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FOREWORD

A SCHOOL which merely meets the demands of yesterday or even those of today, is not enough in as rapidly a changing civilization as that in which we are living. An analysis of the economic, social, and industrial changes which are now in process suggests that the public school curriculum must be built for a new world, if it is to function in the lives of children today and tomorrow.

The 1,279 high-school course-of-study bulletins, published since 1920 and listed in this Bulletin, are objective evidence of the tremendous effort which secondary school people are making to modernize the traditional high-school curriculum. Much credit is due them. May their efforts continue and expand until every school system in America gives thought and study to the problem of developing vital courses of study, adapted to present growth needs of children and rich in present and future social values.

By marshalling some of the more significant facts as to the recent changes in everyday life, and by pointing out recent trends in secondary school development, this Bulletin furnishes in succinct form material needed as a background for those developing high-school courses of study.

The material relative to the differentiation of courses of study for pupils of varying levels of ability is particularly timely. The full democratization of the high school waits upon the creation of a series of courses designed to offer every high-school pupil, whatever his innate mental, physical, moral, or emotional talents may be, the particular educational opportunity which promises most in developing those talents.

Those who are striving to base curriculum revision less and less upon individual whim and guess-work and more and more upon pooled experience and scientific evidence will especially appreciate the section dealing with research and trends in the various secondary school subject fields.

These sections, along with selected references to other materials bearing upon the phases of curriculum construction touched upon in this issue of the *Research Bulletin*, make it an indispensable handbook for those engaged in the great work of vitalizing the high-school curriculum.

J. W. CRABTREE, *Secretary*
National Education Association.

Education for a Changing Civilization

If philosophy declines to observe and interpret the new and characteristic scene, it may erect a well equipped gymnasium wherein to engage in dialectical exercises; it may clothe itself in fine literary art. But it will not afford illumination or direction to our confused civilization. These can proceed only from the spirit that is interested in realities and that faces them frankly and sympathetically—JOHN DEWEY.

Will a nineteenth century school train effectively for twentieth century life?—The Committee of Ten¹ in 1892 made its well known report relative to the secondary school curriculum. Are the recommendations of that report valid today? Or do the social and economic changes of the past forty years demand that new goals be set for secondary education, and that new curriculums and courses of study be developed? What answer is suggested by even a cursory examination of industrial change?

Owen D. Young, writing of the electrical industry in *A Century of Industrial Progress*² states that: "Where civilization was once static, it has become dynamic; so much so that our chief problem is no longer to adjust ourselves to a well-defined system but to change."

Since 1890 science and the machine have reconstructed our industrial life. We are spending approximately ten billions of dollars a year for automobiles, something that did not exist thirty years ago. It is estimated that the automobile industry now gives employment directly or indirectly to more than 7,000,000 people.

Fifty-one years ago the world's entire telephone plant, the instrument Bell invented, could be held in a man's hand. Now there are more than 17,000,000 instruments, 350,000 employees, 25,000,000 miles of wire and a total plant investment of \$2,000,000,000 in the United States. Today the human voice can be carried over practically any terrestrial distance.

The electrical industry of today, with a book value of \$25,000,000,000 and a generating capacity of twenty million horse-power, goes back to the single plant in Pearl Street, New York, forty-seven years ago, when Edison put into regular operation his generating sta-

tion and distribution system, which lighted 400 lamps.

Such inventions as the automobile and the telephone have also been responsible not only for profound changes in our industrial life, but also have modified social institutions such as the community and the family, and have affected far-reaching changes in social customs. Today a baby often learns the word, "airplane" before it learns the word, "horse."

Below are listed a few of the important discoveries made in each year since 1890. This list is illustrative. It emphasizes the cumulative character of the advance which has taken place in science and industry in a single generation.

Illustrations of Significant Discoveries Since 1890

- 1890—The linotype, a machine designed to do the work of both type setting and type casting, was patented by Mergenthaler. The first successful linotype machine had been completed and put into the composing room of the New York Tribune in 1886. Since then it has come into general use by newspapers and printing offices throughout the world.
- 1891—Berliner patented his loose contact telephone transmitter or microphone.
- 1892—The automatic telephone was patented by Strowger.
- The "Hercules" rail, weighing 127 pounds to the yard, was put into service on railroads.
- 1893—The Diesel internal-combustion engine was invented.
- 1894—The modern steel freight car became a recognized unit of American railway service.
- Successful inoculation against typhoid fever began. Diphtheria anti-toxin was also introduced.
- 1895—Roentgen discovered X-rays.
- Seldon patented principles involved in the automobile, namely, the application of an internal combustion engine to the propulsion

¹ Report of the Committee of Ten on Secondary School Studies, Charles W. Eliot, Chairman. Published by the National Education Association and by the World Book Company, 1894. 249 pp.

² See: *A Century of Industrial Progress*, edited by Frederic William Wile. Chapter XXII.

- of a road vehicle. Up to 1896 automobiles were prohibited from running on the English public roads faster than four miles an hour, and even then the law required that a man should walk in front waving a red flag.
- Edison produced his improved phonograph by which markings were made on the surface of wax by a fine steel point.
- 1896—A serum was prepared to prevent typhoid fever.
- The steam turbine was patented by Curtis and the monotype machine by Lanston.
- On April 27, 1896, New York had its first motion picture show. Pictures were projected on a screen at a theatre on Twenty-third Street.¹
- 1897—The identification of electrons by J. J. Thompson.
- 1898—Radium was discovered by the Curies.
- Santos Dumont equipped a small dirigible with a gasoline motor and made spectacular flights.
- 1899—Michael Pupin announced the theory underlying his long distance telephone. By 1901 he had brought his system to such perfection that it was acquired by the Bell Telephone Company and by German telephone interests.
- Luther Burbank developed the "sugar" prune—one in his remarkable series of new plums and prunes.
- 1900—Walter Reed and his associates proved that yellow fever was transmitted by mosquitoes.
- R. E. Olds invented a type of gasoline automobile.
- A successful sub-marine boat was invented.
- 1901—Marconi flashed signals by wireless across the Atlantic.
- Taylor and White secured a patent on high-speed steel.
- 1902—Rutherford proved that radium gives off active emanations.
- The first trans-atlantic wireless message was sent.²
- 1903—Henry Ford produced his first Ford automobile.
- On December 17th, at Kitty Hawk, N. C., Orville and Wilbur Wright made their first successful flight—approximately 120 feet in twelve seconds.
- 1904—Fessenden patented his plan of radio-wave production.
- 1905—Einstein took up the question as to what might properly be understood by time and space—and announced his theory of relativity.
- 1906—A radio crystal detector was patented by Dunwoody.
- 1907—McCollum began studies in nutrition, which later made him one of the important contributors to the vitamin hypothesis.
- 1908—All-steel passenger cars on railroads came into use about this time.
- On April 11th, Delagrange broke the European record by flying two and a half miles "without once touching ground and some distance farther with only two slight touches."
- 1909—Mary Pickford took part in her first "movie."
- First call for help was flashed from the ocean by a wireless operator when the steamship, "Republic," met in collision with the Italian Ship, "Florida," off Nantucket.
- 1910—Goiter was cured in hospitals by the use of iodine.
- 1911—Curtiss developed, during 1911-12, a hydro-airplane and flying boat, capable of rising from and landing on the water.
- During the period 1910-1921 over two and a half billion dollars were spent in road construction in the United States. During this same period the consumption of crude oil in the United States arose 68 percent.
- 1912—Edison gave a demonstration of a "kinetophone" or talking "movie."
- Adolph Zukor presented to the motion picture world the idea of "famous players in famous plays."
- 1913—The tungsten filament was patented.
- 1914—A military tank was invented by General E. D. Swinton.
- Edison produced synthetic carbolic acid.
- In September, taxicabs and omnibuses of Paris were mobilized to carry Gallieni's army out from the capital to drive the invading forces back from the Marne.
- 1915—On September 29, 1915, the same year in which the first continental telephone line was completed, a conversation over the wireless telephone occurred between New York and San Francisco and was heard in Panama and Honolulu.
- 1916—The Browning machine rifle was invented.
- 1917—Max Mason invented a submarine detector; and Mendenhall and Williamson an airplane compass.
- Radio telephony was employed as a means of signaling in military operations.
- 1918—On May 15th, the first air-mail route in the United States was opened between Washington and New York, in cooperation with the War Department.
- 1919—From 1914 to 1919, the automobile industry rose from eighth to third place among American manufactures. It was first in 1925, when over four million motor vehicles were manufactured.
- 1920—Broadcasting was born about this time. The first radio telephone station, KDKA, for regular mass communication service, was erected at East Pittsburgh.

