat the more advanced phases of both subjects. The third unit when offered should combine in the same way the simpler principles and practical applications of trigonometry, surveying, and coordinate geometry, with abundant practice in the use of logarithms and the slide rule. In order to distinguish them from the traditional "water-tight" units in the more common use the three units here described are called respectively first year mathematics, second year mathematics, and third year mathematics. It would be better to change this, and to think of a five-year sequence including grades seven and eight. These should be named seventh grade mathematics, eighth grade mathematics, ninth grade mathematics, and so on.

Throughout these five years the graph should be freely used, and in all, practice should be given on many shorter and easier problems instead of on relatively few long, complicated and difficult problems. This reform movement is new and strange to most school systems and has rarely been given a sincere and competent trial; but its feasibility has been abundantly demonstrated in a few schools, and it has been in successful operation for years in European schools.

It has been tried in some classes of the Memphis Central High School but members of the survey commission have been told that its abandonment is in contemplation because the teachers who attempted it, did not like the available textbooks, and claimed that with these they could not make the work successful. We do not think this a valid excuse. High-school teachers should be competent to adapt the materials of existing textbooks to their purposes, omitting here, and supplementing there, or they should even be competent to make their own textbooks if those available do not approximate to their ideas of what should be chosen for presentation and how it should be presented.

We recommend that this experiment be continued. The objecting teachers should be directed to give this matter more sincere and earnest study either by themselves or at the University of Chicago or the University of Missouri, where leaders of this movement are teaching, or else another teacher, who has had the training and can make it a success, should be employed and given charge of the classes to which this type of sequence is assigned.

THE ENGLISH SEQUENCE.

The English sequence consists of three or four unit courses, arranged to suit the stage of maturity and gradually widening interests and capacities of the pupils and each consisting of three types of work. These types or phases of English study are as follows: (*a*) Theoretical or form study, including spelling, punctuation, study of words, syntax, and the principles of versification and the simplest and most fundamental principles of rhetoric and literary criticism. More briefly, these studies are included under the terms spelling, punctuation, grammar, and rhetoric. (*b*) Composition, written and oral. (*c*) The reading and study of literature. These three kinds of study should go on together, because they represent the three fundamental human activities in connection with language and literature—namely, understanding, production, and appreciation. These are inseparable in life; so they should not be separated in instruction. In the first year (ninth grade) the emphasis in form study is usually rightly placed on correct elementary mechanics in composition. The sensible aim is to train the pupils to write paragraphs or make short speeches (oral composition) about things or activities, or selections from literature in which they are most vitally interested, and to produce these in clear, concise, grammatically correct, and properly spelt, capitalized, and punctuated form when written, or in properly vocalized and modulated form, with correct bodily attitudes, when delivered orally. This requires attentive study of the rules and principles of spelling, capitalization, punctuation, and syntax, and of oral expression, and some study of the meanings, derivations, and choice of words. All these should be carried on in close connection with the production of the paragraphs and their reduction by revision to correct form. Too much care can not be taken by the teacher in insisting that the pupils correct all the errors that they make and that they be able to tell the reasons for the corrections. Some teachers of English claim that you can not get young pupils to express themselves freely and use imagination if you insist that they correct their mistakes, but the writer takes direct issue with this claim as the result

of an extended experience in teaching and observing the ninth-grade English classes. It all depends on the way the teacher does it.

The reading in the ninth grade consists usually of two or more standard novels or stories by the best modern writers, to be read outside of class hours and reported on, and certain selected poems, dramas, short stories, essays, or orations to be read in the classroom, in whole or in part, and discussed there. In preparation for this work some definite outside study is or should be required. The kind and amount of oral reading should be such that it will be both profitable and pleasurable for those who listen, and the silent reading at home and in the classroom should be such that after it the pupils can discuss informally among themselves the passages so read with understanding and appreciation. Success in this again will depend largely on the kind of questions or suggestions used by the teacher in stimulating and guiding the discussion.

Not only should the teacher aim at understanding and appreciation, but he should also present the meritorious features of the selection in such a way that the pupil may find in it models that he can understand and imitate in his own writing. In this literature also the pupils should find opportunities for the development of tastes and appreciations, and the growth of those ideals that are so important in the building of character. The composition work should include business and social letters, articles for the school paper, bits of description, narration, exposition, and argument, all of course on familiar and concrete subjects, and in the simple language of youthful sincerity.

The second unit (tenth grade) continues that of the first, but substitutes the study of rhetorical principles for the mechanics of English and places more emphasis on the study of literature. It would be better if in this year more of the English teachers were to give greater attention to pointing out the applications of rhetorical principles to the composition work that the pupils produce and to the literature selections that are studied. Greater economy of learning and better results would thus be obtained than most teachers now obtain. In most cases the rhetoric is studied as a formal book subject nearly or entirely divorced from the composition and literature study.

In the third and fourth units the literature selections are or should be of a type appealing to a greater degree of maturity and they should be chosen with a view to using them as types to illustrate systematically the different forms of literature such as the drama, the essay, lyric poetry, epic poetry, the short story, the novel, and so on, together with clear and simple information as to what are the distinguishing characteristics of each. Some systematic attention should also be given to the significant facts in the lives of the

authors, and the formative influences that contributed to their ideals and their productiveness. So also there should be some consecutive and organized lessons on the most important periods of English and American literature; but a formal textbook study of the history of literature with attempted memoriter recitations of what the book says about many authors should not be allowed to crowd out the pupil's opportunities to become acquainted at first hand with a choice few of the best literary productions. In these last two years the formal study of rhetoric should be discontinued, but in the composition work, which should be growing more ambitious, good rhetoric should be insisted on and a habit of careful revision and correction of errors should be enforced. Oral expression in the form of dramatics, debates, recitations, after-dinner speeches, and "conversations" should form a prominent part of the work of the eleventh and twelfth grades and should be connected as closely as practicable with the literature that is being studied and the individual and group activities of the pupils outside the classroom. Such a sequence of three or four years of English studies should bring diligent and intelligent pupils to the point where they can write or speak in clear and correct English about the things in which they are interested, and where they have acquired not only a taste for good reading but also the habit of using spare bits of time in reading books of real and permanent worth.

It will be noted that in several of the curriculums that we have suggested for the Memphis Central High School, English does not appear in the eleventh grade, and in others it is not found in either the eleventh or twelfth grade. In others it is offered in these grades as an elective. This is done on the assumption that in the cases of pupils for whom these curriculums are prepared (1) other things are or may be more necessary and (2) that if the first two years' work were well done the pupils would by that time have learned to write fairly well and would have formed the reading habit; so they should be expected, with properly organized school guidance, to continue a course of reading for pleasure and profit during their leisure moments, at week-ends, and during vacations. Finally (3), it can not be stated too emphatically that good English should be insisted on from the pupil in all his oral recitation work, and in all reports on supplementary reading and other written work required in the course of daily instruction in every subject. Training in the use of good English either oral or written is a matter of habit formation rather than a matter of formal instruction in grammar and rhetoric. To fix these habits of speech it is necessary to have the pupil speak or write the right words in their correct relations and repeat them in these relations with fixed attention on them and without permitting any lapses into wrong ways until

the words come in their correct forms and orders automatically. If you want a child to say "have gone" instead of "have went," you must stop him every time he says "have went" and make him say "have gone." Then you must warn him and urge him to think about saying it the right way every time and not permit himself any lapses. Every teacher owes it to his pupils to make them correct their English whenever they make errors in speaking or writing; and if public-school teachers in all grades did this as well as the teachers in our best private schools invariably do, our national speech in a very few years would no longer give us cause for shame. Every teacher, whatever his subject, is a teacher of English—either bad English or good English, according as he habitually uses good English himself and insists that his pupils use it, or as he does the reverse. This is a responsibility that no teacher can escape.

If all the teachers meet this responsibility as they should, two years of formal English study in the high school, in addition to eight years in the elementary schools, though not all that might be desired, would be sufficient; and if the teachers do not meet this responsibility no amount of formal English study will make correct writers and speakers of the majority of the children.

THE SEQUENCE OF SOCIAL STUDIES.

The sequence of social studies includes community civics in the ninth grade, ancient and medieval history in the tenth, modern history in the eleventh, and American history and civics in the twelfth. Elementary sociology is also proposed as an elective in several of the curriculums for the eleventh grade, and elementary economics for the twelfth. As will be seen from the discussion in Chapter VI, on training in citizenship, this line of studies, with the exception of ancient and medieval history, is of fundamental importance in the education of every citizen of our country, and especially in the education of those who are to be leaders. Yet until recently history and the other social studies were regarded as of minor importance and were either very generally neglected or usually were taught by such dull and lifeless methods that they availed little as a force in education. Now, since the disturbing revelations of the Great War, we are wide-awake not only to the importance of the social studies, but to their vital necessity in the program of socialization and Americanization that we know we must carry out if we are to save our American democracy for the part it must take in the future of the world.

"Community civics" is a new term in education, and perhaps needs explanation. It is a study of community association and life, especially of the local—the child's own community—but not of this

exclusively. The child knows his local community best, perhaps, and can best be awakened to his social and civic relations through first-hand contact with its cooperative activities; but he is also a member of the State and the National community which include the local.

The aim of the study is, frankly, training for and in citizenship. It is designed to lead the pupil to realize the significance of the elements of community enterprise and welfare in their relations to himself as an individual and to the communities, local, State, and National, of which he is a member or cooperating unit. It aims to inform him of the social agencies, governmental and voluntary, that exist to obtain and secure these elements of welfare. Finally, it attempts to make him recognize his own civic obligations—what he must do for the community in return for what the community does for him—so that he will discharge these obligations in an unselfish and patriotic manner. It is thus seen that community civics is a concrete study of the cooperative activities of the local community, the State, and the Nation rather than an abstract study of the machinery of government. The controlling idea is to have the students learn cooperation for the common good by cooperating for the common good, and actively participating in the community enterprises that are going on around them.

The topics of study include individual, home, and community health and sanitation; protection of life and property; public recreation; parks and playgrounds; public education; city planning and beautification; wealth; communication; transportation; immigration and emigration; charities and correction; and, finally, a systematic study of vocations. The method of approach is to set the pupils to finding information for themselves, with the help of teachers, parents, friends, city officials, etc., starting with things that obviously affect them personally. For example, the topic of public health starts with the pupil's own health and how public health means simply that every individual be kept healthy and clean. His own obligation here becomes perfectly clear. He must keep himself clean and in perfect physical condition for his own sake, but not less for the sake of all. He must do all he can to induce others to do the same. Health laws exist for the sole purpose of accomplishing just this; so he must obey them and work actively to help in their enforcement. So he works personally not only to keep his own body clean and healthy and his own home and grounds safe and sanitary, but helps actively in inducing others to do the same.

He learns about pure water supply for the city, about ash and garbage collection and disposal, about street cleaning, about vaccination and quarantines, about fighting the white plague and preventing its spread, and about how the agencies for doing these things are

organized and financed. Thus the method of community civics includes four phases, which, though perhaps more thoroughly realized by those who are interested in promoting civic education than by those who are teaching other subjects, are really essential to good teaching in every subject, namely: (1) Personal and inductive approach to each new topic; (2 observation and collection of data and information by the pupils themselves; (3) realization and acceptance of personal responsibility as a result of the inferences and conclusions that follow inevitably from this intimate first-hand information; (4) habituation in the discharge of civic obligations through continued and systematic practice in recognizing duties and discharging them, especially in cooperation with others, for the common good.

It will be noted that in every curriculum presented either community civics or civic biology is required in the ninth grade because of the fundamental importance of this kind of civic training. Civic biology teaches the same things in a similar way but with the scientific principles more in view than the political and economic. Both serve the same purpose in civic education and training, but the latter appeals more strongly to those who have pronounced scientific interests, while the former appeals more strongly to those whose interests are most prominently social and political. Instead of offering one or the other it might be better to run them parallel—one three times per week and the other two during the first semester, and the other three times per week, and the one two during the second semester, thus making one unit of the two subjects combined. Whether this would be better can best be decided by trial and comparison. In any case the teachers of the two subjects should confer often and cooperate closely.

Ancient and medieval history, from the standpoint of civic education, is of use chiefly in throwing light on modern history by showing up the contributions of ancient peoples and their civilizations to our modern social organization, culture, and political life, and it should be taught with this end prominently in view. The rise of the races from primitive savage life through the nomadic and pastoral stages to the city state, with its trades, industries, and commerce, its centralized government, its architectural and engineering projects, and its dependence on the surrounding agricultural districts, should be clearly brought out. A very brief treatment of the Egyptians, Babylonians, Assyrians, and Phoenicians will suffice for this. Then the special contributions of the Greeks, the Jews, the early Christians, and the Romans to our modern ideals and civilization should be brought out in studies of these ancient nations and of medieval Europe.

Until quite recently it has been customary among history specialists to advocate four units of history for the high school: (1) Ancient history, (2) medieval history, (3) modern history (with emphasis on English history), and (4) American history (sometimes, but not too often, with civics). Previous to this period the units were general history one year, and American history and civil government one year. Neither of these plans was satisfactory, for history was studied for information as a record of past events or for a fictitious "mental discipline" rather than as a means of understanding our present social organizations and movements in the light of those of the past that are related to them.

The recent movement to make history a basis for intelligent interpretation of the events, developments, and institutions of the nations of to-day rather than a record of past military and political events has resulted in discarding much that the old textbooks contained and introducing much fresh material of recent discovery about the struggles and the social, intellectual, scientific, industrial, and artistic achievements of the world's peoples. Also less attention is given to consecutive chronology, and more to telling continuous stories of these elements of racial and national life as they are related to present national conditions, achievements, and aspirations.

The division between ancient and modern history now tends to be made at about 1700 A. D. rather than at the time of the Renaissance and Reformation, as it often was formerly.

Examination of the various curriculums that we have presented will readily reveal that to give all the training that is desirable in social studies is impracticable, because this would necessitate the omission of other elements, some of which are too important to be left out. Hence we have here indicated as a minimum or constant two units—i. e., modern history (eleventh grade) and American history and civics (twelfth grade). To this is added community civics (ninth grade) unless civic biology is chosen instead. It is not so necessary for every student to spend a year on ancient and medieval history as it is to spend that amount of time on modern history—so the former is made optional or elective while the latter is required for all students excepting in one curriculum.