¹ Today 225,000 people are permanently employed in the motion picture industry. It is estimated that in the United States 100,000,000 people go to the movies weekly. Every day approximately 25,000 miles of motion pictures are handled by the Motion Picture Producers and Distributors.

² Soon it became compulsory, by international law, for all sea-going vessels carrying 50 persons or more to carry wireless facilities and competent operators.

1921—Trans-continental air-mail route opened. In 1926 the total number of miles covered by the U. S. air mails was 2,256,000.

1922—Diabetes patients cured by insulin.

1923—Two new anaesthetics—acetylene and ethylene—were developed.

* The tomb of King Tutankhamen was opened on February 18th.

1924—The "Los Angeles" made a non-stop voyage from the heart of Germany to Lakehurst covering the five thousand miles in 81 hours.

1925—Richard Evelyn Byrd and Floyd Bennett reached the North Pole via airplane.

A process for sending photographs by telegraph or telephone was invented in the Bell Telephone laboratories.

1926—The world's fastest cable, the nineteenth to span the Atlantic, was completed in September. Through the use of permalloy it has been given a speed of 2,500 letters per minute.

The world's longest tube, running 16½ miles from North to South London, and serving 2,500,000 people, was opened September 13th.

1927—At 7:52 A. M. on May 20th, Charles A. Lindbergh, flying alone in a monoplane with five sandwiches and a canteen of water for refreshment, set off on a non-stop flight for Paris. He completed the 3,610 mile flight in 33½ hours.

During 1927, the Atlantic was crossed by four different planes and the Pacific Ocean from California to Hawaii twice.

A regular trans-atlantic radio-telephone service was inaugurated.

1928—Large commercial use was made of television.

1929—Airplanes are refueled in the air, and a record of over 400 hours of continuous flight established.

The German liner, Bremen, arrived in New York harbor July 22nd, after crossing the Atlantic in 4 days, 18 hours, and 17 minutes.

These developments are as amazing as Aladdin secured by rubbing his copper lamp. Rather than exhausting our creative ingenuity, however, they ought to suggest the enormous possibilities which lie ahead. The extent to which research has become a recognized and valued aid to industry in 40 years is indicated by the fact that the United States is now spending approximately \$200,000,000 a year for industrial research. This looks toward

direct modification of only one phase of life, the industrial.

The secondary school's place in the shifting American scene—As civilization changes, our secondary school curriculum should strive not only to keep pace, but to lead the way. A static school in a dynamic civilization is an anachronism. He who commands the secondary school to stand still while civilization moves on would relegate it to a place of insignificance.

According to the Sixth Yearbook of the Department of Superintendence,¹ a school which aims to fit pupils to take their places in a static world is hopelessly inadequate. It is essential that curriculum builders realize that just as the world today in many ways differs from that of forty, or even ten years ago, so we may expect further and perhaps accelerated change in the future. The conception of education as preparation for life that is constant and unchanging is untenable. We do not know what life is to be even a few years hence. A new conception of education is needed. The school should help the pupil to achieve poise and balance in the midst of change.

Progress made by the secondary school—Is the secondary school measuring up to its responsibilities? Is it being modified to meet the needs of our changing civilization? How does the modern high school differ from that of 1890? The chart on pages 180 and 181 is a partial answer to this question.

Whether the changes within our high schools have been rapid or extensive enough to meet the new demands is doubtful. In the majority of high schools they probably have not been. Hence secondary school curriculum and course of study construction and revision is needed in most school systems.

The need is for a curriculum suitable for a rapidly changing civilization, with large social, spiritual and industrial values, and sufficiently differentiated to meet the needs of adolescent youths with varying levels of ability, social and economic backgrounds, and hopes for the future.

¹ Department of Superintendence, *The Development of the High School Curriculum*, Sixth Yearbook, Washington, D. C. National Education Association. p. 41.

Then and Now in

Changes from

The High Schools of 1890

Attended by:

The intellectual and social elite—a homogeneous student body with parents in a preferred economic, vocational, or social position.

Purpose:

To select pupils of unusual capacity and background and to prepare them through a traditional academic curriculum to exercise cultural, social, and economic leadership.

Location:

High schools were seldom found except in the centers of population. There were only 2,526 public and 1,632 private or a total of 4,158 secondary schools in the whole United States.

Enrolment:

The high-school enrolment was but 1.6 percent of the total elementary and secondary school enrolment.

	In Public Schools	In Private Schools	Total
Boys -----	85,451	47,534	132,985
Girls -----	116,351	47,397	163,748
Total -----	201,802	94,931	296,733

Organization:

The 8-4-4 plan with a sharp break both as to content and method between the eighth and ninth grades with heavy elimination of pupils during the ninth year.

Curriculum:

Offered a single curriculum composed of subjects organized on a logical basis and intended according to the Committee of Ten, of the National Education Association, for "those boys and girls economically and intellectually capable of attending the secondary school." The acquisition of this subject-matter was considered more or less an end in itself.

Methods:

Passive absorption of text-books—memorization of facts as ends in themselves. Teachers considered that their task had been completed when they had rigorously applied the logically organized subject-matter of a static and academic curriculum. According to the Committee of Ten, reporting in 1892, "Every subject taught at all in a secondary school should be taught in the same way and to the same extent to every pupil so long as he pursues it."

Results expected:

A high school was successful if it succeeded in eliminating all but the intellectually elite and gave the select few who went on to higher institutions of learning the preparation which fitted them to make high marks in college or university.

Secondary Education

1890 to 1929

The High Schools of 1929

Attended by:

All the children of all the people—a heterogeneous student body drawn from every group in the community, with corresponding diversity of background, capacity, and future prospect.

Purpose:

To take all pupils including those of average and limited capacity and background and to discover for each one the particular curriculum which promises most for him and for society in liberal education and preparation for practical life.

Location:

High schools are easy of access to all youths, except those residing in backward communities. In 1926 there were 17,710 public and 2,350 private, or a total of 20,060 high schools in the United States.

Enrolment:

In 1926, the high school enrolment was 15.2 percent of the total elementary and secondary school enrolment.

	In Public Schools	In Private Schools	Total
Boys -----	1,445,886	114,617	1,560,503
Girls -----	1,619,123	133,459	1,752,582
Total -----	3,065,009	248,076	3,313,085

Organization:

Rapid development of the 6-3-3 plan and other modifications of the 8-4-4 plan so that the transition from the elementary to the secondary school is smoother and elimination of pupils is materially reduced.

Curriculum:

Offers a series of curriculums, composed of subjects and activities organized on a psychological basis, which according to the Curriculum Commission of the National Education Association, should provide every child of secondary school age an opportunity to develop whatever talent he may possess. Subject-matter is a means to an end and has no place in the curriculum, except as it contributes to the realization of desirable, individual or social ends.

Methods:

Emphasis is placed on learning through active participation in life-like activities, designed to develop desirable habits, attitudes, and ideals. Instruction aims directly at achieving such major objectives as good citizenship, vocational efficiency, and ethical character. According to the Curriculum Commission, reporting in 1928, the presence or absence of a subject in a particular secondary school curriculum and the manner in which it is taught should be based upon a study of the capacities, present needs, and future plans of individual pupils.

Results expected:

A high school is successful if it retains children in school and discovers the particular subject-matter and activities which equip them successfully to meet the varied demands of a complex and rapidly changing civilization.

Curriculum Building for Pupils of Different Levels of Ability

How viewpoints have shifted in the past twenty-five years—The recognition of the significance of individual differences for the secondary school curriculum is almost wholly a development of the last twenty-five years. The objectives stated by the Committee of Ten¹ implied the acceptance of a uniform curriculum. This committee approached the task of curriculum construction from the point of view of the subject-matter specialist. It was particularly concerned with this question: What topics should be included in order to have a systematized and logical treatment of the subject?

Twenty-five years later, the Commission on the Reorganization of Secondary Education² approached curriculum construction from a fundamentally different point of view. It advanced the principle that the larger purposes of secondary education should be the guiding criteria in the selection of materials of instruction, and that these materials would vary according to the capacity of pupils.

The Curriculum Commission of the Department of Superintendence³ maintained that the differentiation of the high-school curriculum should be approached from two viewpoints. First, the child should be studied. The fact must be recognized that children differ greatly in capacities, interest, tastes, and future plans. Second, the child's environment, from which the materials of instruction are drawn, also needs to be studied. Social, economic, and political conditions vary widely in different communities. These variations need to be analyzed in order that their significance for curriculum reconstruction may be discovered.

Modern curriculum revision rejects the earlier assumption that there is one uniform, logical course of study, suitable for all youths.

For this conception, it substitutes the principle that both pupil and community differences need to be studied as to their significance for curriculum construction. It assumes that not uniformity but differentiation should characterize secondary school courses of study.

The development of a secondary school curriculum under the modern principle of differentiation is a far more difficult task than that involved under the principle of uniformity. In the latter case, the one carefully prescribed course may be drafted by a committee of experts, and presumably it is applicable to all children in all communities.

When the principle of differentiation is accepted, the task is one of drafting a series of curriculums, sufficient in number to meet the demands of the widely varying capacities and needs of individual pupils. Furthermore, this series of curriculums must vary in different communities. Hence, curriculum construction, in many of its features, becomes a local rather than a national problem.

Trends in the development of differentiated curriculums and courses of study—The development of differentiated secondary school opportunities inevitably requires an expansion of the number of units of work offered on the secondary school level. The Committee of Ten¹ in 1892 dealt with 40 subjects; the California Committee of Fifteen⁴ in 1922 considered 147 subjects.

Counts⁵ found that the total number of units of work offered in the high schools of each of fifteen cities in eleven great divisions of subject-matter varied from 51 in Pueblo to 127½ in Los Angeles. The number of units of work offered in the high schools of Los Angeles was as follows: English 9, foreign language

¹ *Report of the Committee of Ten on Secondary School Studies*. Published by the National Education Association and by the World Book Company, 1894. 249 pp. (Charles W. Eliot, Chairman.)

² Commission on the Reorganization of Secondary Education, *Cardinal Principles of Secondary Education*, U. S. Bureau of Education Bulletin, 1918, No. 35, pp. 8-9. (Clarence D. Kingsley, Chairman.)

³ Commission on the Curriculum of the Department of Superintendence, *Fourth Yearbook*, Chapter II; *Sixth Yearbook*, Chapter VIII; *Seventh Yearbook*, Chapters IX and XI. National Education Association, Washington, D. C.

⁴ *Report of the Committee of Fifteen* of the California High School Teachers' Association on Secondary Education in California, 1923.

⁵ Counts, George S., *The Senior High School Curriculum*, Supplementary Educational Monographs, No. 29, February, 1926, p. 16. The University of Chicago, Chicago, Ill.

12, mathematics 6, natural science $6\frac{1}{2}$, social science $6\frac{1}{2}$, commercial subjects 16, industrial arts 30, home economics 7, music $12\frac{1}{2}$, art 12, physical education 4, and miscellaneous subjects 6.

Types of organization of the new content—

The mere expansion of the secondary school curriculum is but part of the problem. How is the decision to be made as to what particular units are best suited to the needs of individual pupils? Modern high schools are solving this problem along three different lines.

The first is the elective plan. In its pure form, which is seldom found in actual practice, a pupil chooses, from the wide offerings of the high school, the particular units of work he desires. Curriculum specialists rather generally agree today that complete election of subjects by pupils brings far from ideal results. They lack judgment in selecting a well-rounded, coherent course. Hence a core curriculum with variables is offered in many secondary schools.

A second plan of meeting individual differences is that of parallel curriculums. This plan seeks to develop a series of well-rounded curriculums designed to meet the needs of individuals of varying aptitudes and interests. The degree of election varies with different schools. Usually some free choice is permitted in connection with all curriculums.

A modification of this plan for meeting individual differences has been suggested by Snedden. He advocates the building of curriculums to fit the needs of "case groups." As a basis for building curriculums to fit these groups he sets up these theses:¹

1. Since it is utterly impracticable to make curricula for individual secondary school pupils and utterly unpedagogical to prescribe the same courses for all, the only practicable and helpful method is to offer and, if necessary, to prescribe a plurality of curricula, for determinable groups, of a size consistent with economical school administration, and reasonably homogeneous in at least three respects—certain abilities, certain environing conditions, and certain prospects.

2. Differentiations of curricula heretofore made have rarely if ever proceeded from systematic

analyses of the conditioning qualities and prospects of learners. Rather have they been based upon either traditional or fortuitous considerations.

3. Systematic study of the school history and subsequent life history of several generations of secondary school pupils will enable us to distinguish groups of considerable size and persistence, each of which is fairly homogeneous as to its optimum educational needs, and between any two of which optimum educational needs may be widely different.

A "case group" is any considerable group of pupils who resemble each other in the common possession of qualities significant to their education. In any large high school, major case groups should be studied and defined from past experience. When reasonably persistent and significantly differentiated case groups can be diagnosed, then a scheme of educational objectives in order of urgency or probable worth for each should be arrayed. From these can then gradually be deduced desirable prescriptions and alternative and optional electives.

Variations in content of particular subjects to meet individual differences—Equality of opportunity does not mean that all children are treated the same way. Mental diet must be varied according to the ability of the individual child to assimilate it. The school must present to children of little capacity subject-matter that they can grasp, and to children of unusual capacity, subject-matter which will stimulate them to full effort. A uniform course of study for all groups is unscientific and ineffective. Homogeneous grouping, special promotions, and individual instruction all provide that individuals advance at different rates of speed; but they make the mistake of presupposing that all individuals can ultimately learn the same things. The experience of many teachers is that even when dull pupils are given more time, they do not grasp the same subject-matter as the more gifted children. These pupils do not need merely a diluted form of algebra or Spanish or Latin, nor will their needs be met by a system of electives or by decreasing the number of subjects taken. The limited pupil frequently demands a different course of study.²

¹ Snedden, David, "'Case Group' Methods of Determining Flexibility of General Curricula in High Schools," *School and Society*, Vol. XVII, No. 429, March 17, 1923, pp. 287-92.

² See: Dickson, Virgil E., *Mental Tests and the Classroom Teacher*, p. 139. Yonkers-on-Hudson, World Book Company, 1923.

Failure must not become a habit, and experience shows that a certain degree of success must come to the pupil if further effort is to be carried on with fervor and whole-heartedness. Courses of study must be revised so that a proper amount of suitable work is required of those whose mental capacities are limited; and the course for superior minds must be so enriched that they will receive adequate stimulus and development.

The problem of adjusting content and methods of instruction to secondary school pupils of different levels of ability is extremely difficult. Its solution waits upon careful analysis of the characteristic differences of dull and bright pupils and the adaptation of subject-matter to these differences. Much experimentation is already in progress, but further observation and extensive research must be completed before anything except highly tentative conclusions can be reached. The subsequent sections of this Bulletin pool the observations and experiences of classroom teachers, as well as the findings of psychologists who have studied the differences in learning capacities of dull and superior children.

What do the terms superior, normal or average, and dull or limited mean?—Inasmuch as the term "gifted" is a relative designation—as there is no definite line of demarcation between a normal and a superior or gifted child¹—gifted children are often defined only in general terms as those of "rounded" and accelerated development. Such pupils constitute approximately the upper one-tenth of ordinary classes. Their I. Q.'s usually range from 130 upward. It is recognized that the I. Q. alone does not measure all phases of intelligence, nevertheless it is objective.

The normal or average child is one whose physical, mental, and social developments proceed at a rate close to the average for children of his age. In terms of I. Q., normal intelligences range from 90 to 110, according to Terman.²

The term "limited" or dull is used in this Bulletin to designate those pupils who do not seem to have the ability to do the work of the traditional high-school curriculum. In terms of I. Q., pupils from 70 to 90 are "limited."³

Six ways in which children differ—Various means have been suggested for determining the individual differences of children. Baldwin in his studies approached the problem of individual differences from six directions. He recognized six phases of child development and studied children as to the ages they acquired in each of these phases of growth; however, he was not able to make equal progress in the measurement of these ages. According to Baldwin, the six parallel ages are:

1. Chronological age—indicating time elapsed since birth
2. Mental age—indicating stage of mental development
3. Pedagogical age—indicating stage of development of school abilities
4. Anatomical age—indicating stage of bodily development
5. Social age—indicating stage of social development
6. Moral or religious age—indicating stage of moral or religious development.