The unit in modern history should be begun with a brief study, of about four weeks' duration, of the most significant factors in ancient and medieval history that have influenced modern history. Only a sketchy review of the salient features of ancient oriental, of Semitic, of Greek, and of Roman progress, and their permanent influences should be attempted; but clean-cut references should be made to these influences in the later study at the points where their effects are most easily perceived.

Certainly, after the revelations of the past four years, no one will question the justification for requiring every student in high school to spend at least a fourth of his time for one year on the history for the past two centuries of those world nations with whom we have become so intimately involved. Neither is it believed that any intelligent person would question the wisdom of requiring of all pupils a unit of American history and civics in the last school year, as in fact is now done in the Memphis Central High School. The elective units of elementary sociology and elementary economics in the eleventh and twelfth grades need no justification, as they have established both their feasibility and their worth in many good schools. Surely no one will deny that it is better for the future leaders of our communities, who may not go to college, to get their ideas of sociology and economics from high-school books and teachers. Better that they get them from this source than from the soap-box orators on the street corners, or from the daily newspapers.

THE NATURAL-SCIENCE SEQUENCE.

The natural-science sequence, here recommended, consists of civic biology (ninth grade), general geography (tenth grade), physics (eleventh grade), and chemistry (twelfth grade). This represents a departure, but not a radical one, from the sequences that are most common in the high schools of the country. Physics and chemistry for the two upper grades are the courses given in nearly all of our high schools, including the Memphis Central High School, so nothing need be said in justification of the position given to these. The sequence for the first two high-school years has varied widely over the country during recent years and there is at present no common agreement. For many years until lately physical geography, or "physiography," was taught almost universally in the ninth or tenth grade, with the emphasis on the origin, life history, and distribution of land forms (plains, plateaus, mountains), on physiographic processes (elevation and subsidence of land areas, volcanic action, erosion, etc.), and on the atmosphere and the oceans. It did not give satisfactory results, and it has been gradually replaced by either "general science," as in the Memphis Central High School, or by civic biology. We believe that "general science" belongs in the seventh and eighth grades, and that it should be taught by teachers who are properly trained and competent to handle it. Civic biology is the science study most needed in the ninth grade, and is admirably adapted to the interests, capacities, and needs of pupils of that age. It also forms an admirable introduction to the more difficult and usually more highly organized science courses of the three upper years. More important still, if well taught, it imparts the information and arouses the interest that every good citi-

zen should have concerning the vital biological problems that daily press on every community for solution, and if given in the first year of the high schools, more of the pupils will come under its influence than if given in any higher year.

Civic biology, like community civics, is a recent name in school terminology. Its content is not yet standardized and probably never will be; for this content is somewhat different in the city from what it is in the country, and it also varies considerably according to the kind of region in which the pupils live. It is somewhat different in the Southern States from what it is in the Northern; and is still more different in Utah and Nevada from what it is in New York City or in New England. It gives the kind of knowledge that every citizen should have in order to understand his own body and guard it against injury and disease, and to keep mind and body clean, wholesome, and efficient. It also gives the kind of knowledge and training that makes one acquainted with the plant and animal forms that are most necessary and useful to the people of the community, and what must be done to conserve them, improve them, and make the most economical use of them. But there are animal and plant forms that are tremendously destructive to human life and health and that destroy each year untold millions of dollars worth of food products and other vegetable and animal life. Civic biology gives knowledge of the life histories and habits of these destructive plants and animals and of the methods of community cooperation that must be adopted to exterminate them.

* * * Enough is already known to make living well-nigh ideal and the world almost a paradise, if only *enough* people knew. In how many of our civic units does every citizen know enough to conserve effectively the valuable bird life, the trees, the soil, the water on his own premises, to exterminate the rats, and English sparrows, the flies, mosquitoes and San Jose scale, the hookworms, diphtheria and tuberculosis germs? If every individual knows these things, in how many communities do all the people know enough to cooperate—to work together with efforts so turned and planned that the good work of one, or of all but one shall not be rendered vain by the failure of someone else to do his part? * * * The measure of our present need is seen in the wastage and loss that is streaming through our ineffectual defenses—that 500,000 valuable lives sacrificed annually to the currents of preventable disease, along with the several billions of dollars worth of foods and other property swept away by rats, insects, weeds, and fungi. How *much higher must the cost of living soar before we begin to wake from the dream that we are a scientific and efficient people?* * * * Cooperative good will is the essential idea in civic biology, as it is in the progress of civilization itself. This means that *civic biology consists of all those problems whose solution requires cooperative effort.* In the nature of the case we can not control many of the living forces of nature by any amount of uncoordinated individual effort, any more than we can turn back the ocean tides by haphazard sweeping with brooms. The problem of civic biology, therefore, is to make it possible for every one to know what these forces are, for good or

for ill, and to understand how to do his part for his own good and that of the community. Cooperative building of the defenses offers our only hope of success; *and our education needs to be so organized that every citizen shall know enough to stop a breach the instant he sees it.* [From the preface to Hodge and Dawson's *Civic Biology*. The italics are ours.]

The above quotation makes the nature and tremendous importance of civic biology as clear as daylight and justifies the place we have given it. Is there any question in the minds of those concerned in the findings of this survey that this vital study should replace the present relatively ineffective course in "general science," and that every boy and girl who enters the high schools, white or colored, should study either this or community civics?

For the second unit in the natural science sequence we have proposed the adoption of general geography. This in the Central High School would replace the present second year course in botany and zoology which is not functioning effectively there.

Botany and zoology, or either of them alone, is found as a unit course in this grade in many schools, and nothing is to be said against such a course if effectively taught. However, if the course in civic biology be adopted for the first year and taught by an expert, as we recommend, the pupils will get from it a much more vital knowledge of those portions of botany and zoology that are most necessary and useful to the community, and will not be obliged to leave school without that fund of practical geographical knowledge and training of which no intelligent citizen should be destitute. There can scarcely be a doubt, especially in a great trade center, which Memphis is destined to be, that such a course in politico-economic geography, as is here recommended, should be a part of the educational equipment of every high school pupil. An understanding of such geography, based on an intelligent comprehension of the elements of physical geography, is necessary to a clear grasp of the movements of history; and the history teachers should have and make use of such knowledge in explaining these historical phenomena; but such incidental knowledge of geography as may thus be gained is not enough. For any thinking person who has tried to follow in the newspapers and magazines the world important events of the last four years, is it possible to doubt that the geographical knowledge that we Americans provide in our high schools is woefully inadequate? We, therefore, recommend that such a course in general geography as is briefly described below be offered in the second year of all curriculums, as indicated.

Such a course should start with the physical geography of the Memphis district. Problems of information for the pupils to work out should be set up by the teacher in connection with the city water supply, drainage, sewage disposal, roads, railroads and waterways,

the rocks, soils, and economic products of the Memphis district; its climatic conditions of temperature, prevailing winds and rainfall; its farm, forest, and mineral products, and the means by which these products are gathered, transported, and marketed. These problems should lead up to the more general problems of physical geography, such as the evolution of the more important types of plains, plateaus, mountains, river basins, and shore lines through the operation of the three great physiographic agencies, namely, elevation and depression of the earth's crust, volcanism, and the wearing down or building up of the surface because of weathering processes and the movements of water and ice.

A study of climatic conditions in the Mississippi Valley should lead outward in like manner to a study of the prevailing winds and distribution of temperature and moisture in the different zones and in the different physiographic provinces or regions of the world. Also there should be a brief study of the oceans and shore lines, especially in their relations to climate, to food supplies, and to the occupations of peoples and their trade and political relations with one another. During all this work whenever a locality is studied as a physiographic type, it should be located by the pupils on a wall map with reference both to the physiographic region or province and to the political division in which it belongs. Throughout this study of physical geography and the studies in commercial or politico-economic geography for which it is to lay the groundwork, locational geography should be an ever-present feature. The student should be drilled with physical and political wall maps, blackboard outline maps, and seat maps in locating cities, farm and forest areas, rivers, harbors, trade routes, typical physiographic features and significant physical and political boundaries, until they know where the important and significant features and places of the earth are and how to reach them by passenger and freight routes. They should also be drilled on the comparative areas, populations, distances, and economic wealth of the most important regions, countries, and cities, until they really know something more about them than their mere names.

Following these studies of local, causal, and regional physical geography, and based upon the knowledge gained in them, there should be a study of politico-economic geography. This should not be the dull and spiritless droning over bald facts and statistics (most of them long out of date) that is characteristic of most of the textbook courses in "commercial geography" that are given in high schools. It should start with the principal industrial products of Memphis and the Southern States, namely, cotton, lumber, corn, and live stock, and should show where, how, and under what conditions they are produced, transported, bought, and sold. It should

show the value of these, both economic and social, and how they are transformed from raw materials to finished products. It should show what are the by-products of the manufactures of these raw materials, their relative values, and the methods by which they are extracted, and to some extent the physics, chemistry, and mechanics that underlie all these processes of manufacture and conservation of values.

Furthermore, having learned from the study of these home products the principles and methods of study that underlie economic geography, the pupils should be led to apply them to wheat, coal, iron, building stone, road materials, and the other great commodities produced, distributed, and consumed by the people of the United States.

Then there should follow a study, as extensive as the time permits, of the economic geography that underlies our manufactures and foreign trade, including a study of the great world-trade routes and the conditions that lead to international commerce and political relations. As a final review, one of the best elementary textbooks in political geography should be gone over rapidly with reference to the political boundaries and the economic and commercial conditions and interrelations in England and her dominions, France, Russia, Germany, the Balkan States, China, Japan, and the Central and South American States.

Throughout these studies of politico-economic geography constant reference should be made to such geographical sources as the United States topographic maps and other publications of the Geological and Coast Surveys, the census reports, consular reports, the Statesman's Yearbook, the World, Times, or Tribune Almanac, atlas, gazetteer, and the publicity materials issued by railroad companies and various chambers of commerce. This will insure that the information obtained is up to date, and it will also train the students to get needed geographical information for themselves, which is far more important.

General geography, then, is not home geography, or locational, or physical, or causal, or regional, or political, or economic geography; but it embraces the most essential and vital features of all of these—hence the name. It grows very naturally out of either community civics or civic biology, which we recommend should precede it in the ninth grade. It prepares the way for an appreciation of modern European history and American history, which we recommend should follow it in the last two years. It also prepares the way for sociology and economics, proposed as electives in the last two years. It has been here classified as a natural science; but it is just as truly a social science.

In the home economics, music and art curriculums, household physics and chemistry appears in the eleventh grade science block. This name is hardly appropriate to what is intended, but has been selected as likely to give the uninitiated a better idea of the nature of the proposed course than would "lessons in physical science," or "projects in physical science," which would be technically more accurate. The intent is to present a selection from the facts, phenomena, and laws of both physics and chemistry that are most likely to be appreciated and needed by the types of pupils who enroll in these curriculums. On the physical side the pupils would undertake problems and projects involving the simplest and most elementary mechanical principles and devices in common use or easily observable, such as the following: The principles of center of gravity, levers, composition and resolution of forces, sewing machines, clocks, watches, pumps, and household plumbing.

The course would include the physical principles underlying household heating, cooking, ventilation, the electric light, bells and annunciators, phonograph, telephone, telegraph, musical instruments, the physical basis of melody and harmony, eye glasses, opera glasses, color phenomena, and shadows. The chemical problems and projects that would follow these or go along with them would involve such topics as the following: The common metals, and their oxidation, water and air, their composition and uses, flame and combustion, economy and heat values of fuels, oxygen, hydrogen, salt, chlorine, sulphur, bleaching and disinfecting agents, carbon, carbonic acid and the carbonnates, nitrogen and phosphorus and their relations to soils and plants, matches, the commonest acids and bases and their property of forming neutral salts, photography, the hydrocarbon series and their most common derivatives, starch, sugar, fats and proteins, and their value in foodstuffs, alcohol, vinegar, soaps and laundering, mortar and cement, inks, dyes, paints, tanning, testing textiles, removing spots and stains, useful and harmful drugs. There would be no attempt to expound the advanced theories and physical chemistry. A scheme of review and organization of principles should be carried on throughout, and especially at the end of the courses. By this means the large amount of physical and chemical knowledge, obtained through the problems and projects and organized about these as centers, may be reorganized for permanent retention and future use, according to the customary classifications of physical and chemical treatises.

Such a course of projects should be planned primarily to meet the interests and needs of the pupils pursuing it, but should by no means be allowed to degenerate into an aimless smattering of superficial information. It should be taught by a teacher who is a trained

physicist and chemist and who knows how to get good, sincere, stiff work of the pupils and to ground it on solid physical and chemical principles, inductively approached and thoroughly apprehended. It should involve at least one double period or two single periods of individual laboratory work per week.

This course should be of very great value to the pupils who choose the curriculums in which it appears.

The fourth science unit in the art curriculum is largely self-explanatory. It is intended to give the pupils some definite information and experimental experience with the processes by means of which art objects are reproduced. It would therefore treat of lithographing and hand engraving, the technic of printing, etching, photography, photoengraving, color photography, and the three-color printing process. Experiments illustrating the principles underlying these processes would be made by the pupils, and they would be given practice in some of these forms of reproduction, not that they might become skilled workers in these arts, but that they might understand and appreciate them either from a cultural or a prevocational standpoint.

Agriculture and botany and forestry are inserted in the twelfth grade science block of the commercial curriculum as alternatives to chemistry. The findings of the industrial investigator of this survey show clearly that very large commercial interests in Memphis are distinctly concerned with industries whose development and expansion are dependent on these sciences, and hence many of the youth who are training themselves for a commercial career should be well grounded in these sciences. It seems wise to allow a choice among the three, so that special interests and aims may be provided for. For a boy who expects to become a salesman of machinery, automobiles, tractors, or the like it would be wise to choose machine drawing and machine-shop practice instead of the twelfth-grade unit of science, providing he has taken extra part units in manual arts in sufficient amounts to prepare him for it.

The proposed sequences in commercial subjects, in manual arts, and in home economics do not seem to require comment, as these are mostly such as are in successful operation in many of our best schools.

The four-year major sequence in music will be discussed in Chapter VIII.