Degree of correlation of different phases of development—Terman's studies⁴ show that generally, where the mental is greater than the chronological age, as it is in the case of the child of superior intelligence, the pedagogical, anatomical, social, and moral ages are also greater than the chronological. On the other hand, the development of members of the dull group is often erratic; i. e., physical, mental, and social development may each be at variance with the chronological age.

A summary of opinion to date results in the following tentative statements as to the distinguishing characteristics between superior and dull pupils. They are presented here merely as an introduction to discussion and study by local groups of teachers and principals.

¹ Baldwin, Bird T., "Methods of Selecting Superior or Gifted Children," *Twenty-Third Yearbook, Part I*, p. 37, National Society for the Study of Education. Public School Publishing Company, Bloomington, Ill., 1924.

² Terman, Lewis M., *The Measurement of Intelligence*, p. 79. Boston, Houghton Mifflin Company, 1916.

³ Terman, Lewis M., and others, *Genetic Studies of Genius, Vol. I. Mental and Physical Traits of a Thousand Gifted Children*, Stanford University Press, Stanford University, California, 1926.

*Mental traits of gifted pupils*¹—These are among the traits most easily recognized:

1. Ease of assimilation and, as a rule, quick reaction time—ability to absorb the same amount of material in a fraction of the time required by an average group. Power to learn is a distinctive characteristic of gifted children. They show marked ability to "absorb" knowledge much more quickly than average children. They read more rapidly, remember more, and with greater vividness. Superior students have a greater degree of concentration, waste less time, and grasp an idea at its first presentation.

2. Voluntary power of sustained attention, mental endurance, and tenacity of purpose—gifted pupils have unusual power of focusing their attention upon a task; and they are able to stay by a thing without fatigue longer than the average.

3. Intellectual curiosity, originality, and initiative—the superior student is comparatively self-directing.

4. Power of generalization—they quickly see underlying principles, relate similars, and foresee results.

5. Ability to work with abstractions—the gifted student not only learns facts, but he also delves into the principles underlying the facts and into the inferences to be derived from them. Generally speaking, the gifted pupil is superior in quickness of observation, in wealth of associated ideas, in power of discrimination, and in reasoning ability.

6. Ability "to know when they do not know"—many gifted children seem particularly competent in self-criticism.

7. Versatility and vitality of interests—closely allied to their wide range of interests is the degree of special talent found among gifted children.

*Mental traits of dull pupils*²—According to many writers, the following traits are most easily recognized. They are presented here as a basis for discussion and evaluation.

1. Slow in reaction time—it takes them longer to think things through than the average pupil. They are slow in getting under way and weak in transfer, and use a thing in the situation in which they learn it. They cannot transfer it out of its original setting. Hence the dull child must acquire through direct teaching much knowledge that the bright child acquires incidentally.

2. Short in span of attention—lack ability to carry a sequence of ideas long enough to reach a point off in the distance.

3. Illogical—this is partly due to their limited number of ideas. The amount of material assimilated and used in a given situation is limited. The dull pupil usually becomes a pattern-reaction individual, for, lacking the ability to organize things for himself, he tries to live by rule of thumb. Dull pupils have little initiative. They are better able to execute than to plan. The dull pupil understands and learns general processes through situations in which specific habits and automatic responses are formed. Dull pupils are dependent upon constant guidance and sympathetic encouragement of the teacher.

4. Inability to take a body of material and out of it to draw facts which are pertinent to the problem in a given situation.

5. Inability to work with abstractions—dull pupils think most often in terms of immediate objectives, and they deal largely in things concrete. With dull pupils, we must put emphasis upon details, not upon broad general ideas. The dull pupil generalizes and applies processes only to problems well within his training and experience.

6. Lacking in power to evaluate their efforts, and consequently often unable to correct their failures.

7. Narrow range of interests.

8. More emotional in attitude than the superior pupil.

*Shall both dull and gifted children receive special training?*³—According to Whipple,³ subject-matter, both as to amount and kind, must

¹ See also:

Alltucker, Margaret M., "Is the Pedagogically Accelerated Student a Misfit in the Senior High School?" *School Review*, Vol. XXXII, No. 3, March, 1924, pp. 193-202.

Cox, Catharine M., *Genetic Studies of Genius*, Vol. II, *Early Mental Traits of Three Hundred Geniuses*. Stanford University Press, Stanford University, California, 1926.

Coy, Genevieve Lenore, *The Interests, Abilities, and Achievements of a Special Class for Gifted Children*, Teachers College Contributions to Education, No. 131. Columbia University, New York City, 1923.

Goddard, Henry Herbert, *School Training of Gifted Children*. Yonkers-on-Hudson, World Book Company, 1928. 226 pp.

Hollingworth, Leta S., *Gifted Children, Their Nature and Nurture*. New York, The Macmillan Company, 1924. 339 pp.

Jensen, Dortha Williams, "The Gifted Child," *Journal of Educational Research*, Vol. XV, 1, Educational Concepts and Practices, No. 1, January, 1927, pp. 34-43; II, Present School Provision for the Gifted Child, No. 2, February, 1927, pp. 126-33.

National Society for the Study of Education, *The Nineteenth Yearbook, Part II, Classroom Problems in the Education of Gifted Children*. Public School Publishing Company, Bloomington, Ill., 1920. 120 pp.

National Society for the Study of Education, *The Twenty-Third Yearbook, Part I, The Education of Gifted Children*. Public School Publishing Company, Bloomington, Ill., 1924.

Stedman, Lulu M., *Education of Gifted Children*. Yonkers-on-Hudson, World Book Company, 1924.

² See also: Alltucker, Margaret M., "What Can the Secondary School Do for the Student of Low I. Q.?" *School Review*, Vol. XXXI, No. 9, November, 1923, pp. 653-61.

Baker, Harry J., *Characteristic Differences in Bright and Dull Pupils*. Public School Publishing Company, Bloomington, Ill., 1927.

Hollingworth, Leta S., *Psychology of Subnormal Children*. New York, The Macmillan Company, 1920.

Inskip, Annie Dolman, *Teaching Dull and Retarded Children*. New York, The Macmillan Company, 1926.

Whipple, Helen D., *Making Citizens of the Mentally Limited*. Public School Publishing Company, Bloomington, Ill., 1927.

³ Whipple, Helen Davis, *Making Citizens of the Mentally Limited*. Public School Publishing Company, Bloomington, Ill., 1927.

be adjusted to the capacity of the slow-learning child. He cannot deal with the same quantity and, in many cases, with the same quality of subject-matter as the normal child. Hence, differentiation of material and special training are essential.

Hollingworth¹ argues for special training for the gifted on these grounds:

One who clearly comprehends that each advance in human usage comes through the mental work of some individual, and that only a minority can originate, will feel that those few are worth conserving, if he believes that civilization is good. He will at least wish to be convinced by actual experimentation of the truth of the premise that a gifted person will perform his work without special opportunity as well as with it.

In like manner, Goddard, in his *School Training of Gifted Children*² states:

The best results with gifted children will be obtained only by recognizing the gifted child, the bright child, as a new problem requiring a special type of education, and by providing that education. No better proof of this is needed than the experience with the defective child in the schools. . . . We have learned to segregate the defectives because they cannot do the work that is given to the regular children in the grades. We should segregate the bright children because they can do more and better work than the regular children.

Justice demands that every pupil in a democratic school system be judged by the best which he can do and not by the median performance of a non-selected group. Justice further demands that school work be provided which is commensurate with each pupil's ability. In other words, the recognition of the special needs of dull and gifted pupils has placed upon the school the responsibility of providing adequately for them. This means differentiated curriculums and differentiated courses of study. In providing these, one of the first steps is to set up certain fundamental principles to be used in the differentiation of all courses of study.

Fundamental Principles for the Differentiation of Courses of Study

These six general principles are tentatively presented for consideration by local course-of-study committees:

1. In providing for curriculum and course-of-study adaptation, intelligence tests should not be too exclusively relied upon for the proper classification of pupils. They are a valuable instrument, but not the sole means to be used in grouping children for purposes of effective instruction. The judgment of teachers and the past achievements, interests, and future plans of pupils must also be taken into account.³

2. The differentiated subject-matter for a specific group should be elastic in content, so that it can be modified to meet individual needs as well as group needs.

3. Differentiation of courses of study does not mean that the public school should develop a series of wholly distinct courses for different groups of pupils. There will always be certain minimum essentials which all pupils should seek to acquire. The percentage of the curriculum made up of these minimum essentials will probably be greater in the elementary than in the junior and senior high school. It is important in a democracy that certain information shall be the common heritage of all. Insofar as they are able to acquire it, all children should have the best of the social heritage.

4. The aims, objectives, and outcomes of all subjects should be set forth for different ability groups. For the most part, there should be a common background for these aims. The methods and emphasis are necessarily different, as are the immediate objectives and outcomes; but the same ultimate aim of education should guide all teaching. The same philosophy of education is back of whatever differentiation is made.

5. The course of study should recognize that the rate of progress will not only vary between the different ability groups, but also within each group. Even though the practice of homogeneous grouping is followed, there will be a considerable range of capacity and a variety of backgrounds and needs within each group.

6. Much study, research, and experimentation are needed to determine the amount and quality of work which may rightly be expected from pupils of differ-

¹ Hollingworth, Leta S., *Gifted Children, Their Nature and Nurture*, p. 297. New York, The Macmillan Company, 1926.

² Goddard, Henry Herbert, *School Training of Gifted Children*, pp. 2 and 35. Yonkers-on-Hudson, World Book Company, 1928.

³ The theory of "specificity" raises certain questions about homogeneous grouping by intelligence tests, which may well be the basis of thought and discussion by those working on differentiation of courses of study.

ent levels of ability. Whereas no amount of research will make it possible to mechanize education, it will offer a guide in dealing with both individuals and groups.

How Shall Course-of-Study Content and Method Be Differentiated for Pupils of Superior Ability?

It appears that the capacity of gifted children differs from that of mediocre both in quality and quantity. In other words, gifted children have mental powers which are sufficiently different from those of average children to make it probable that there should be a special adaptation of method as well as content to their peculiar needs.

According to Hollingworth,¹ it is generally agreed by those who have taught groups of the gifted that certain modifications can be derived by corollary from the study of the psychology of these children as well as from the actual experiences of the classroom.

In assembling the following tentative suggestions for modifying content and method to fit the needs of gifted pupils, a variety of sources have been consulted. Anything like a final answer to this question can come only after a much longer period of experimentation.

1. *Course-of-study content for the gifted pupils should be enriched*—Enrichment means something more than additional amounts of core material; it also involves the introduction of a different and higher type of material which can only be dealt with successfully by those of superior intellect. Hence, curriculum content must differ both in quantity and in quality. This involves more intensive and elaborate study of the material dealt with.

2. *Method will be modified for gifted pupils*—These suggestions grow out of the experience of teachers of gifted classes:

a. *Greater provision should be made for initiative*—Originality is one of the distinguishing characteristics of gifted pupils. They are especially amenable to instruction by the project method because they excel in "thinking things together," in perceiving the relations be-

tween and among all the relevant elements in a given field of endeavor. In recitation, the method of the seminar is feasible and is much enjoyed. Gifted pupils like to impart information. They like to ask questions and to be questioned.

b. *Broad underlying principles should be emphasized*—More abstract theory should be taught and there should be more teaching by means of principles. Evaluation and organization should be emphasized. More excursions and field trips should be made for observing principles and theories in practice.

The following are further illustrations of adaptations which some schools, that recognize a distinction in modes of thinking on the part of gifted children, are making:

Superior pupils use more advanced books and are encouraged to find references for themselves. They learn easily how to take advantage of their knowledge of the organization of a book to find out what they want.

They are urged to make free use of the library.

Gifted pupils are given longer assignments, perhaps not including more general ideas, but an elaboration of these ideas.

Superior secondary school pupils carry on many special investigations, making individual reports, some involving quite careful research. The superior pupil has great power to originate and carry through the investigation of a subject when once his interest has been enlisted.

Superior pupils, in reaching generalizations through observation and inductive reasoning, will need but few primary illustrations. However, they need drilling and checking on the whole process of induction, since they spring quickly to a generalization. Unless they are guided, this quickness makes for inaccuracy and superficial thinking.

c. *Drill should be modified*—For superior pupils, drill materials should be treated quite differently, both as to standards of attainment and time spent, as compared with dull pupils.

Many repetitions are not only unnecessary for the highly intelligent, but they are decidedly irksome. For the same reason, the amount of review should be reduced as well as the number of illustrations cited to establish a particular point.

¹ Hollingworth, Leta S., *Gifted Children, Their Nature and Nurture*, pp. 307-10. New York, The Macmillan Company, 1926.

Although drill can be reduced, it can by no means be abandoned. High standards should be set for bright students in tasks that are of a drill, memory, or routine nature. Equipped with these tools, the bright pupil has more opportunity for the creative work of which he is capable.

d. *The amount and detail of explanation can be reduced*—Gifted pupils usually have a quicker reaction time. They take in ideas more quickly. They usually grasp an idea at its first presentation.

How Shall Course-of-Study Content and Method be Differentiated for Dull Pupils?

Experimentation has gone far enough to show that slower rates of progress, or stripping present courses to minimum essentials do not completely solve this problem. New material, different from that commonly found in the traditional secondary school curriculum, will have to be incorporated before ideal courses for slow pupils will have been developed. Texts should be suited to physical and social maturity, while at the same time they contain in concrete form socially valuable materials, selected through analyses of daily activities of children and adults.

Methods of teaching will also need to be radically altered in many cases. In teaching dull pupils, many teachers have found that abstract principles are out of place and drill by verbal methods ineffective. Subject-matter should be presented concretely, and much dependence placed upon learning by doing.

Concrete, though tentative, suggestions from psychologists and from teachers engaged in teaching classes of dull pupils, follow. They are presented here for discussion and evaluation:

1. *Discover lines of work in which a particular pupil can succeed*—Nothing succeeds like success. Even the dull pupil should experience the joy of accomplishment.

2. *Select material on the basis of its value to the student and to society*—It is necessary that a rigorous and careful selection be made of those materials in the academic curriculum which are most worthwhile in the student's life and are of large social value. For example, the chief objectives in the English class of the limited pupil are: (a) reading for appreciation, and (b) self-expression in its simplest form.

3. *Have subject-matter elastic in content so that it can be modified to meet individual and group needs*—In working out the details of a course of study for a particular group of limited pupils, the mistake should not be made of seeking for the typical dull youth, possessing a set of imagined qualities. The subject-matter should be varied according to environing conditions, interests, and needs of the individual pupils in a particular school. Furthermore, local course-of-study committees should be guided by what they know almost certainly is ahead of certain groups of students, rather than by custom and tradition.

4. *See that the subject-matter is concrete and deals with simple actual life situations*—The dull pupil does not seem to have the ability to take a body of material and out of it draw facts pertinent to the problem in a given situation.

While superior pupils look for ultimate principles, casual explanations, and final objectives, children of limited mental capacity seldom seek beyond the immediate and the concrete. For example, some English teachers have found that dull pupils can appreciate the story of *The Ancient Mariner*, while the philosophy of *Il Penseroso* is beyond them. The universal appeal in Gray's *Elegy* usually reaches limited senior high-school pupils, as do also the life situations portrayed in *Captains Courageous*. These illustrations may not necessarily be applicable in all situations. They do suggest, however, the direction which curriculum revision must take when pupils of limited capacity are concerned. Special text-book materials are now being worked out for dull pupils.¹

¹ As an illustration of the type of materials now being developed see: McEntyre, Sophia, and Voorhees, Marietta, *Buried Treasure and Treasure Trove*. New York, The Macmillan Company, 1929.

The aim of these books as stated in the preface is as follows:
It is hoped that *Buried Treasure and Treasure Trove* will provide enjoyment in "literature" classes, to pupils and teachers, and that the books will find their way into many children's hands outside the schoolroom.

The material will suggest similar, psychologically timed selections, which teachers in many places have long been using for children who do not respond to the more formal "old-time" ninth and tenth-year material.

5. *Provide large opportunity for drill work*—The dull child understands and learns general processes through situations in which specific habits and automatic responses are found.

Contrary to general belief, the slow thinker is not necessarily the accurate thinker. Nor does the pupil who learns slowly generally have a more retentive memory than the bright pupil.

According to one teacher, "If you want to benefit dull pupils, take a short, concise, definite unit of material and teach it and reteach it until they get the pattern." It is generally conceded that the keynote in the education of a pupil of limited mental ability is the establishment of specific habits.

It is often interesting to note the satisfaction and enjoyment which dull pupils get out of the things they have discovered that they are able to do well. Observation seems to indicate that dull pupils are prone to read over and over again the same material which is interesting to them and within their comprehension.