The four-year major sequence in art should consist of free-hand drawing, with the principles of form, proportion, and perspective of color and of design.

There should be some opportunity during the first two years for work in clay modeling, in order to bring out clearly the relation of light and shade to form.

THE SEQUENCE OF APPLIED ARTS.

During the last two years many of the pupils will begin to find out their special aptitudes and they should be given rein to work along lines in which their chief interests lie and in which they may hope to produce work of commercial value. So it would be entirely within the proper scope of the high school to offer for those who want them courses in pottery, art jewelry, wood carving, interior decoration, window dressing, printing, or bookbinding on a thoroughly practical or vocational basis. Such courses in applied art would enable pupils who had made meritorious designs to execute them in the materials and forms for which they were conceived.

The first aim should be straightforward practice in drawing and clear instruction in the principles of perspective; and the pupils should be kept at this with pencil until they can turn off an acceptable drawing of such an object as a chair or table in any position in 15 to 20 minutes' time. Much intensive practice should be required—not in long-continued work on one piece or at large scale, but in making many rapid sketches at small scale with a time limit assigned. The pupils' interest here, and the teachers' also, should be not in turning out a product for exhibition, but in acquiring ready skill by practice. With the right kind of teaching and with ordinary ability and reasonable diligence any ninth-grade pupil should reach the ability indicated by the end of the first semester with one hour's practice per day. In order to stimulate interest and develop initiative each pupil should be required to produce at home—or if in school, without help or suggestion from the teacher—a 20-minute sketch of some subject of his or her own choosing. This kind of assignment should be made as often as twice or three times a week. The first half year's work should close with lessons in the principles of grouping objects.

In the second half year practice should be given in drawing in "values" with the brush, and the students should now begin work in elementary design. The drawing lesson should occupy about three periods per week and the design lessons two periods per week. In every drawing problem from this time on throughout the sequence of courses emphasis should be placed on composition. In design the pupils should work with both pencil and brush until they have a clear mastery of the principles of repetition—sequence, rythm, and balance, both symmetrical and unsymmetrical, and of spot, line, and area composition in limited areas and in field. As in drawing, there should be much practice; and it should be guided by self-criticism, by class criticism, and when this is not sufficient, by criticism from the teacher.

After a good idea of values has been gained, work with water color should begin. The pupils should first practice making color scales in hues, values, and intensities. In teaching the theory of color, both the Newton color-disk mixtures and the pigment mixtures should be clearly demonstrated and the differences in results explained.

In the second year the free-hand drawing, color, and design work should be continued with progressively more difficult subjects and less simple motives. By this time, if not before, the pupils will begin to show specialized interests and will desire to work on special projects, either individual or cooperative. They should find the motives for these mostly in the activities of the school. For the beginner, at least, an attempt at design is futile unless it has a direct and obvious use and is in harmonious relation with the surroundings in which it is to be used. It should be a part of a decorative scheme in which the unity and harmony of the whole is preserved. A design for a table cover, for example, must be adapted to the size, shape, color, and texture of the material on which it is to be executed and the table cover must be suited to the size, shape, color, and general design of the table on which it is to be placed. Both in turn must be in harmony with the nature and purpose of the room and all its other features and decorations. Since all these things require supervision and expert criticism, it is better then that projects in design—at least until very good judgment has been developed—shall center in the school and enter, as far as possible, into the cooperative life there. So such things as folders, covers, notebooks, booklets, school calenders, posters, programs, invitations, announcements, the school magazine, the furnishings of rest rooms, trophy room, committee room, domestic-science dining room, auditorium stage, and so on may furnish motives in plenty for all sorts of designs, both individual projects and also cooperative projects, like the furnishing of a room, in which each individual designs one article and the whole group work together on the general motive and harmony of the scheme.

During the second half of the second year the pupils should begin a series of systematic lessons in mechanical perspective and simple projection drawing, to be carried along with the free-hand drawing, color, and design work.

Thus, pupils who have designed articles of furniture, for example, may make perspective and working projection drawings for them, to be executed either by themselves or by other pupils in the school cabinet shop. For the last two years the drawing, water-color, and design work will be continued, the projects becoming more individualistic and varied and also more mature as the pupils develop. The pupils will be encouraged to strive for the production of mate-

rial that will stand the test of professional criticism or come up to commercial standards of value. Costume design, of course, will furnish motives for the girls in the dressmaking and millinery courses.

Besides the full unit four-year sequence in art, the various curriculums contemplate a four-year part-unit sequence of one, two, or three lessons a week, which may be elected in addition to their regular four units. Obviously, the progress of such pupils will be along similar lines, but they will do less work. They should be handled in sections apart from those who major in art and allowed to progress as fast as they profitably can.

In connection with these part-time offerings, there should be a course in art appreciation, in which pictures and lantern slides are generously used to illustrate the best types of artistic production, including architecture, landscape gardening, and city planning and beautification. An inspiring outline of suggestions for such a course is given in Bulletin No. 5, 1916, of the department of public instruction of the State of Ohio, Columbus, Ohio. Kelly and Mowll's Textbook of Design (Houghton Mifflin Co.) gives some excellent suggestions in that field.

An outline of the aims and methods of instruction, and of the types of work done in the art department of the Central High School was supplied by the teacher of art. The teacher was unavoidably absent while the high school was being surveyed. The observer visited the room, examined the work of the pupils, and talked with them at some length. In this manner, and by study of the teacher's outline, the conclusion was reached that the work is well planned, and is similar in its general features with the sequence of courses suggested above. The results of the pupils' work indicated very competent and enterprising instruction; and the very evident interest with which the pupils were attending to their work during the absence of the teacher indicated their appreciation of the instruction and ability to profit by the training that they had been receiving.

If one might venture a criticism on the teacher's outline it would be that too many mediums are used in the early part of the course, and the types of subjects seem to be introduced in too great variety near the beginning. All of it is good; but may not a tendency toward confusion and superficiality be thus brought about?

The art department is evidently functioning so well in the case of the relatively few pupils who are enrolled in it that it seems unfortunate that it does not reach a larger number of pupils than it does. We believe that definite steps should be taken to give this splendid department more publicity in the school and to attract more pupils into it. We believe that the adoption of the proposed

art curriculum would have a marked influence in this direction. Such an expansion of this department as seems desirable would necessitate the employment of an additional teacher and an increase both of the room space and the equipment.

III. HIGH-SCHOOL TEACHERS.

THE DIFFICULTY OF MEASURING WORTH.

The task of justly and fairly evaluating the service and influence of teachers is one of very great difficulty. We can measure potatoes or cattle in terms of pounds weight. We may express their food values in terms of percentages of essential food constituents, such as proteins, fats, carbohydrates, mineral salts, and water. We may estimate in calories the amount of energy they will supply when used as food in the human body, and we can estimate with accuracy their value in the market in terms of dollars and cents. We have no such definite and universally recognized units in which we can express the value of teachers' service. Our teachers, through the influence of their characters and the results of their methods are daily bringing about changes in the brain cells of our children which form the habits and fix the ideals that control their conduct now, and will largely determine their characters, their influence, and their success throughout their lives. Yet who can measure the influence of a teacher? There are elements in the make-up of a teacher that elude analysis, and that so far as our present knowledge goes can not be evaluated. Yet everybody knows that some teachers are better than some others, and that most of them might be much improved if the essential principles of efficient class management and effective instruction were better understood by them, and were applied with more careful thought.

Numerous attempts therefore have been made to analyze the essential qualities of merit in teachers in order that intelligent judgment might be used in determining the questions relative to their retention, promotions, and salaries; and one or another of these analytical tables or score cards has been used by various supervising officials in judging the status of members of their teaching staffs.

The oldest device is the teachers' certificate or license to teach. This certifies that the holder is of good moral character, and states the percentage marks obtained by him in written examinations set by the board of school examiners, in various subjects, knowledge of which is assumed to be essential. The average of these percentages is assumed to be a measure of his scholarship. The State school laws and the rules of the local board of school control specify how and by whom the examinations shall be conducted, and what

shall be the subjects and the minimum standings in them that shall entitle applicants to certificates of various grades. But scholarship alone does not determine the difference between a good teacher and a poor teacher, although it is one of the most essential factors. Also the fact is notorious that teachers' examinations do not result in accurate measures of teachers' scholarship. In most States the teacher's license is about the last thing in which the superintendent places confidence in estimating his or her value to the service, although in every State he must see that she has one before he can legally place her on the pay roll.

A better measure of a teacher's scholarship, though by no means an infallible one, is a diploma and degree from a standard university, college, or normal school, which certifies to graduation from a four-year course of training beyond graduation from a standard high school, including special training in the subjects the candidate is to teach, and a certain minimum amount of training in the principles and methods of teaching. Thus the North Central Association of Colleges and Secondary Schools admits to its accredited list only such secondary schools as require of all their teachers graduation from a college equivalent in standing to those which are members of the association, and including 11 semester hours of professional training in education, or the equivalent, as judged by its inspectors. The Southern Association of Colleges and Preparatory Schools, at present, seems to find it impracticable to enforce so high a standard as this within its territory, and admits to its accredited list schools three-fourths of whose teachers are college graduates or the equivalent. In the State of California teachers are not employed in the high schools unless they hold a master's degree from a standard college, representing five years of training beyond graduation from an approved high school. Such requirements, unless school authorities are able to evade them, make certain that high-school teachers shall have had a certain minimum amount of training that is essential to successful work; but training, though it usually implies scholarship, does not always guarantee it; and it does not guarantee that the recipient has initiative, leadership, technical skill, and other qualities of a successful teacher.

Accordingly, in addition to scrutinizing the evidences of their training, the problem of evaluating the work of the teaching staff involves observing the teachers at their work and attempting to compare it with some standards that have been set up and for which some authority or validity can be claimed.

In attempting to do this those who have made this survey have been subject to the same difficulties that embarrass all supervisors of teachers owing to lack of recognized standards for measuring the

work of high-school teachers. Very few standardized tests have been devised for high-school work; and the validity of those which have been used is not by any means yet established. Furthermore, the time at our disposal was too short to admit of the use of such tests as have been tried elsewhere; and we were still further embarrassed by the fact that before the observation of the high-school work began the regular work had closed, and all or nearly all the classes were engaged in reviewing for the final examinations. Within the limitations imposed by these conditions, then, only one way seemed feasible for evaluating the work of the teaching staff. This was to visit as many classes as possible to observe such teaching work as was going on, to question both teachers and pupils as to the aims sought and the methods in use, and then to point out both the features that are worthy of commendation and the features that are faulty, indicating such remedial measures as would seem likely to be both feasible and effective. Quantitative evaluation of the teaching work and comparison with that of other systems seemed to be out of the question under the circumstances.

A STANDARD OF TEACHERS' QUALIFICATIONS.

It was necessary, therefore, to select some definite standards of teachers' qualifications, and so define them that their meaning could be fairly well understood and agreed on. With this done it would then be possible for the observer to indicate the qualities in which the teachers seem to excel, and those in which they seem to be deficient.

The statement of standards that was chosen is one of a number that have been somewhat widely published during the last few years. Its history and the proposed method of its use are described in School and Society (Vol. IX, June 21, 1919, pp. 748–756). According to this statement there are six major qualities of merit in accordance with which teachers and their work can be fairly and conveniently judged. These are as follows: (1) Personality; (2) intellect and scholarship; (3) technique; (4) pupil responses; (5) cooperation; and (6) room conditions. Each of these major qualities is analyzed into from three to six factors, the meanings of which are carefully defined. The ultimate intention is to express the relative values of these factors of teacher merit in terms of numbers, and to use the statement of standards as a score sheet by means of which teachers may be scored and ranked from highest to lowest according to their value in the service; but the factors have not yet been satisfactorily standardized and so these factors of merit will here be used only as the basis for a qualitative estimate of the teachers' work. The method adopted is to take the major qualities

in turn, with its factors and their definitions, and to state, in the case of each, how well the teachers observed appear to measure up to it.

To what extent do the teachers measure up to these standards?

I. PERSONALITY.

1. *Appearance.*—Comeliness, cleanliness, neatness, tastefulness, and appropriateness of attire.

2. *Voice.*—Efficiency and agreeableness as to rate and distinctness of enunciation, and as to modulation (loudness, pitch, and tone quality).

3. *Poise: Self-command.*—Dignity and grace of posture and movement, self-control, and confidence.

4. *Vigor.*—Health, buoyancy, enthusiasm, wholesomeness (physical, mental, and spiritual), initiative, and originality.

5. *Character — Humanity.*—Openmindedness, tact, kindliness, sympathy, cheerfulness, optimism, sense of humor, integrity, justice, loyalty, devotion, and morality.

6. *Leadership.*—Resourcefulness, success in class organization and management, success in securing loyalty and cooperation, success in developing self-direction and self-control, ability to arouse individual and group initiative and endeavor, command, and disciplinary ability.

With regard to the first five factors of personality, the teachers of Central High School average well. They compare more than favorably with the teachers of other large high schools. A very few might improve the quality and efficiency of their voices; but as to this factor nearly all make themselves distinctly heard, and at the same time preserve a refined and agreeable tone quality.

All of them have poise, courtesy, and dignity of mind and manner, and many of them have distinctive charm. These qualities show themselves in the relations of the teachers with the pupils, with whom they are on the best of terms, and whose respect and confidence they seem without exception to have. Friendliness and mutual courtesy between teachers and pupils was the rule, and no exceptions were at any time observed.

The sixth factor, leadership, includes qualities in which these teachers do not make so good a showing. They are undoubtedly successful in securing the loyalty of the pupils to the school; and interest in the work is plainly evident; but in almost every class observed there was more or less lack of efficient organization and class management. The pupils as class groups do not carry on the work of the recitation in an orderly and effective way. They interrupt one another, they interrupt the teachers, and many of the teachers

too frequently interrupt the pupil who is reciting. In practically every class, excepting those in which written compositions were being read, or topical recitations or oral compositions were being delivered, these interruptions were the rule rather than the exception; and in the greater part of the recitations the pupils showed little or no self-restrait. Anyone who wished to say anything or ask a question did so on the impulse; so that all seemed to be talking at one time. With this condition, clear thinking, and adequate exposition of the main points of the lesson in clear-cut, logical order is practically impossible. There was abundant evidence of individual initiative, but it was not controlled and directed in such an organized way that each individual had an opportunity to make his contribution or ask his question without interruption. Consequently the contributions and questions by the pupils failed in most cases to receive due consideration; and the main points of the lesson were not clearly brought out. The work was not so organized and conducted that the pupils could cooperate effectively as class groups. Group initiative was not well developed.

These interruptions were not caused by any inherent lack of good will or courteous intentions, but were evidently due merely to lack of that self-restraint which is habitually exercised by persons who are trained to conduct conferences in an efficient manner. If all the teachers had the proper conception of what organized class procedure should be all such confusion and talking at cross purposes could easily be avoided. They simply do not train the pupils in carrying on an orderly discussion; and they evidently do not realize how important it is to do so.

This lack of skill on the part of the teachers in organization and class management is a serious fault, and nearly all the teachers show it in greater or less degree. The remedy must be found in more and better supervision of the teachers, and in careful study by them of the principles of class organization and management, with the special aim of applying these principles in their class work. The discussion of these principles and their application should be made the order of the day for frequent teachers' meetings, until the management of the classes shall have reached a more satisfactory status. Skill in this factor of good teaching can be gained by attentive practice under close supervision.

II. INTELLECT-SCHOLARSHIP.

1. *General.*—Breadth and accuracy of information; grasp of relationships among facts; judgment of relative values; clear and logical thinking; ease and rapidity of learning; ability to reach sound conclusions and make prompt decisions.

2. *Special.*—Knowledge and skill in subjects taught.

3. *Professional.*—Knowledge of current educational theories and practices; application of psychological and pedagogical principles to methods used. Experience under effective supervision.

4. *Command of English.*—Clearness, accuracy and fluency of diction; absence of grammatical errors and colloquialisms; unity in grouping and subordination of ideas presented; vividness and force in choice of words and constructions.

5. *Scholarly ideals.*—Insistence on accuracy and thoroughness of knowledge and perfection of skills, and on clean-cut, logical thinking; socialized conception of educational aims and values; intelligent curriculum thinking.

As to native intellectual endowments the teachers of the Memphis Central High School would seem to average as well as those of other schools of its class, but as to general and special scholarship only 30 per cent were graduates of colleges of standing, while 20 per cent had had no college training whatever when elected to their positions. (See Chapter II.) This places this high school far below the high schools of most of the cities of the size of Memphis as to the average scholarship of its teaching staff; for in most of the large cities, no teacher of an academic subject can obtain a position in the high school unless he or she is a graduate of a reputable collegiate institution.

The high-school teachers who are not college graduates should be required to pursue summer courses in colleges or universities until they have at least met the requirements for the bachelor's degree, and no future applications for high-school positions should be considered unless the applicants are holders of degrees from colleges of good standing. This is the least drastic policy that will result in placing the Memphis high schools above reasonable criticism with respect to the scholarship of their teachers; and its adoption is recommended.

As to professional or pedagogical knowledge the average of the high-school teaching staff is distinctly low. This is indicated by the prevailing weaknesses in class management, and by the very general lack of skill in the technic of instruction, which will be discussed later. Both from testimony and from observation it is evident that effective supervision of instruction and intelligent guidance in the study of pedagogical problems have not been in operation in these high schools. Both of these features of administration are essential to the production of good individual and team work in teaching.

Concerning the fourth factor it was observed that all or nearly all of the teachers use clear, and fairly accurate English, free from

grammatical errors; the cases were not wanting in which such colloquialisms as the use of like for as and different than for different from were observed. Such errors, of course, should be avoided. There is really no excuse for using any but the best of English in the classroom, for teachers, above all persons, should set the example for the children. Also as to unity in grouping and subordinating ideas to the main thought, the presentation by many of the teachers left much to be desired, and could have been greatly improved by careful planning of the lessons before giving them.

As to the fifth factor, high-school teachers in general are far less scrupulous and careful than they should be, and the Memphis high-school teachers appear to be below the average in this matter. Pupils will prepare their work with thoroughness, will perfect their knowledge, and will think methodically if the teachers invariably accept nothing less than this; but they will not do so unless the teachers habitually insist on it. They will follow the line of least resistance, and be content with careless and thoughtless work if they are allowed to get by with it. On the other hand, cases were noted here and there of teachers who were overzealous in the matter of insistence on accuracy of detail, even to the extent of nagging the pupils. The wise way, of course, lies between these two extremes. We do not mean to be understood that the teachers are generally without high ideals of scholarly work; for practically all of them showed in their replies to our questionnaire that they have them in a marked degree. The trouble is that they do not insist as constantly as they should that their pupils live up to these ideals. It is easy to do this kindly and without nagging; and the pupils generally like best and respect most those teachers who always hold them up to the best that is in them.

III. TECHNIC.

1. *Selection and organization of subject matter.*—Definiteness of aim; adaptation to pupils' interests, needs, and capacities; sequence; correlation; selective emphasis; use of problematic situations.

2. *Skill and judgment in questioning.*—Speed; consecutiveness; conciseness; stimulating quality; clearness of distinction between memory and drill stimuli and thought stimuli; treatment of answers; avoidance of common faulty types of questioning.

3. *Faculty in exposition.*—Illustration by examples and analogy; inductive approach; use of visual aids; proportion of questioning to telling; establishing connections with life situations; clearness of deductions; judicial treatment of evidence; definiteness and conclusiveness of lesson as a unit of instruction; balance and thoroughness of development.

4. *Motivation.*—Use of pupils' experience in inducing study, thought, practice, controlling ideals in school life, and enthusiasm for the work in hand.

5. *Economy.*—Avoidance of waste in time and effort; exclusion of irrelevant materials and processes; success in keeping all pupils actively employed on the lesson throughout the period.

6. *Assignment.*—Setting up the main lesson problems; making the significant stand out; indicating best methods of study; making requirements definite and positive.

A case of unusual merit in the first-named factor of the technic of instruction was found in one of the classes in English. The teacher had dictated to the pupils an outline of the points of excellence in the short story. The pupils kept this in their notebooks for constant reference in connection with certain short stories that had been selected for study. After reading each story as a whole, the pupils were to analyze it with reference to these points of excellence and prepare individual reports in which they gave their judgment as to the degree and manner in which the story assigned measured up to the standards set forth in the outline. It will be seen that this device meets the requiremens of good technic in every detail. A number of pupils who were questioned all testified that this way of working interested them and that as a result of using it they had become interested in reading good stories and had learned how to judge and appreciate them. It was learned that the English teachers had discussed this outline and method in their division meetings and that several of them were using it. It would have been just as effective and far more economical of time and effort if the outline instead of being dictated had been mimeographed or printed and distributed to the pupils. (See factor 5.)

Other notable examples of good organization and definiteness of aim (factor 1) resulting in strong motivation (factor 4) were observed in the classes in expression. In one of these a group of the pupils were engaged in rendering selections from a standard play, each pupil taking a part. The reading of the parts by the pupils was done with remarkable feeling and spirit and with excellent vocal interpretation. In stage parlance, they "got it across" to their classmates who constituted the audience, holding attention and interest throughout. The teacher kept herself in the background, but directed and controlled the work with consummate skill. There was a definite aim—the proper interpretation of the play. The teacher knew exactly what she wanted the pupils to learn and do. Questions and explanations were fitted to the purpose and circumstances. Things went forward in orderly sequence and there was neither lack of interest nor loss of time. The pupils showed training in orderly methods of attack.

The influence of the work in the expression classes extends throughout the school. In the English classes, for example, the observer found it easy to pick out pupils who had pursued the course in expression by the superior manner in which they delivered their reports and oral compositions.

This was verified in a number of cases by interrogating the pupils. Pupils who were questioned invariably showed enthusiasm for the work in expression and asserted that they worked hard at it. They must have worked hard and attentively; else they could not have done so well.

This leads one directly to raise the question as to why "expression" and "public speaking" should constitute distinct courses apart from the classes in English.

Why should not expression and public speaking be prominent, even dominant, features of the work in every year of the study of English composition and English literature; and why should not the instruction in this line be as efficient in every English class as in the classes in expression and in public speaking? Plays of Shakespeare were being read by parts in English classes. The purpose here should have been exactly the same as in the classes in expression and in public speaking. These are intelligent understanding and interpretation, the acquisition of tastes and appreciations for the masterpieces of literature through participation in their interpretation, and the formation of habits of reading the world's best literary productions for the wisdom, the beauty, and the ideals that they set forth. In these classes, however, the matter of interpretation received no attention, so far as the observer was able to notice.

In a few of the English classes, as we have noted, good types of work were being done, the best of it consisting of topical recitations and oral compositions; but in none of them had the instruction and class management reached the efficiency and inspirational power that was shown in the special classes in expression. This certainly ought not to be so. The standards for interpretation of literature in the literature classes should be as high as are those in the expression classes, and the teacher should be just as competent to get results in this line. If there is any reason at all for separate courses in expression and public speaking, it should be to give the finishing touches to pupils who wish to specialize in dramatics, pageants, public speaking, debates, and parliamentary procedure; but all of these things should find a prominent place in the English instruction and should be as efficiently taught to all pupils as to those of the special classes—at least, up to the point of discriminating and critical appreciation of good performance in these lines, and up to the point of intelligent personal enjoyment in the silent reading of

literary masterpieces. There would be much gain and very little loss, if any, were the vivisection of prescribed "English classics" largely replaced by such work.

We are not saying these things to magnify the merits of certain teachers to the disparagement of others, for all are sincere and devoted to their work, but to make prominent a needed reform in the school. When there is such a difference in the methods and results of doing things that are or ought to be done for similar purposes, this difference should be made the subject of study, and supervisory machinery should be set in motion that will bring about better results. To this end the contrast has been set up, but it must not be inferred that the condition called in question is peculiar to Memphis. It prevails to a lamentable extent in very many of our best high schools, and when the public once awakes to a sense of how bad it is the public will rise up and do something. It would be much better for the school people to improve the teaching through competent departmental supervision before this happens, for when the public strikes it does not always strike with discrimination.

The evidences of a high degree of skill in the technic of instruction, such as we have just mentioned, are exceptional in the Memphis high schools.

In more than four-fifths of the class work that was observed there was little that measured up adequately to the standard enumerated under the six factors of technical excellence outlined above. Specifically, there was much lacking as to definiteness of aim, logical sequence, and the use of problematic situations in nearly all the work observed. There were many examples of faulty questioning and very few examples of really skillful questioning. As to organization, the prevailing type of procedure was to follow the textbook topics seriatim, with little or no rearrangement or selective emphasis. There was very little use of visual aids. Maps were very few and very seldom used. Pictures appeared rarely, and lantern slides never appeared, though inquiry developed that pictures are occasionally used by several teachers. There are five projection lanterns in the Central High School, but inquiries among teachers and pupils as to their use indicated that they are infrequently or never employed in most of the classes when they would be of very obvious utility. This is in striking contrast with two of the high schools in another city, not quite so large as Memphis, where the observer saw lantern slides, pictures, maps, and other visual demonstrations and aids to instruction in use in many of the classes during a two days' visit, and where a high degree of technical skill was shown in the work of nearly all the teachers.

EXCERPTS FROM FIELD NOTES.

In order that the reader may know on what kind of evidence the observer has based his judgments, some excerpts are here given from among a mass of field notes taken during his visits in the classrooms. In the original notes the happenings were taken down just as they came. Here they have been separated under the headings good and bad. Material that would identify individuals has been suppressed, so far as this was practicable:

1. *A mathematics class.*—Good: This teacher is forceful, stimulating, and careful. Pupils all good natured. Seem to enjoy the work, and are remarkably well poised. Teacher speeds up the pupils and holds attention. Bad: Talks too much. Changes questions, making several starts before getting the question out in a form that is clear and suits. Questions are a shower of words, where a few crisp words would be sufficient. Exactitude in answers not invariably required. Pupils not called upon to criticize faulty answers. Makes pupils do over again what they have already done correctly. Interrupts and badgers them unnecessarily, but they accept it good naturedly and do not lose their wits or tempers.

2. *A foreign-language class.*—Good: Careful pronunciation. Ready responses. Excellent interest and good will. Pupils evidently enjoy the recitation work and seem to have made good preparation. Bad: Teacher corrects the pupils' mistakes in the blackboard work, instead of having them pointed out by pupils and corrected by those who make them. Pupils respond in volleys with various answers to thought questions, no single answer being distinguishable. Result: Much confusion and loss of time and effort in an otherwise good recitation.

3. *A social study.*—Good: General features of the recitation very good. Development of topics by questions was clear and logical, though there was considerable lack of smoothness and consecutiveness in the movement of the lesson. Teacher asks many good thought questions and pupils think well. They enjoy thinking and there are many different points of view. This makes the recitation interesting. Opposing opinions are well weighed and questions are clearly settled as far as the pupils' knowledge admits. Teachers' explanations clear and well illustrated, especially by local and personal application that the pupils can understand. Bad: Teacher not very fluent; more embarrassed than pupils by presence of visitor. Pupils accept the visit as an interesting incident. Teacher permits pupils to answer in volleys and to interrupt one another, but this is far less frequent than in the classes of most of the other teachers. This is one of the very best teachers in the corps.

4. *An English class.*—Good: Nothing good that was worthy of special note. Bad: The pupils were given quotations from a standard drama. No attempt was made at interpreting these. No questions by teacher as to why they were selected. No questions asked as to the numerous problems of the play; hence no thinking was manifest. No questions asked by pupils. Teacher asks only questions such as, "Who said this?" "This was said by whom?" "When?" etc. Pupils might have got something from reading the play. Probably did, for they did not seem bored, but they certainly were getting nothing from this teacher at this time.

5. *An English class.*—Good: This teacher's voice is pitched too high, but she gets attention and keeps order. The interest is good. Bad: But the teacher does most of the talking. Like many of the others, she does not think out her

questions before uttering them; so she repeats with tiresome verbiage, i. e., "What do you mean by swashbucklers?" "What do you mean by that sentence?"