6. *Avoid involved assignments*—Assignments should be short, definite, concise, direct units of material distinctly and plainly set forth. This is of special importance for dull pupils.

All psychological tests show that dull pupils are almost always unable to follow complex directions; they get lost in the maze. Dull pupils cannot carry a sequence of ideas long enough to reach a point off in the distance. For example, in English composition, it is better to require a few short sentences or paragraphs than to assign a three-thousand-word theme based on references which have to be acquired from many sources. An assignment for dull pupils must be deliberately made, explained, and checked up to see that it is really understood.

7. *Consider mental age in making academic assignments*—One should remember that the mental age of the limited pupil is less than his chronological age, and that in academic assignments it is his mental age that should be given first consideration. However, a pupil sixteen years old with a mental age of ten years should have different assignments from a normal child aged ten.

8. *Dull pupils usually learn largely by rule of thumb and imitation*—The limited pupil usually cannot reason out general principles or methods of attack, but has to learn largely by imitation and successive experiences.

To illustrate, according to W. J. Osburn,¹ a dull child who has learned 8 from 13 will probably be confused by the 48 from 53 which occurs in the exercise 534 divided by 6. To a gifted child, this presents little difficulty. Dull pupils must have direct teaching on all the important elements of instruction, whereas gifted pupils will probably master the material after one-tenth of it has been taught. There are more than 1200 combinations in arithmetic which everyone must know in order to carry on ordinary computation with integers; yet we know gifted pupils can attain a reasonable mastery of this material by the presentation of 180 combinations; that is, the 45 principal combinations in each of the four processes. This is not true of the limited pupil.

A successful teacher of long experience with limited pupils states that it is particularly important that their work be carefully laid out for them, if they are to attack it with enthusiasm and complete it. If left to themselves to work out a project that is at all difficult, they soon give up in despair because of bewilderment. Hence, the course of procedure for the limited pupil should be carefully laid down for him. A better plan is the following: Demonstrate the procedure while he observes; allow him to attempt it himself under careful supervision, have him repeat it until by repetition the various parts of the process come to have for him a habitual relation or association. In time, the whole action becomes easy and mechanical; then, and not until then, has the limited pupil mastered it. The more technical the subject, the more nearly one has to come to individual instruction.

While the "keynote in the education of an exceptional child of any age is to provide a wealth of stimulations of a suitable order," the keynote in the education of the limited pupil is the establishment of efficient habits. Usually the limited child is not capable of constant adjustments to new situations.

9. *Dull pupils succeed in the manipulative work, but they have difficulty in acquiring un-*

¹Osburn, W. J., *Corrective Arithmetic*. Houghton Mifflin Company, Boston, 1924.

derlying principles—The dull pupil will do a piece of work over and over again in order to get the desired finish, but he is a poor person to work over a blue print. He can acquire considerable speed and accuracy in typing, but usually lacks ability to interpret the materials his employer has to handle, and hence finds it difficult to hold a responsible secretarial position. He can use computing machines, but does not get beyond the machine and stays with the mechanical part of office work. He cannot do the things which require understanding and where success is dependent upon ability to manipulate or organize abstract ideas.

10. *Dull pupils are dependent upon constant guidance and sympathetic encouragement*—While it is highly important that course-of-study committees and teachers should recognize the fact that limited pupils do not have the ability to do successfully the work of the traditional secondary school curriculum, it is equally important that they remember that the limited high-school pupil has some ability. It is their privilege to cooperate with him in developing the ability which he has. Teachers should find at least one worth-while thing at which the limited pupil can succeed, train him in this, and let him feel honest success. Too often the only thing the limited pupil gets from the high school is a sense of failure.

To provide differentiated courses for limited pupils is not sufficient. Wise counseling and careful follow-up are necessary if the purpose of the special opportunities provided for in the curriculum is to be realized.

Illustrations of Differentiated Courses of Study¹

Many school systems report they have not differentiated their courses of study to fit pupils of different levels of ability. They explain that

their courses as written are full enough to take care of pupils of high ability, and that selection of material to fit varying needs is provided for but not definitely stated. Something more fundamental than this is necessary. Some school systems have really tackled this problem and have made promising starts in developing completely differentiated outlines. The following materials are illustrative.

Grading assignments in Eau Claire, Wis., to individualized ability—Mimeographed material is prepared for high-school students along what is called contract lines. To illustrate, in the social studies a minimum list of references bearing on a particular topic is given, together with questions, problems for study, and certain written assignments, such as the preparation of an outline map, biographical sketch, or abstract. Following these are the references for the B level, with this admonition to the pupil: Do not start on the work for a B until you have mastered everything up to this point.

Additional and more difficult assignments are also included for A level. According to the superintendent of schools, there is nothing fixed nor set about the contract; it is simply a method of grading the assignment a little more effectively, as to individualized ability.

Working basis developed in Denver, Colo.—“Differentiation of Curriculum for Slow-Learning Children”² is the title of a supplement to the regular course of study prepared by the Denver Elementary School Special Classes Committee. The affirmative point of view of this Committee is expressed in its own statement of purpose:

The purpose of the committee is to present the problem of the slow-learning child from the positive constructive point of view.

1. Stressing as the final goal, fullest development of the individual, through a suitable school environment, to the end that he may attain maximum social adjustment.

¹ For additional help relative to the meeting of individual differences of both dull and superior children, see:

Corning, Hobart M., *After Testing What?* Chicago, Scott, Foresman and Company, 1926. 213 pp.

Irwin, Elizabeth A., and Marks, Louis A., *Fitting the School to the Child*. New York, The Macmillan Company, 1924. 339 pp.

Mort, Paul R., *The Individual Pupil in the Management of Class and School*. New York, American Book Company, 1928. 383 pp.

National Society for the Study of Education, *The Twenty-Fourth Yearbook, Part II, Adapting the School to Individual Differences*. Bloomington, Ill., Public School Publishing Company, 1925. 410 pp.

Ryan, Heber Hinds, and Crocclius, Philippine, *Ability Grouping in the Junior High School*. New York, Harcourt, Brace and Company, 1927. 223 pp.

² In the Denver report, the term “slow-learning” refers to backward, dull, and borderline pupils who differ from normal to such a degree as to need adjustment of subject-matter, methods, and standards suitable to their capacity.

2. Stressing capacities of the slow-learning child according to mental age rather than incapacities according to intelligence quotient.

3. Stressing adjustment of the regular curricula by adapting subject-matter, methods of procedure, and standards of attainment, to the capacities of slow-learning children.

4. Stressing the fact that most children in our special classes are dull and borderline cases with sufficient ability to become self-supporting.

A second report¹ prepared by the Denver Special Classes Committee supplements the regular course of study in arithmetic and suggests:

1. The common core which all children should acquire.

2. The limits of difficulty within which most borderline children should remain.

3. Most frequently used type process which should receive most emphasis in drill and problem solving.

Principles developed in Lincoln, Neb.—These principles guide course-of-study committees in Lincoln, Neb.:

1. A course of study made up of a series of units conceived of as expanding from a central idea or process.

2. The building of the units in such a way that any degree of expansion will contain prerequisites for an equal degree of expansion of the following units.

3. Provision for sufficient expansion of each unit so that the best pupils will occupy all of their time profitably.

4. Time limits for each unit so that all pupils begin each unit together.

*Courses of study differentiated on the bases of difficulty, range, and speed in Cleveland, Ohio*²—In the Cleveland junior high-school mathematics course of study, separate courses for X, Y, and Z groups are presented in parallel columns. Difficulties vary with the ability groups. The range of sub-topics under each main objective is much wider for the X pupils than it is for the Y or Z pupils. Rate of learning is cared for by planning the course so as to give Z pupils three years to cover the important topics included in the X outline for the

seventh and eighth grades. This is accomplished by building a Z course for the ninth year out of material omitted from the seventh and eighth-grade outlines, plus other material of recognized social utility, plus the most practical phases of elementary algebra.

Plan of work for normal, slow, and fast classes in Lakewood, N. J.—In general, the plan is based on the theory that it is better for fast pupils to have a richer course and the slow pupils a less inclusive course in any subject than is given the normal pupils. It recognizes the argument that all pupils, of not too low a degree of mentality, who work faithfully, should have the expectation of completing their high-school course in four years' time. To illustrate: Work in Algebra I and Geometry II is differentiated thus:

While it follows the general outline of the normal classes, it is made as objective as possible. A considerable fraction of class time is given to explanations and illustration. Only simple exercises are assigned, in order that the pupils may be successful in solving them and thus gain confidence. The fundamental processes of arithmetic are reviewed in connection with algebra, putting the emphasis on accuracy. The problem material is of such a nature that its usefulness is evident. Shop, home, and ordinary business problems are preferred.