6. *An English class.*—Good: Excellent pictures from New York Times' Sunday supplement illustrating Shakespeariana, cut out and mounted on cardboard, were posted on walls with stickers (push pins are better). Pupils reading a play by part. Attention and interest good. Bad: The reading by most of the pupils was just fair. Some of it was very, very poor; but no questions were asked by pupils or teacher, and no comments were made. Good reading was passed without commendation and bad reading without any attempt to make the pupils do better. Questions should have been asked and suggestions made by pupils and teacher until the poor reader had caught the interpretation and spirit of the speech, and should then have been incited to try again and see if he could do better. This was done by the observer in one class, and the improvement in the pupil's second reading, after he had caught the real meaning of the passage, was so marked as to provoke enthusiasm on the part of the remainder of the class.

7. In another class in English, doing the same lesson under another teacher, there occurred nothing but this same procedure, some good, but mostly bad or indifferent reading, without comment, question, or suggestion. This teacher has the habit of starting a question three or four times before she gets it out in a form that is satisfactory to her.

8. *A supervised study period in mathematics.*—Good: Teacher's voice, presence, and manner pleasing. Speech efficient. Pupils ask questions freely. Their questions are direct and thoughtful. A list of problems was assigned at which the pupils were all working. Teacher cleared up difficulties when requested by the pupils. She worked economically by requiring attention from all when an explanation was asked by one which she thought all ought to hear. Her explanations were clear, direct, and concise. She classifies cases and directs attention to results obtained by similar methods in cases of the same class. This is an important factor of good method, especially in review work, such as this was. This was an example of very good supervised study work. Bad: However, she appeared to be helping the pupils too much. It seemed to the observer that she might have got them to do more for themselves by asking them questions that would make them think their own way out of their difficulties. Good: Pupils who were questioned said the teacher made them work hard, but they liked the study. Their answers to the observer's questions indicated that they had a very good knowledge in general of the work.

9. *A laboratory class in chemistry.*—Good: A fair proportion of the pupils were experimenting with good interest, attention, and efficiency. Some tended to be idle and somewhat indifferent; a few showed intense interest and very thorough knowledge of the subject. They wanted to come back next year and take a post-graduate advanced course. Bad: The class was too large for one teacher to handle well without an assistant. Student assistance has been tried, but here as elsewhere it is practically a failure. There was too much talking, noise, and confusion.

10. *A tenth-grade Latin class.*—A review of forms was going on. As a guide to organization a printed tabulation of all the forms of the parts of speech and the principle rules of syntax was used. Pupils said this was very helpful as a means of ready reference instead of a grammar book. It should be. By questioning the pupils the observer learned that the methods of studying Cæsar in this class were similar to those used in good schools elsewhere, but there was apparently a dearth in this room of good illustrative materials, such

as maps, charts, and pictures. The order was fair, but at times all talked at once—the most common fault in the school. This teacher was said to be one of the best.

11. *A class in a social study.*—Nothing that merited approval was observed in this class. The teacher's manner was not engaging. She seemed to be worried because the class was not getting over the ground faster and more smoothly. There was no evidence in her teaching that she had an adequate idea of the significance of the subject in the education of a citizen.

Her questions in the main were not consecutive, and had little relation to one another. There was an outline on the board, but this was purely factual and was being followed in a desultory way. The questions were all to elicit facts, and there was no selective emphasis. No relations among facts or events were sought out. The questions were very faulty. They were mostly long questions, ending with the word what. Pupils if at all bright could gather from the question itself just what was wanted in answer. The answers required were mostly single words or short phrases. There was no opportunity for the pupils to present evidence, draw inferences, or in fact do any thinking. They had to give the answer the teacher wanted to get. In one case certain pupils wished to argue as to some facts which they thought from the text were contrary to what the teacher wanted them to say; but instead of letting them find out the truth through thinking and reference, she promptly and effectually suppressed them. A good opportunity for training was thus thrown away. The teacher appeared to think there were so many facts to review and so little time to do it in that there was no place for thinking.

This was typical of occurrences in many other of the classrooms where the all-important idea was cramming up for the final examinations. Another type of question used by this teacher, and often observed in the case of others was a long statement followed by "Is it not?" or "Did they not?" The pupils of course were expected to look intelligent and answer, "Yes, ma'am."

TYPE QUESTIONS AND ANSWERS.

Here are some of the questions verbatim:

Teacher. The chancellor of the Exchequer was the same as what?

A pupil. The treasurer.

Teacher. And the treasurer does what?

Pupil. Takes care of the money.

Teacher. Yes; he takes care of the money; and these ministers made up what body?

Pupil. Curia Regis.

Teacher. Yes; Curia Regis, and what was the Curia Regis?

Pupil. King's court.

Teacher. Yes; it was a council of the king's court, and a king's court did what?

Pupil. Tried cases.

Teacher. Cases that concern whom?

Pupil. Kings.

Teacher. Yes; kings. Where did this Curia Regis meet? Where did they hold their meetings?

A class of eight or nine-year olds ought to make as good a showing with such methods and questioning with 20 minutes previous study as this tenth grade class did, and they would probably learn as little. No comment on such questioning should be necessary were it not for

the fact that persons who go through the motions of teaching in this way pass for experts in so many of our schools of good repute. Most teachers who have fallen into the habit of using such ineffective and faulty types of questioning do not realize that their work is so bad; and if confronted with stenographic reports of their recitation, would scarcely believe that these reports were exact reproductions of what happened in their own classes. More or less of this sort of teaching is found in all cities, but in the Memphis High School it is much more prevalent than in other large high schools known to the observer.

TYPES OF FAULTY TECHNIQUE.

The following types of faulty technique are very common in the school and appear frequently in the observer's field notes. Not more than two or three of the teachers are entirely free from them:

1. The inverted question ending in what, where, whom, etc., i. e., "That was the beginning of what?" "We have this condition where?"

2. The statement followed by "Isn't it?" "Didn't he?" "Wasn't that so?" and the like, to which the pupils can only answer "Yes."

3. The question that can be answered by giving a name or other single word. For example, Teacher: "Then we found the Persians moving on to what next line of defense?" A pupil: "The pass of Thermopylæ. They tried to stop them." "Teacher: "Who did?" Pupil: "The Spartans." Teacher: "Led by whom?" A pupil: "Leonidas." Many questions of a somewhat similar type can be answered with either "yes" or "no" and with nothing else. With such questions it is evidently a mathematical certainty that 50 per cent of the pupils' answers will be correct though they may know nothing whatever about the subject and answer only by guess.

4. The blank-filling question, in which the teacher makes the entire statement, excepting a word or two, such as the name of a person, place, or action, for which she makes a pause at the proper place. All the pupils have to do here is to supply a missing word now and then. Very commonly the right word is not given by the pupils and the teacher supplies it herself and then continues in the same way.

5. The false start, in which the teacher changes the form of the question either before or after she finishes it. In the case of one teacher (of English, by the way), the observer noted that she started a question four times before she got it out in the form in which she wanted it. This fault is very common in the corps, but two false starts are more common than three.

6. *Repeating answers after the pupils.*—This is supposed to be done in order to make the answer emphatic so the pupils will all remember it. It does not have this effect. It releases the one reciting from the responsibility of making the matter clear to his classmates and permits the class to lapse into reverie. Answers are often repeated by teachers because the pupils do not speak loudly and distinctly enough to make themselves heard. This is bad. It causes the pupils to form wrong habits and it obviously cuts down the efficiency of the recitation 50 per cent. Often the teacher says "yes" and then gives the answer correctly when the pupil has given it wrong without calling attention to the essential difference. This causes the pupil to learn soon that he can satisfy the teacher with any kind of answer so long as he uses a look and tone of apparent interest and sincerity. Here is an example from the class of a

teacher of public speaking, whose work and influence in many of its phases are excellent. It was noted down as a cross-section of a 10-minute portion of a lesson in which the teacher was doing practically all the work and the pupils little or nothing: Teacher: "Pretty apt to be what?" A pupil: "Friction." Teacher: "Pretty apt to be friction."

7. The hesitation question or statement, in which the teacher pauses at short intervals to think up the next section of the sentence instead of having it all thought out before beginning to utter it. The pauses are filled in by "ah," "eh," or "er." For example (again from an English teacher), "He speaks of--a-a-a-ah--he was fearful of disturbing his friend's equanimity." This type of hesitating or drawling delivery is characteristic of some teachers, and many who do not use it themselves permit it commonly in their pupils, who easily fall into the habit unconsciously from imitation of some teacher. Nearly all persons do it occasionally, but when it occurs frequently or habitually it becomes inexpressibly boresome.

8. *Allowing several pupils to answer a thought question all at the same time, instead of requiring each to take his turn.*—These "volley answers" are productive of nothing but waste and confusion. In answering memory questions, where there is only one good form of answer which should be fixed in memory, the pupils should be trained to give the answers in concert and keep exactly together. This gives every pupil a chance for attentive repetition, which is the necessary condition for memorizing. If there are 20 pupils in the class as in reciting a Latin paradigm, or a memory selection in English, or a principle in science, or a rule in mathematics, 25 times as much can be accomplished by this method as by having the pupils recite singly, and, therefore, if the teacher watches for the laggards and prevents them from shirking, it is 25 times as efficient for drill work. Teachers should carefully distinguish in their lesson plans between memory and habit work on the one hand, which requires drill and repetition, and thought work on the other hand, which requires a short time for reflection between the question and answer, and they should conduct the work accordingly.

9. Calling too frequently on a few willing and well-prepared pupils, and ignoring a majority who are ill prepared. This fault is very common and confirms these pupils in habits of laziness and inattention.

10. Leaving doors and windows open so as to admit disturbing noises from the halls or outside the building. Much disturbance was noted from this cause. Some of this could not have been avoided, but much of it might have been.

11. Allowing half a class to be idle while the other half is putting work on the blackboard.

12. Devoting one's self to a single pupil who may be having a difficulty and becoming temporarily unconscious of the existence of all the others, part of whom immediately become idle and another part mischievous. This fault is most common in mathematics and foreign-language classes when the greater part of all the pupils are at the blackboard. When difficulties are encountered by one pupil that are likely to be of interest to all, then the attention of all should be directed to these while they are being explained. If the time is to be devoted to supervised study all the pupils, or nearly all, should be working at their seats.

FACILITY IN EXPOSITION.

The observed evidences of excellence in factor 3 of technic, facility in exposition, were very rare in the recitation work witnessed. The teachers in action do not seem to measure up well to this standard. As a body, in the opinion of the observer, they would

average distinctly below the high-school teachers of a dozen or more large cities where the observer has made careful observations. This is true in considerable measure also of factor 5, economy. As to factor 4, motivation, few special procedures or devices for this purpose were noted in class work; but many of the teachers in the questionnaire mentioned above told of excellent devices which they are accustomed to use and which would undoubtedly arouse strong interest and call out initiative. It is a matter of regret that space is not available in which to describe these. They make intensely interesting reading and would constitute a useful part of the report. We must be content, however, with saying that the behavior of the pupils and their attitude toward the work in practically every department of the school indicates that they are much interested in their studies, are anxious to contribute ideas to the recitation work, and show abundant evidences of individual initiative. They welcome opportunities to think, though too many of the teachers do not give them such opportunities as frequently as they should.

With regard to the interest and enthusiasm that the pupils show for their studies, this school ranks among the very best that the observer has visited. Hence in spite of the lack which has been noted of skill in the mechanics of class management and instruction, the teachers must be regarded as highly successful in arousing and holding the interest in their subjects and the enthusiasm for work that a very large proportion of the pupils so evidently possess. A great part of this must be due to the excellent spirit of genuine friendliness and helpfulness that the teachers show in their relations with the pupils in the classroom and outside the classroom. Nothing finer than this relation exists anywhere, and it can not be too highly commended. It must go far to make up for many of the defects that have been noted.

As to item 6 of technic, the teachers make a rather poor showing, but in this they are no worse than 90 per cent of teachers everywhere, if that softens the criticism any. The importance of a careful and helpful assignment of the next lesson is very little recognized among teachers generally, and it is very hard to make them realize how important this feature is, or to pay proper attention to it. Nothing but the most careful, patient, and insistent supervision will improve this factor of the teacher's work. There is no question, however, but that it should be improved.

IV. PUPIL RESPONSES.

1. *Efficient functioning of habits and skill.*—Habitual promptness and good form in all school work. Skill in the arts taught by the school, as reading, writing, drawing, calculation, manual arts, cooking, sewing, etc.

2. *Command of subject matter.*—Ability to recall and use knowledge; good lesson preparation; ability to interpret facts, phenomena, literature.

3. *Thinking ability.*—Recall of significant facts and ideas; selection of those relevant to a conclusion; getting and testing hypotheses; establishing conclusions, inductively and deductively; getting and using concepts of methodical procedure in thought and action.

4. *Expression.*—Clearness, grammatical correctness, precision and conciseness in use of English; good vocalization and bodily attitudes.

5. *Tastes and appreciations.*—Intelligent enjoyment of literature, art, and science as exemplified by choice productions.

6. *Impelling ideals, initiative.*—Evidences in conduct of the functioning of ideals of industry, thoroughness, integrity, fairness; spirit of inquiry and endeavor; tendencies toward originality and self-direction; evidences of the will to serve.

A considerable amount with reference to the quality of the teaching may be inferred from the quality of the work done by the pupils and the amount of training they show in their responses. Some experts in education would make this the only criterion of excellence in the teachers' work, and would measure it not at all by observation and opinion, but by means of objective and standardized tests in the school subjects.

The idea is perfectly sound, but at present it fails practically at two important points. First, as to high-school work, the few tests that have been proposed are as yet far from satisfactory, and it will be some time before thoroughly satisfactory objective tests have been developed in any considerable portion of the high-school subjects. Second, any method whatever of measuring the work of a teacher by what his pupils do, whether the latter be measured by objective tests or subjective estimates, assumes that what the pupils do is the result of the teachers' work and that only. It ordinarily takes no account of the pupils' native ability, of their native and spontaneous interest, of their previous training, and of the training they have been getting during the same time under other teachers, or through outside reading, or through contact with a stimulating home environment. These other influences may be fully as effective, either for or against a good score for the pupils in any quality or with any method of evaluation, as the instruction given them by the teacher under consideration. Hence those who would depend only on "measuring the teacher by the results of her work" are seriously in error.

This fact, that the teacher in the classroom is not wholly accountable for all that the pupils do or do not do in the classroom must be borne in mind while we are discussing this factor in evaluating the teacher's work. Nevertheless, very much of what the pupils do and how they behave in the classroom is the direct result of the methods

of the particular teacher under whose control they are at the time of observation; and considerable weight should be attached to their behavior in the classroom as a measure of the quality of instruction.

As to factors 1 and 4, under pupils responses, the pupils of the Memphis Central High School do not, in the opinion of the observer, average conspicuously high; but they do rank much above the average of the schools that he has visited. A large proportion, though not by any means all, are habitually prompt in the various acts required; they carry themselves well, maintain good if not perfect bodily attitudes, are generally courteous and respectful, and very generally make themselves heard in recitations. Their answers to questions and their topical recitations are made in better English than the average of city high-school pupils, and very much better than the average of rural high-school pupils. Yet in this there is vast room for improvement in the great majority of them. It was not noted that the teachers generally took notice of faulty positions or faulty English when used by the pupils, and insisted on the correction of these faults, as obviously they ought to do. A few of them did, but by far the greater portion did not. As to the special skills taught by the school the pupils made a good showing, and seemed to average well up in comparison with those of other schools known to the observer. These pupils seemed to rank with the average or above in command of subject matter, though here in many classes it was difficult to guess how much they knew, because the methods of questioning by the teachers were so poor.

As to factor 3, thinking ability, excepting in the cases already noted, where the teachers' methods were unusually good or where the method of topical recitations was employed (this method was very well carried out wherever it was used), it must be said that the pupils had very, very little opportunity to show what they could do in the way of good thinking; so the observer had little chance to make a general estimate. Hence, in order to find out, he was forced to question the pupils himself in a number of classes in order to get a random sampling of the product. Wherever this was done the responses of the pupils were remarkably good. They showed that they were eager to think and express their thoughts if only they were given a chance, and they did think well and keenly. The eagerness with which they responded to questions and suggestions, intended to help them think their way through to a complete understanding of the matter under discussion, was most interesting. It suggests that in the Central High School there are sources of thinking ability and leadership for the solution of the future problems of a "greater Memphis" that are not being tapped and developed, and it seems nothing less than tragical. If the writer could get across one and only one message to the teaching staff of this school it would be,

"Give these splendid pupils more chances to think and do not bother so much about making them memorize unrelated facts, and cramming them for final examination."

The principal weakness in the teaching in this line lies in the fact that the inductive approach is so little used in the teaching of general principles. In almost every subject and in science especially there is material for inductive reasoning, that is arriving at general principles through the prior consideration of particular facts, events, or cases. Every general principle should be approached in this way, enough particular concrete cases being considered and discussed so that the pupils can infer and formulate the general principle for themselves. Even mathematics, which is almost invariably taught deductively, the abstract principle being memorized first, and particular solutions being developed by reasoning deductively from them, is best taught inductively. Yet throughout the work in this, in foreign languages, and even in science, memory work was the rule and reasoning the exception, so far as was observed.

Concerning factor 5, the opportunities for observation were too limited to admit of very satisfactory judgments; but the impression gained that the pupils are getting many very excellent opportunities for the development of taste for literature in the English department, but not as much as they should get because of the poor work already mentioned in interpretation. In the expression classes they are getting it in an ideal way. In the art classes, they are getting most excellent opportunities for the development of taste for beauty of line, form, color, and composition; but this department, through doing such excellent work is reaching far too few pupils. In science some tastes and appreciations are evident; but too few pupils are taking science work, and too few of these are being given opportunities of acquiring a taste for the best things in scientific experiments and scientific literature.

As to factor 6, the development of ideals, the observer arrived at the conviction that the school is conspicuously successful. If there is a body of high school pupils with a finer school spirit and finer ideals than are evident in the Central High School of Memphis, he has never seen it. That in so large a body of pupils a few may be found, whose physical, intellectual, and moral ideals as expressed in their conduct are not what they should be is very probable. Yet such pupils, must be very few and have very little influence on the whole body. (See also Chapter VI.)

V. COOPERATION.

1. *With official superiors.*—Cordial responses to directions; willingness to accept criticism or suggestion and profit by it.

2. *With colleagues.*—Working with colleagues for the common ends; sustaining cordial social relations with them.

3. *With community leaders.*—Activity in community betterment; participation in patriotic and charitable movements, church, clubs, etc.

4. *With pupils.*—Leadership and direction of approved student activities.

5. *With educational associations.*—Reading circle and other professional study; promoting and cooperating in teachers' improvement organizations and movements; reading and supporting professional periodicals.

The members of the survey commission have had occasions in plenty to form a high opinion of the willingness and ability of the Memphis high-school teachers and principals to cooperate. They have cooperated with us most cordially and delightfully in every possible way; and have sincerely tried to help us in making our work of value to them and to the schools. We were obliged to put some burdens on them at the most trying time of the year; yet almost without exception they did all that we asked in a spirit of the utmost courtesy and hospitality. The work of those who have to look for faulty as well as for meritorious features is not intrinsically pleasant, no matter how interesting it may be; but these teachers and their pupils made us feel so welcome and so much at home with them that our field work was a delightful task. With such experiences in mind it is impossible for us to make any other inference than that the spirit of cooperation between the teachers and their superiors, and among the teachers themselves, comes very near to being all that could be wished for. There were observed some points of detail where administrative relations were not working out with perfect smoothness, but these cases were all capable of satisfactory adjustment so far as we could judge. We found most of the teachers not only willing, but anxious to receive any criticisms or suggestions that might in any way help them to improve their work. This was true of the principals also.

Testimony of value as to cooperation was found in the teachers' answers to our questionnaire. These told of numerous and varied community activities in which they had cooperated and led their pupils in cooperating.

As to factors 4 and 5 we have the impression that there is good cooperation in what is being done; but that in general both the student extracurricular activities and the teachers' professional activities are not developed to the extent of maximum efficiency and advantage. We believe that both these features of school work might be made both more extensive and more intensive with general advantage to the high schools; and we therefore recommend that both student organizations and teachers' professional organizations be given special consideration and study with reference to possibilities of further development and correlation with the purposes of the high schools.

VI. ROOM CONDITIONS.

1. *Attractiveness.*—Artistic displays of school work; making room homelike; keeping things neatly arranged; use of pictures; plants, window draperies, etc.

2. *Order, adaptation.*—Adaptation of furniture and visual aids to the school work; system.

3. *Controllable hygienic features.*—Attention to heating, ventilation, adjustment of window shades, cleanliness and hygiene of pupils, habits, posture, etc.

With regard to attention to room conditions the teachers generally are about as good as the average elsewhere; but the average teacher gives too little attention to these matters. Teachers who do pay careful attention to these details usually stand out as exceptionally good teachers in other ways as well as in this one. In the Central High School the teachers who do not have a so-called home room, but have to hold their various recitations in different rooms, are at serious disadvantage with respect to factors 1 and 2. This is perfectly obvious and needs no further comment, excepting that something might be done through cooperation of those teachers and pupils who use these rooms.

As to factor 3, teachers generally are great sinners with regard to neglecting the proper adjustment of window shades. So far as 90 per cent of all teachers are concerned there might as well be no such things as a window shade, for they simply pay no attention whatever to these essential aids to school hygiene. The Memphis high-school teachers are no better than others on this point; but they have an excuse in that most of the shades are in such a dilapidated condition as to be absolutely useless.

It is recommended that the subject of better room conditions as outlined above be given special systematic study and supervision until marked and permanent improvement has been accomplished in all those rooms where conditions are not conspicuously good. The silent and subconscious education in taste and refinement that results from homelike, orderly, and elegantly kept schoolrooms, artistically arranged and decorated is not yet generally accorded the importance in school life that belongs to it. The art department, which is functioning so well for the few pupils it is reaching, ought to be a dominating influence in the movement that we are urging.

THE TEACHERS' QUESTIONNAIRE.

In order to get from their own testimony some idea of the teachers' conceptions of the educational values of their subjects, and in what manner they attempt through their methods to realize these values,

the following questionnaire was given out. It was answered by all but one or two of the teachers in the Central High School.

Name_____ Subject taught_____

1. What are the larger aims that you have in view in teaching your subject (or subjects)?

2. In your daily class work what kinds of opportunities do you have (*a*) for causing your pupils to form desirable habits, or (*b*) to acquire valuable ideals, or (*c*) to develop tastes and appreciations, or (*d*) to learn how to think and how to study independently?

3. Just what do you do, if anything, to connect up your classroom instruction (*a*) with the specific interests of the children, or (*b*) with the needs, activities, enterprises, and welfare of Memphis?

The answers are very clear and satisfactory and in most cases very commendably specific, showing that nearly all the teachers have clear conceptions of the importance of forming useful habits, inculcating valuable ideals, developing tastes and appreciations, and stimulating independent thought through the media furnished by the various school subjects. Most of them have very intelligent views of what the larger aims should be in teaching their subjects. Their answers show that they are devoted to their pupils and their work and have high and exacting professional ideals. A large majority of them give direct testimony as to specific methods used; and the methods mentioned are good. There is much satisfactory testimony in response to the third question. These answers from the teachers, comprising about one hundred and fifty pages of manuscript would make an interesting booklet, worth careful reading by anyone who teaches in high schools or who has children in high schools. If the board of education should order them edited and printed for distribution among teachers and parents, the booklet would be well worth its cost.

One further comment on these answers: They indicate that many of the teachers do far more to develop thinking ability than the observer was able to find evidence of. There are two possible explanations for this: First, the recitation work observed may not have been a fair sample of the yearly product. This is very probable since the examinations were so close at hand, and the teachers were perhaps more worried about them than usual on account of the loss of time due to influenza and other causes. This would have the effect of intensifying a tendency already too great, to have the pupils give back memorized facts from the textbooks instead of placing them in problematic situations and inciting them to think their way out.

Second, the actual practice of the teachers may not be so good as their professions of faith. This also is very probable, for it is a common trait of all of us decent humans to set up high ideals for our-

selves and then to fall far below them in our performance. Yet we are far better for adopting these ideals and thinking about them; and our practice improves faster when we have set up standards of perfection toward which we persist in striving.

IV. THE PROBLEM OF HIGH-SCHOOL ADMINISTRATION.

THE PRINCIPLES OF INTERNAL GOVERNMENT.

There are three phases of the internal government of the high school for which the principal is responsible—organization, direction, and supervision.

(1) He is responsible for making the program of studies and organizing these into curriculums, for organizing the pupils into classes and sections, in which each group can get the kind and amount of instruction that are suited to its needs, for assisting the pupils in working out and organizing clubs and teams for extra-curricula activities that are of value in education and growth, for assigning the teachers to departments according to their qualifications, assigning rooms and recitation sections to them, and making the time schedule and the administration rules which show what these assignments are.

(2) All these organized activities require to be carried on under authority and direction; and in a large school, as in any large business organization, much of the direction must be parceled out and distributed among various other persons to whom the requisite authority must be delegated. So the principal directs the school organization as a whole, and in its parts, either in person or through the assistant principals, heads of departments, teachers, and officers of student organizations.

(3) Assuming an organization perfected in its details, with an executive and directive personnel in which, under the direction of the general manager (in a school, the principal), each individual subordinate has been chosen with reference to peculiar and expert knowledge and skill in that portion of the directive and executive work assigned to him or her, there yet remains an important function, too often badly neglected or at least very inadequately perfected in many of our elementary schools, and still more imperfect in most of our high schools. This is the third, or supervisory, function. The teacher must supervise the pupils in their study and in their socialized recitations. They must also assist the principal in the supervision as well as in the direction of the student organizations and extra-curricular enterprises. The heads of departments must direct the cooperative work and study of the teachers of their departments in accordance with the general educational policies and plans of the

principal as approved and sanctioned by the superintendent and the board of education.

They should also assist the principal in supervising the actual work of instruction within their departments in such manner and within such limits as he may specify. The assistant principals should be the right-hand man and woman of the principal in all his executive work. They should handle all excepting the most intricate and difficult of the cases of discipline that inevitably come up for settlement from teachers in a large school—the man dealing mostly with the boys and the woman mostly with the girls.

They with the stenographic clerk should take the clerical work entirely off the hands of the principal, performing it under his direction, thus leaving him free to work out the larger problems of plans and policies, of dealing with parents, with the superintendent, and the board, of directing the school government, and most important of all, of selecting and recommending teachers and supervising directly the teaching in all departments. It is in this third factor, supervision, that most schools are weak; and this weakness usually results from three conditions: (1) The principal is not given a sufficient number of competent assistants. More is expected of him than is humanly possible for one man to accomplish effectively.

(2) The principal fails to perfect the organization by choosing the personnel and distributing delegated responsibility and corresponding authority in such efficient ways that he can reserve ample time for supervision.

(3) Too often the principal of a large high school, either from necessity or from taste and adaptability, gives too much attention to executive and clerical duties and to disciplinary cases, and does not adequately perfect his knowledge and skill in the theory and practice of classroom management and instruction. Thus, he may fail to give effective supervision because the teachers feel that his suggestions and criticisms lack that specific analysis and definite constructiveness that is necessary to inspire confidence and to enlighten them specifically as to wherein and how they may improve their technic.

ORGANIZATION AND DIRECTION IN THE CENTRAL HIGH SCHOOL.

In the second section of this chapter we have discussed specifically the changes in curriculum, content, and organization which, in our judgment, should be made in the Central High School. Another suggestion looking toward future development may be made appropriately at this point. There seems to be a considerable number of pupils who would desire to take in the high school more advanced courses in science, mathematics, and economics than can

be offered under the 8–4 plan or the 6–3–3 plan, which have already been mentioned. For example, it is known that certain groups of boys would like to take at home advanced courses in vocational electrical wiring and construction, automobile work, industrial and pharmaceutical chemistry, architecture, and surveying; and it would be a great advantage to the city if such courses were offered as advanced electives for those who might avail themselves of them by taking a post-graduate year. Such courses as are known to be wanted by a sufficient number of pupils to justify it economically might be offered, provided the few necessary additions to the teaching force and equipment could be made. It is believed that this would soon demonstrate the desirability of adding two years of graduate work of collegiate grade, thus providing for a municipal junior college. It would be quite easy to pass ultimately from the 8–4 plan of organization which is now in operation, or the 6–3–3 plan, which we now recommend, to the 6–4–4 plan, which would include six years of elementary work, four years high school (grades 7 to 10) and four years junior college (grade 11–12), and freshman and sophomore college. Such an organization would enable many pupils to complete the first two years of college at home with greater economy than they could at distant institutions. Also it would enable many who otherwise could not afford to go away to college to obtain two years of college work. These would enter the commercial, industrial, and professional life of the community with two more years of training than such persons are now getting, and this would benefit the community, because of the greater efficiency of these young people due to their better training. We believe that this suggestion is well worth careful thought on the part of the community.