The general principles laid down for teaching first-year algebra are also observed in teaching geometry. The formal proofs of about 30 theorems each semester are required of each pupil and the theorems of as many more are learned. The proofs of the latter are treated informally in class. By way of contrast in the fast classes about 60 theorems are required in Geometry I, and as many more in Geometry II. From 125 to 150 originals (a part numerical) are required each semester. Originals too difficult for the normal and slow groups are proven in the fast group. In the slow group, an effort is made to develop some power in reasoning out original exercises. Exercises that require only short proofs are selected. Whenever possible, applications of theorems are made, and many numerical problems based on theorems are solved. More time is given to estimating distances, size of angles, and to space relationships than in the normal and superior groups of pupils. Greater emphasis is placed on the mensuration side of the subject than on the logical.

¹ *Differentiation of Course of Study in Arithmetic for the Borderline Child*, prepared by the Special Classes Committee, Department of Curriculum, A. K. Loomis, Director, Denver Public Schools, Denver, Colo.

² See: *Tentative Course of Study in Mathematics for Junior High Schools*. Cleveland Public Schools, September, 1928. 204 pp.

How Sioux City, Iowa, differentiates its course in plane geometry—The committee of local teachers charged with the reorganization of the geometry course reported¹ that experience indicates that segregation is more necessary for demonstrative geometry than for most other high-school subjects. According to the Sioux City mathematics course:

Emphasis was placed upon individual differences in the planning of three separate courses: A minimum course where only the most essential theorems and those necessary to make a sequence are included. This course is of a much more elementary nature than that recommended by most textbooks.

After the mathematics committee selected what, by trial, was in their judgment the most desirable geometry text, it selected from this text a separate and complete list of exercises and originals for each of the courses: minimum, medium, and maximum. These exercises were supplemented by exercises from different texts as well as from other sources.

English for Z Pupils is the title of a Los Angeles course-of-study monograph.² It assumes that while reading has the same general aims for Z pupils as for all pupils, it has two distinctive features:

1. Selection of material. The stories must be simple in structure and vocabulary; they must appeal to the pupils' interests. Begin with "low-brow" books if necessary, and work up gradually.

2. Reading for comprehension. Drill for comprehension as a necessary tool in independent reading and thinking. Discover and remove mechanical difficulties. The simple knowing how to read is basic. Without this foundation, reading for pleasure and profit is impossible.

How can one instruct children en masse and at the same time individualize?—While differentiating the requirements makes possible a high degree of individualization, its successful administration in the classroom presupposes on the part of the teacher: (1) Knowledge of the educational status of his pupils as individuals, (2) organization of the materials of instruction so as to permit flexible assignments, and (3) the adoption of a technic of instruction which will enable the teacher to use a large share of his teaching time in directing individual work rather than hearing lessons. The whole problem of meeting individual differences has been but partly solved when homogeneous grouping has been accomplished and differentiated courses developed.

¹ See: *Tentative Mathematics Course, Seventh to Eleventh Years Inclusive*, Sioux City Public Schools, 1927-28, p. 86.

² Los Angeles City High Schools Course of Study Monographs No. 32, June, 1923, p. 40.

A PROGRAM THAT will satisfy cravings of groups of boys and girls—ininitely different but indescribably worthy—implies radical curriculum adjustments and calls for extensive differentiation in courses of study.

As groups appear or are discovered that require special training, varied and diversified avenues of instruction must be opened to receive them. This is the program of the Boston public schools. Replacing rigid and uniform courses of study, curriculums have been modified and reconstructed to satisfy the varying aptitudes and capacities of groups of children, all equally deserving, all endowed with equality of rights and entitled to equality of opportunity. Through this policy Boston is solving the question of why children leave school. Boston has discovered that if these varied opportunities adapted to their special needs are offered to boys and girls, then these pupils will not leave school; they prefer to remain.—*Annual Report of the Superintendent*, School Document No. 12—1927, Boston Public Schools.

An Introduction to Research in Secondary School Subjects

Six lines of research of interest to all teachers and to course-of-study committees—A review of recent research studies, bearing on the secondary school curriculum, shows that something has been done in each of these six fields: (1) Determination of objectives of the various secondary school subjects, (2) selection of curriculum content on more or less objective bases, (3) discovery of pupils' interests and methods of teaching by which they learn most easily, (4) development of various types of standardized tests, (5) analyses of textbooks, and (6) surveys of present conditions in secondary education.

Since all these fields of investigation are illustrated in subsequent sections of this Bulletin, only brief mention is made of them here.

The most common form of research in the determination of objectives is to summarize the published statements which represent the judgment of frontier thinkers or committees, and noting wherein their viewpoints agree or disagree.¹

Among the research methods for the selection of curriculum content are job and activity analyses, tests of practicality such as frequency of use in business and social practice² and frequency of mention in newspapers and periodicals, analysis of home activities,³ and tabulation of interests of pupils and their parents.

Studies of how children learn are a guide in the selection of methods, grade placement of materials, and in assignments.⁴

Among the various types of standardized tests which research has developed are prognostic, accomplishment, and diagnostic tests. Many local school systems have found it desirable to develop tests to cover the content included in their new courses of study.⁵

Analyses of textbooks are made chiefly for these two reasons: (1) To see how nearly the points covered agree with the content outlined in the course of study, and (2) to see whether the materials presented are within the range of comprehension of the pupils using them.⁶

Status studies or surveys of present practices are often as valuable in showing weaknesses as in serving as a direct guide. An evaluation of local conditions is often a good starting point for curriculum revision. Periodic studies of current practices in a large number of school systems are valuable in showing trends.⁷

Amount of research in each of the secondary school subject fields varies widely—This section of the Bulletin summarizes briefly some of the essential findings of selected research studies in twelve secondary school subject fields, which have a more or less direct bearing on course-of-study building. In certain fields, such as modern foreign languages, Latin, science, and social studies, numerous research studies have been made, and their findings have been summarized. Subsequent sections, dealing with these subjects, review these summaries in succinct form. In the case of the *Modern Foreign Language Study*, which is reported in seventeen volumes, space permitted only the briefest mention here of certain phases of the study. The reader is urged to consult the original studies in this, as well as in other, subject fields.

In other subjects, such as home economics, considerable research has been done, but it has not been summarized, and since it is published in more or less isolated periodicals and monographs, it is difficult to locate.

In certain subjects, such as art, practically no research has been carried on, so that a summary of the findings makes a very meager showing. In subjects where few research findings are available, statements of trends are given and progressive viewpoints are cited.

In a few instances, there may be better material available than here presented, for facilities were not adequate for making a complete collection of research studies. The amount of research material presented here under the various subject fields varies for two reasons: (1) Much more research has been carried on in some fields than in others, and (2) practically

¹ See page 233 for an illustration of the rating of industrial arts objectives in junior high school and in senior high school by a jury of 38 people.

² As an illustration of this form of research, see section on modern foreign languages, page 195.

³ See section on industrial arts, p. 233.

⁴ See page 221 for a review of ten learning studies in the field of science. These studies were made to determine which is better, the individual laboratory or the demonstration method of teaching physics and chemistry.

⁵ For an illustration, see page 199, which describes testing for achievement in the modern foreign languages.

⁶ An example of this type of research is given in the section dealing with research in high-school science. See page 218.

⁷ As an illustration, see page 197 for enrolment in modern foreign language classes, and page 199 as to what proportion of high-school pupils take Latin.

all the available research findings in some subjects have been collected and summarized, in other subjects this has not been done. Where the latter is the case, the material presented here may be more or less incomplete.

The influences which affect the evolution of curriculums may be classified under two heads: (1) Subjective and (2) objective. Under the first may be included such factors as the pooled opinion of experienced teachers, empirical experimentation, and the judgment of frontier thinkers. The objective influence comes from scientific studies which seek to base their conclusions upon definite, quantitative data.

Until recently, practically all course-of-study development was based upon subjective or philosophical procedure. In the last decade, there has been a strong tendency to seek objective bases for course-of-study materials.