THE ORGANIZATION OF PUPILS.

Regarding the organization of the pupils, it seems desirable to make several comments.

The present method of organization in classes and courses appears undesirably loose and indefinite on account of the fact that pupils are allowed so much freedom in choosing subjects and even in choosing teachers. Pupils with widely different aims, interests, and capacities are thus found in the same recitation sections. This condition would be largely corrected by the adoption of the curriculum organization that we have recommended, especially if each group of pupils pursuing a given curriculum were organized separately and the recitation sections of each curriculum were assigned to a corresponding definite group of teachers. With this arrangement and with a reduction of failures and repeaters that could be brought about by better directions and supervision, the grade or class groups each would represent something definite and coherent,

and so also would the curriculum groups within the class organizations. Class organizations could then be used as large and well assorted working units for cooperation in the larger community enterprises which the school from time to time takes on.

The extent to which the school has been organized to assist in patriotic work and other enterprises of general community interest is very creditable, and there can be no question that education in civic cooperation of great value to the pupils as well as work of value to the Nation and community have resulted. It is believed that class organizations would make such community cooperation even more effective.

As to supplementary and extra curricula students activities, the school seemed to us to be somewhat underorganized. Student activities seem to many persons a mere nuisance, productive of nothing of value to the students, and only interfering with "the real work of the school." This view is passing; and we are coming to realize that these student activities, provided they are wisely chosen and properly directed and supervised, afford harmless recreation and serve to broaden the interests, sympathies, and intelligence of the participants. Moreover, a fact still more important, they afford the best and most natural means of practice for the pupils in cooperation and team work for the accomplishment of worthy purposes. Therefore they are of great value as means of civic training and education. But they must be carefully selected; and they must be efficiently organized and officered, and carefully and wisely controlled, directed, and supervised. The following are some of the types of student organizations that are useful for physical, intellectual, and recreational development in a large high school if operated under carefully drawn rules which prevent any one student from dissipating his or her energies by belonging to too many of them: School and class athletic teams; school chorus; school orchestra; boys', girls', and mixed glee clubs and class quartets; boys' and girls' debating societies; dramatic club, art club, science club, class literary, and musical societies; and foreign-language clubs.

THE SIZE OF CLASSES.

With regard to the number of pupils in a recitation section, it is a generally accepted principle that for the best work in the classroom and for the most economical use of the tuition funds, classes should not be either very large or very small. In a subject with a section of five pupils, taking one-fifth of the time and energy of a $1,500 teacher, the tuition cost per pupil per year for that subject is $60, which is certainly extravagant, not because the teacher is overpaid, but because his labor, for which the community pays, is

unfairly apportioned among the students, some of them getting more than their equitable share of it. If many of these small classes occur in a school, one of two consequences follows: Either more teachers are employed than ought to be, or compensation is brought about by making other classes too large. This is harmful in two ways:

First, instruction in oversized classes is necessarily inefficient, for either each pupil gets too little individual attention or else the teacher is overburdened, and as a consequence his preparation suffers and he also becomes so wearied as to lose snap and efficiency.

Second, the distribution of the tuition fund is again unfair in that each pupil in a large class gets less than his share of what the tuition fund is supposed to buy. For example, in a class of 40 pupils occupying one-fifth of the time of a $1,500 teacher the tuition cost per pupil per year is $7.50. Thus pupils in a section of five receive from the people's tax money eight times as many dollars per year in the form of tuition as pupils in a class of 40. Would any democratic community permit such unfairness if it knew about it? It is the business of a school survey to find out such things if they exist and let the community know.

The number of pupils in recitation sections in the Central High School, as reported by the teachers, is as follows:

Number of pupils in the class:	Number of classes.
1 to 4	1
5 to 9	8
10 to 14	25
15 to 19	32
20 to 24	63
25 to 29	64
30 to 34	43
35 to 39	20
40 and over	13
Total	269

It will be seen from this table that out of 269 sections 9 have fewer than 10 pupils and 25 others have fewer than 15 pupils. Thus 34 out of 269 classes, or 12.6 per cent or about one-eighth of them, are so small as to be both unfair and extravagant; 127, or a few less than half of the classes enroll from 20 to 29 pupils, about the right numbers, in general, for the best economy and efficiency. Forty-three classes are at the limit of size, according to the standards of the North Central and Southern Association of Colleges and Secondary Schools, or a little over it, while 33 classes, again about one-eighth of the whole number, enroll 40 or more pupils, and are at the other extreme of unfairness.

In the gymnasium, it might be argued, large classes can be efficiently handled; and this is true, but the enrollments of the girls' gymnasium classes range all the way from 20 to 103. Surely 20 is too small a number for efficiency and economy excepting in a class in corrective gymnastics where much individual attention is needed, and surely excepting for exhibition rehearsals 103 is too large for training purposes. Many of the large classes are in subjects requiring much drill work in which large numbers are not so serious as in subjects requiring much thought work; but although the range is not so great the same sorts of extremes in numbers enrolled occur in these classes also. For example: Expression, 18 to 118; algebra, 10 to 39; science, 9 to 42; French, 2, 5, 10 to 31, 34, 35; domestic science, 6 to 27; domestic art, 7 to 24; English, 16 to 39; public speaking, 3 classes, 8, 9, 16; history, 12 to 38.

Our attention has been drawn to the fact that these are total enrollment figures, and that many of the pupils enrolled have dropped out, so the large classes are now actually smaller; but this condition which diminishes the evil at one end increases it at the other, for it also makes the small classes smaller.

These conditions are due largely to defects in organization, most of which probably grow out of giving too much liberty in electing studies. There will always exist some of these inequalities that can not well be avoided; but when one-fourth of all the sections are either much larger or much smaller than they ought to be (accepted standard 25) this condition calls for earnest and careful study to the end that the funds for the high school shall be more wisely and fairly spent.

THE ORGANIZATION OF THE EXECUTIVE AND TEACHING STAFFS.

The organization of the executive and teaching staff might be much improved. Evidently the clerical work falls short of what is and should be desired. We do not regard it as our function to sit in judgment on individuals; but to analyze conditions as a basis for judgment by those who are responsible for conditions. If the clerical work falls short of satisfactory efficiency this means either that there is insufficient clerical force, or those who are doing it lack the requisite efficiency.

There are employed in the school a secretary and a stenographer. In most large schools one clerical assistant who is a business-trained secretary and also a stenographer and typist is employed, and is able to do all the clerical work of the school that is not assigned to the assistant principals and principal's office. In our judgment, much of the school's clerical work should be done by pupils of the business department under the direction of the secretary and the commercial teacher. This would lighten the work of the secretary,

and also afford real practical training for pupils who thus assist. The confidential clerical work should be done by the secretary. We can not see why the secretary, if thoroughly trained and competent, should not be able to do all the clerical and stenographic work, provided it is organized on the principles of modern business efficiency.

We found an elaborate system of blanks for the purpose of collecting and collating data. Most of these seemed good, but from our necessarily hasty study of the recording system we think that the blanks and the system might with careful study be so improved as to cut out a large amount of unnecessary transcription of numerical data, with the result of saving work and increasing accuracy. In securing clerical and stenographic service one good salary for a business-trained official will secure better service than two poor ones. It is poor economy to burden teachers (or assistant principals) with much clerical work. Presumably they are trained as educators and not as clerks. These are widely different functions and require very different kinds of training.

In a school as large as the Central High School, there should be not one assistant principal, but two—a man and a woman. These should be persons of culture and a broad and sympathetic human outlook, peculiarly adapted by temperament and sympathetic insight to deal with boys and girls concerning their behavior and purposes. But further than this they should be trained above and beyond the other teachers in the theory and practice of secondary education. They should be real vice principals, either of them capable of running the school in the absence of the principal, and capable of executing any details of his policies which he may from time to time delegate to one or the other of them. Each of them should teach from one to three sections, in order to keep in intimate touch, through daily experiences, with the teachers' problems. They should not be burdened with much clerical work, that with which they are charged being of the administrative type such as can not be intrusted to clerks or secretaries. Their chief function should be the handling of the individual discipline cases of the boys and girls, respectively; but they should also assist the principal in such executive, directive, and supervisory work as he may delegate to them. They ought especially to be able to carry out or direct educational experiments in methods of instruction and class management, and to use educational measurements in testing the results. They should be the chief advisors of the principal in framing his educational policies and in perfecting the details of organization in all departments. In choosing such officials great care should be used to secure persons of training, sympathy, and tact; and the salaries paid them should be ample for securing service requiring such high qualifications.

We have already mentioned the advisability of securing persons of more than usual qualifications for heads of the various departments of instruction. These positions should be filled by promotion where persons of proved qualifications for them are found in the school; but if within any department no teacher is found who does not fully measure up to high standards of scholarship in his specialty combined with a high degree of initiative and leadership, or if there is no one who can rapidly develop these qualities, there should be no hesitation about bringing in persons from outside the system to fill these positions. Heads of departments should be thoroughly familiar with the latest and best special methods in their subjects, should be capable of making, directing, or supervising educational experiments and measurements, and should be capable of directing and assisting the teachers of their departments in their round tables and special pedagogical studies. They should be especially alive to the needs of their departments with relation to equipment; and the selection, ordering, and purchasing of equipment should be one of their special types of duty. They should also have a large voice in the selection of textbooks, and should assist the principal or assistant principal in such work of organization, direction, or supervision, within their departments as may from time to time be specially delegated to them.

THE LIBRARY AND THE LIBRARIAN.

The school library and librarian should be under the immediate direction of the principal, and just as much responsible to him as any teacher. She should be coequal with the teachers, and should cooperate with all of them, but especially with the heads of departments. The librarian should be a successful teacher who has had thorough library training, and should be able either to give or to supervise a series of lessons in the use of libraries and reference works which should be a feature of the English courses in each of the high-school grades. The supervision and operation of the library should belong entirely to her under the cooperative direction of the principal and the chief librarian of the city or school system.

There should be an abundance of good reference and reading books appropriate to the needs of pupils in each of the departments. In most libraries the assortments of books on science, agriculture, geography and travel, civics, and vocations is altogether too meager; and reference work is too seldom assigned and followed up in these subjects. The pupils should be trained to the reading habit in these lines no less than in literature and history. There should be special reading tables in the rooms of each department where books and periodicals withdrawn from the library may be kept for ready study

and reference during the special periods when they are needed. Several copies of books most often used should be installed, so that there may be at the same time a copy of each book that is much needed in each of the several rooms assigned to a large department. The departmental library plan should be developed in the Central High School, as the library room is so small that all the library work of so large a school can not be efficiently carried on in it.

THE JANITOR.

The janitor should be under the direction and control of the superintendent of buildings; but the principal of the school should have unquestioned directive and supervisory authority over him to the extent of seeing that his work is always properly done, and reporting him to his direct superior, or to higher authority if necessary, in case he does not cooperate satisfactorily. (See also Chapters II and III.)

AN ESTIMATE.

As compared with the complete type of organization that we have outlined, the present organization of the Central High School has not reached the highest state of efficiency, though in general it should not be regarded as inefficient. This has been the first year of the administration of the present principal. He has been working industriously on organization problems and has accomplished a commendable amount in the improvement of many important details pertaining to the running of the school. He has a broad and intelligent outlook on the modern problems of secondary education and is keeping in touch with the best sources of information concerning all these problems as related to the school. He appears to be most kind and tactful in his dealings with the teachers, and they in turn, without many exceptions, appear to be loyal to him. A general atmosphere of mutual confidence and respect that is fundamental to harmonious relations was quite evident to the observers. This augurs well for the future success of the work under the present administration.

We believe, and recommend, that the organization should be shaped as rapidly as is feasible toward the complete type that we have outlined above. Complete and efficient organization is fundamental to the accomplishment of all the other improvements that are needed.

The principal's work in directing the various activities of the school appears to be carried on about as efficiently as it can be without such perfecting of the organization.

Lack of intimate and efficient supervision, in our opinion, is responsible for most of the weaknesses that we have pointed out.

Better organization, involving more assistance by assistant principals, heads of departments, and a secretary, who are competent to give the kinds of high-grade assistance that are needed, will release the principal from many details that now encroach on his time and energy. Freed from these less important but entirely necessary matters, the head of the school will be able to give his entire attention to working out administrative plans and educational policies, to directing the heads of the various administrative branches of the organization, to maintaining the contacts of the school with parents and community, and to personally supervising the work of the classrooms.

Such personal supervision should result in knowledge as to just where the weak spots in the teaching exist, as to what their specific causes are, and as to what changes in methods should be brought about. The kinds of faults that are widely prevalent in the school should be discussed in round tables with all the teachers present, and a clear consensus of opinion developed as to better methods. The kinds of faults that are peculiar to individual teachers should be tactfully discussed privately with the individuals who have them. In all cases, criticism should be constructive and tactful, always showing clearly the better way, and inciting the teacher to try it of his or her own volition, giving it a fair and impartial test. The supervisor's best and most inspiring work consists in pointing out the specially good or excellent things, some of which can be found in the work of almost every teacher, and showing how the adoption of similar methods for accomplishing similar results would improve the general level of instruction and management. Nothing inspires a corps of teachers more than feeling that if any one of them is doing a particularly good piece of work in any line, he or she is going to receive just credit and approval for it, and that it may be adopted freely and without jealousy by others to the end that it may contribute more potently to the general excellence and efficiency of the school. The supervisor who knows how discriminatingly to appreciate good work and commend it justly and emphatically without suspicion of flattery or palaver is sure to have the loyal and devoted cooperation of those whom he supervises.

MORE MALE TEACHERS NEEDED.

One of the urgent problems of the administration is to get into the school as early as possible more representatives of the highest type of manhood. Of the 53 teachers in this school only eight, aside from the three military instructors and the principal, are men. Counting these, the ratio of men to women is only 12 to 45 in the entire corps, or approximately one man for every four women. The desirability of having in a high school teaching staff as many

men as women is so evident and so generally recognized among students of education that argument seems unnecessary. We recommend that when new teachers are to be appointed for the high schools, an earnest search be made for men to fill the position, and that this policy be continued until the numbers of men and of women in the corps are approximately equal. Only men of the highest qualifications should be considered. It is harder to get such men for the schools than it is to get equally able and well-trained women, because men of the right qualifications can command higher salaries in other occupations than it is now common to pay them as teachers in high schools. To secure men of the quality that is needed, higher salaries than heretofore will undoubtedly have to be paid. (For a suggested salary schedule, see Chapter II of this report.)

SUPERVISED STUDY AND THE SOCIALIZED RECITATION.

The time schedule, as now organized, provides for five recitation periods of one hour each, in order to allow for a certain amount of supervised study. The fact that there are so few periods in the school day makes all phases of the problem of assignments of pupils to recitation sections much more difficult. Undoubtedly this is one cause of the bad inequalities in class enrollments, which we have discussed above. It increases the number of conflicts in studies, thus preventing many pupils from getting certain studies in the year for which they are scheduled. We believe in "supervised study" when it is efficiently carried on according to definite and approved methods, but we believe that it is most necessary for the younger pupils. The eleventh and twelfth grades should not need it. In our opinion it would be better to organize the schedule on the basis of eight periods daily of 45 minutes each, providing double periods for supervised study for pupils below the eleventh grade only. This would also allow double periods of an hour and a half each for laboratory and shop work, a provision which would improve the opportunities for more intensive and economical work in the laboratory subjects.

Supervised study as now carried on in this school under the majority of the teachers is not a success, but it might and ought to be successful with all if they all knew what it means and how to carry it on according to efficient methods. It means teaching the pupils how to study, pointing out the best methods of attack for the different factors of each lesson and directing them in resolving the difficulties for themselves. It does not mean telling them exactly what to do at every step; nor does it mean merely sitting in the room and suppressing overt acts of disorder. This new type of teaching activity should be studied and discussed in the teachers' round table, where methods used and results obtained should be compared and some definite standards of procedure set up for the guidance of all.

One of the best of the newer school methods, which we strongly recommend for frequent use in this school, is the socialized recitation. In this type of class work the recitation section is organized as a club, with chairman, secretary, and critic; and the pupils very largely plan and carry out the recitation by themselves, the teacher keeping in the background but directing, supervising, and assisting whenever necessary to keep things moving efficiently. The pupils take turns asking and answering questions, and as a body sustain the chairman in maintaining orderly and efficient procedure. Such recitations, when successfully carried on under the direction and supervision of a resourceful teacher who has skill in doing it, produce in the pupils a marvelous amount of poise, self-control, initiative, and interest. We recommend that this plan be tried out by the teachers in all subjects to which it may advantageously be applied and that procedures and results be compared and discussed in teachers' meetings for the purpose of perfecting it and extending its use.

STUDENT SELF-GOVERNMENT.

Student participation in self-government is another important feature of the best modern high schools. This means not that the running of the school be turned over to the pupils, or that an elaborate system of court machinery be developed to handle the discipline of the school. It means that under the direction and control of the teaching staff the pupils be gradually trained to take upon themselves more and more of the responsibility for the order and success of all the organized enterprises in which they are employed during the school day. The socialized recitation is a fine example of the right kind of participation in self-government. So are the clubs and societies that we have already discussed. Allowing the pupils largely to manage the auditorium meetings is another. The principle is not to give over control to the pupils, but to put on them more and more responsibility for self-control and self-direction as fast as they show themselves to be sufficiently well trained to carry it successfully. A school in which this policy is carried on usually finds itself remarkably free from disciplinary cases, and this plan also affords the finest of fields for the development of group initiative and individual resourcefulness in the pupils. We recommend that a policy of further extending the pupils' present opportunities for participation in self-government be judiciously tried out in the school.

VOCATIONAL GUIDANCE.

Another great need in the organization of the school is a carefully worked-out plan for educational and vocational guidance, to which every study and every teacher should contribute some share.

The making and operation of the plan should be under the direction of a specialist in educational and vocational guidance who is capable of organizing the teachers for the work and directing them in it. Since many volumes have been written, showing the immense social and economic importance of this work and setting forth the principles in accordance with which guidance plans should be made and operated, it is unnecessary as well as impossible adequately to discuss this feature here. "Vocational guidance" is taught as a subject of study in the school, but evidently it is not functioning here in any such way as the term itself implies, else more pupils would be pursuing it than the few who now are. Vocational guidance is not a subject for pupils to study. It is an organized function for a school faculty to carry on. We recommend that the development of this function of educational and vocational guidance be given very serious consideration and that if feasible it be undertaken under the direction of a specialist to be attached to the supervisory staff of the superintendent. It should begin not later than the latter part of the sixth grade and be carried on through the last years of the high schools. (See also Chapter IX.)

BUILDING AND EQUIPMENT.

The Central High School building is large and generally commodious and well built. It is well and correctly lighted and fairly well kept. Its most serious fault is that most of the rooms are much too large. On the other hand, some of them are too small for classroom purposes though not for committee rooms, rest rooms, etc., for which probably they were originally designed. There ought to be one or two study rooms on each floor, larger than any of the present rooms. The gymnasium is too small for both boys and girls in a school of this size. The best designs provide for two adjacent rooms, which may be used separately or thrown together by raising a rolling partition. The shops are especially commodious and well appointed, and are also well equipped; but there is no machine shop, which prevents development in a line of work that is rapidly growing in importance in Memphis. A well-equipped machine shop is needed.

The auditorium of the school has 1,153 seats. As the entire enrollment is 1,587 and the average daily attendance about 1,200, the auditorium will not seat all the pupils at any one time. Besides being somewhat too small for the number of pupils attending on occasions when it is desirable to have the whole school present, and perhaps also friends of the school from outside, the auditorium has two serious defects. The first is that the school power plant is situated immediately under the stage, and that the noise and vibration of the

engines must interfere seriously with the audibility of speakers' voices. The second is that, as we are informed, the auditorium can not be heated and lighted without running the whole power plant. This fact, on account of the expense, greatly limits the number of occasions on which the auditorium may be used for community center gatherings.

As a step toward the further development of the Central High School building as a community center, it might be well to seriously consider the erection of a separate but adjoining building to house an auditorium and gymnasium, library, and the home economics and art departments, the building to be so planned that only such parts of it as are to be used in any evening gatherings need be lighted and heated at the times when these are held. (See also Chapter III.) The work of administration would be much simplified and a vast amount of wasted time would be saved by the installation of an interroom telephone system, connecting each room with the principal's office. This feature is now regarded as essential to a large high school as is a program clock. The installing of such a system might be done by the students of an advanced class in electric wiring and construction, under the direction of its teacher. This would constitute one of the best types of projects out of which such a class could learn the principles of electric wiring by actual experience in work of commercial value.

The equipment of the school indicates that the school board in the past has intended to provide generously for this school, but much that has been provided has not received the intelligent care that it should have received, and much that has been provided is apparently not used. The school is not so well provided with maps as it should be and those in stock are not so much or so well used as they ought to be. There should be an abundance of physical, political, and economic wall maps and blackboard outline maps, and also historical maps. These should be frequently used in the study of English literature, history, Latin, modern languages, and geography. Cabinets should be provided for these, where they may be kept when not in use.

The walls of the schoolrooms should be adorned with pictures which are both artistic and instructive. The school has such pictures, but there are not so many as there might well be. Attention has already been called to the educative value of artistic and tasteful interior decorations for schoolrooms. This is an enterprise in which the whole school, as well as the pupils who use certain particular rooms, can be enlisted to advantage. Graduating classes and the alumni association, if there is one, as there should be, can be interested in helping, so that every year some valuable permanent feature of decoration may be added.

In almost every department pictures and lantern slides are needed for adequate illustration of the objects and scenes connected with the facts and events that are studied. This is particularly true of geography, history, and science, but scarcely less so of English literature, foreign languages and literature, and civics. Even in economics and mathematics lantern slides of curves and graphs, illustrating the relations that exist between certain sets of facts, are very instructive. In this school some of these types of illustration are used, but their use is far less general and frequent than it might be to advantage. The school has a splendid moving-picture machine and four lanterns, but on account of the scarcity of slides, or, possibly, lack of sufficient enterprise among teachers, the lanterns are less frequently in use than is desirable.

Another feature of illustrative enterprise that is prominent in some schools but not so in Memphis is the museum feature. This may be developed in the fields of art, archeology, history, and science, and a gradually growing collection is always a source of much interest and instruction to young people. Once started such a museum grows rapidly by student's contributions and gifts by friends outside the school.

V. SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS.

1. The high schools of Memphis are attracting and holding for continuous training a smaller proportion of the city's youth than is desirable. (See also Chapter II.)

2. The high-school accommodations are insufficient to provide for larger numbers than are now using them.

3. Among those who are attracted to the high schools there are too many failures, and too many who drop out before completing their curriculum. (See Chapter II.)

4. The path along which the city must move in order to improve this situation involves serious consideration of the following educational policies:

(*a*) Revision of the elementary curriculum so as to make it broader, more thorough, and more vital. The teaching should be improved through more thorough supervision.

(*b*) More care, better testing, and better judgment should be used in promoting pupils to the high schools. Pupils unfitted for high-school work should be discovered earlier and given work in special courses of training for the kinds of skill that they can acquire. They should not be allowed to enter and clog the high schools.

(*c*) Steps should be taken to provide more and better high-school accommodations, especially for the vocational high school and the

colored high school. Probably the most immediately effective step would be the establishment of two or more junior high schools, including grades 7, 8, and 9, to be housed in adequate modern buildings designed for the purpose.

(*d*) The establishment in the seventh and eighth elementary grades and in the high school of an efficient system of education and vocational guidance, which shall enlighten the pupils concerning the nature and purposes of the high-school studies and facilities, and concerning the various industries and occupations—their nature, the opportunities they afford, and the kinds of ability and training needed for success. The importance of thinking about the question of their future careers and of trying to find out what their capacities are should be impressed on the children beginning about the age of 12 years. (See also Chapter IX.)

(*e*) The carrying out of certain reorganizations and improvements in the curriculums, teaching, and administration of the high schools, discussed in this chapter and in the chapters on Civic Education and Science Instruction. (See Chapters VI and VII.)

5. The teachers in general rank high in personality and intellect and in most of the desirable factors of leadership and cooperation; and nearly all of them have intelligent conceptions of educational values and of the larger aspects of socialized methods of teaching. On the other hand, nearly all of them are unskillful in most of the ordinary phases of class organization, management, and instruction, and in the development of group initiative. There is not so much nor so good teamwork among either teachers or pupils as, with their other excellent characteristics, it is evident that there might be. The right disposition is there, but the mechanics of the class direction and control have not yet been well worked out. (See also Chapter II.)

6. The room conditions are not so well attended to as they should be. (See also Chapters II and III.)

7. As means for improving these conditions we recommend the following:

(*a*) That effective provision be made for close and thoroughly expert supervision of the classroom work in every department. (See also Chapter II.)

(*b*) That departmental and general teachers' round tables should be held at frequent intervals, at which departmental and general problems of teaching should be discussed by the teachers, by department heads, by the principal, and occasionally by experts and specialists called in from outside the schools.

(*c*) That for heads of departments only persons who have proved their ability to lead others in departmental teamwork, and in the

study and evaluation of methods of teaching shall receive permanent appointments.

(*d*) All teachers, but especially department heads, should be required to study systematically standard books and articles from current educational and psychological journals on modern educational problems, and especially on the principles and methods of high school teaching.

(*e*) It would be wise for the school board to appropriate each year a small amount with which to purchase for a teacher's alcove in the high-school building several copies each of such books as McMurry's How to Study, Dewey's How We Think, Dewey's Democracy and Education, Thorndike's Principles of Teaching, Thorndike's Brief Course in Educational Psychology, Hollister's High School and Class Management, Johnston's Modern High School, Monroe's Principles of Secondary Education, Inglis's Principles of Secondary Education, Twiss's Principles of Science Teaching, Judd's Psychology of the High School Subjects, Parker's Methods of Teaching in High Schools, Colvin's Introduction to High School Teaching, and Monroe's Educational Measurements, or Ruggs's Statistical Methods in Education. These, together with such teacher's professional journals as the School Review, the Educational Review, School Science and Mathematics, the English Journal, the Classical Journal, the Journal of Geography, the General Science Quarterly, etc., should be made easily accessible to the high-school teachers. These books and journals should be reviewed by committees, and reports on them and chapters or topics from them should form subjects for discussion in the general and departmental round tables.

(*f*) Teachers should be encouraged, and in some cases required to attend summer sessions at colleges for special courses in their subjects or for special studies in methods. Reports on such work should also form topics for discussion in the round-table meetings.

(*g*) Teachers should be encouraged to make experiments in methods and use educational measurements for testing the results of their work.

(*h*) The teachers should be given opportunity to visit one another's classes and notes taken of the observations made during these visits should occasionally be made the subject of impersonal round-table discussions. These should emphasize the good points observed rather than the faults.

(*i*) The teachers should be required to make written plans for their lessons. A plan book especially suitable for high-school teachers is published by the Dobson-Evans Co., Columbus, Ohio.

(*j*) There are a few cases in which the teachers are not well qualified to do the most progressive and effective work in the subjects

they are teaching. It would be wise in these cases to shift these teachers to other assignments in which they possibly could do better work, and assign the former classes to teachers who are especially trained and qualified for teaching them.

8. Important curriculum reorganizations are needed and should be carried out.

9. The present organization of personnel is imperfect and should be improved as rapidly as possible.

10. The great outstanding need of the school is more and better supervision of instruction and class management, and more systematic study of the applied psychology of teaching by both teachers and supervisors.

11. The numbers of men and women in the instruction staff should be equalized as rapidly as possible; but only men of the best qualifications should be employed.

12. The supervised study feature should be continued, but should be made more efficient; and probably the time schedule should be remodeled.

13. Other modern features of administration known as the socialized recitation, and pupil participation in self-government, which are in operation to a very limited extent, should be further developed, expanded, and perfected.

14. The school needs more equipment of various sorts; and better and more frequent use should be made of that which it already possesses.