The results of research in the field of the curriculum are in many cases crude and inconclusive. The importance of many of these studies lies in the promise which they hold for the future of a more scientific basis for curriculum revision, perhaps even more than their actual contribution at present.

In differentiating between the two bases for curriculum revision, it is not meant that they are mutually exclusive. Reflective thinking should always constitute one of the bases for

curriculum change. As rapidly as the results of research permit, however, it should cease to be the sole basis. Objective data should replace guesswork as a basis for many decisions affecting the curriculum.

A good omen for the future is the amount of study, discussion, and research concerning secondary education now taking place.

This section of the Bulletin seeks to indicate a few of the more important influences, both of the subjective and the objective type, which are at present affecting the evolution of the secondary school curriculum.

The character of the material presented for each subject differs. In some secondary school subjects, selection of both content and methods is still based almost wholly upon subjective evidence. In others, this type of evidence is being supplanted by research.

The amount of the material of each type presented here is influenced by the limitation of space available in a bulletin of this length. This section does not present even in part all the material which an intelligent committee on curriculum revision should consult. Rather, it seeks to mention some of the more significant lines of development and to cite materials in which more comprehensive consideration of both objective and subjective materials is presented.

ONE OF THE chief intellectual purposes of the school is to develop understanding of the institutions, problems, and issues of contemporary life. Historically, whenever a rapid transformation of the conditions of living has taken place, the tendency has been for the curriculum to lag behind. Because of the great changes in modern life, there is at present a real need in certain fields of a new synthesis of knowledge and, correspondingly, for a new grouping of the materials of the school. . . .

School practice, both past and present, has conceived too generally of curriculum-revision as a task for intermittent administrative reorganization. . . . Because of the dynamic nature of modern society and of the steady accumulation of truth concerning learning and child growth, school systems and colleges should make provisions for the continuous study, evaluation, and testing of the materials of the school curriculum, and the importation of new materials or the elimination of old kinds whenever this proves to be justifiable.—*The Twenty-Sixth Yearbook of the National Society for the Study of Education*, pp. 21-23.

Research in Modern Foreign Languages¹

Extensive research findings available in the teaching of modern foreign languages—The *Modern Foreign Language Study*,² which has just been completed, is one of the most comprehensive ever made in the field of secondary education. It presents extensive data on nine phases of modern foreign language teaching: Course content, enrolment, organization, post-scholastic use of modern language, prognosis, reading, teacher training, testing for achievement in modern languages, and transfer of training.

Most frequently used words in French, Spanish, German, and English—The Word Books cited in footnote 1 below list the words most frequently used in writing in four languages. The French and Spanish lists are running words of 1,250,000 and of 1,200,000 running words respectively, in texts widely representative of the various types of writing;

the German list is based on a count of 10,910,777 running words. Table 1 on page 196 lists the 25 most common words in the Spanish, German, and English³ Word Books.

The Word Books and the Idiom Lists,⁴ which are also based on counts of approximately a million words each, give a more scientific starting point than did individual judgment for the preparation of elementary language texts, sources for drill materials, and various vocabulary studies.

Idiom lists objectively selected present basic materials. The Spanish, French, and German idiom lists,⁴ made available through the *Modern Foreign Language Study*, present material which cannot be ignored by anyone interested in the making of elementary grammars, or the selecting and editing of texts, or, in fact, in any phase of curriculum construction in these languages.

¹ Local course-of-study committees charged with building high-school courses in modern foreign languages and language teachers interested in improving their teaching are urged to consult the following references, classified under seven headings:

I. Course Content

- Buchanan, M. A., *A Graded Spanish Word Book*. University of Toronto Press, 1927.
Tabulated for range and frequency on a count of 1,200,000 running words.
Cheydleur, F. D., Editor, *A French Idiom List*. New York, The Macmillan Company. In Press.
Tabulated for range and frequency on a count of 870,000 running words.
Johnson, C. L., "Vocabulary Difficulty and Text-Book Selection," *Modern Language Journal*, February, 1927.
Keniston, Hayward, Editor, *A Spanish Idiom List*. New York, The Macmillan Company, 1929.
Tabulated for range and frequency on a count of 1,000,000 running words.
Morgan, B. Q., and Purin, C. M., *A German Word Book*. New York, The Macmillan Company, 1928.
Tabulated for frequency on the basis of Kaeding's *Häufigkeitswörterbuch der deutschen Sprache*, which is derived from a count of 10,910,777 running words.
Vander Beke, George, Editor, *A French Word Book*. New York, The Macmillan Company. In Press.
Tabulated for range and frequency on a count of 850,000 and for frequency on 1,250,000 running words.
Wood, Ben D., "A Comparative Study of the Vocabularies of Sixteen French Textbooks," *Modern Language Journal*, February, 1927.
Note: For a list of the words most frequently used in English, see:
Horn, Ernest, *A Basic Writing Vocabulary*, 10,000 Words Most Commonly Used in Writing. College of Education, University of Iowa, Iowa City, Iowa, 1926.

II. Enrolment

- Wheeler, C. A., and others, *Enrollment in the Foreign Languages in Secondary Schools and Colleges of the United States*. New York, The Macmillan Company, 1928.

III. Post-Scholastic Use of Modern Languages

- O'Shea, M. V., *The Reading of Modern Foreign Languages*, U. S. Bureau of Education, Bulletin, 1927, No. 16. 78 pp. and 42 tables. Government Printing Office, Washington, D. C.

IV. Prognosis

- Henmon, V. A. C., *Achievement Tests in the Modern Foreign Languages*. New York, The Macmillan Company, 1928.

V. Reading

- Buswell, Guy T., *A Laboratory Study of the Reading of Modern Foreign Languages*. New York, The Macmillan Company, 1927. 100 pp., 43 plates, 11 tables, 15 figures.

VI. Teacher Training

- Stuart, Hugh, *Training of Modern Foreign Language Teachers for the Secondary Schools of the United States*. Teachers College, Columbia University, New York City, 1927. 111 pp., 25 tables.

VII. Testing for Achievement in Modern Languages

- Wood, Ben D., *New York Experiments with New-Type Modern Language Tests*. New York, The Macmillan Company, 1927.
See also: Smith, Henry Lester, and Wright, Wendell William, *Second Revision of the Bibliography of Educational Measurements*, Bureau of Cooperative Research, Indiana University, Bloomington, Ind., 1927, pp. 133-150.

² An enterprise made possible by a grant from the Carnegie Corporation, by the effective collaboration of the American Council on Education and the U. S. Bureau of Education, and by the assistance of numerous specialists in education and in modern languages. The completed study will consist of 17 volumes.

³ When this table was compiled, the French Word Book was not yet off the press.

See references in footnote 1 above.

Enrolment in foreign language classes—
More high-school students are enrolled in Latin classes than in all the modern language classes combined—in 1925 the estimated total

number of high-school students enrolled in modern languages was 784,352; in Latin, 794,085.¹

¹ See Wheeler, C. A., and others, *Enrollment in the Foreign Languages in Secondary Schools and Colleges of the United States*, The Macmillan Company, New York, 1928.

TABLE 1.—TWENTY-FIVE MOST COMMON WORDS IN THREE LANGUAGES

(Note: The Spanish list is not comparable with the German and English lists, since approximately the first 189 most common words in Spanish were eliminated from the count.)

	Spanish ¹		German ²		English ³
1.....	parte	part	der	the	I
2.....	medio	half	und	and	the
3.....	amor	love	zu	to	and
4.....	tierra	earth	in	in	to
5.....	agua	water	ein	a, one	a
6.....	hallar	to find	haben	have	you
7.....	nombre	name	werden	will, to be	of
8.....	encontrar	to meet	er	he	in
9.....	servir	to serve	von	from	we
10.....	persona	person	ich	I	for
11.....	voz	voice, vote	nicht	not	it
12.....	rey	king	sie	she	that
13.....	echar	to seek	mit	with	is
14.....	obra	work	sein	be	your
15.....	modo	mode, manner	aus	out	have
16.....	cielo	sky	so	so	will
17.....	pueblo	village	sich	self	be
18.....	luz	light	nehmen	take	are
19.....	fuerza	strong	auf	upon	not
20.....	gente	people	dieser	this	as
21.....	mar	sea	dass	that	at
22.....	recibir	to receive	es	it	this
23.....	punto	point	vor	for	with
24.....	ultimo	last	über	over	but
25.....	alto	high	an	on	on

¹ Buchanan, Milton A., *A Graded Spanish Word Book*, p. 18. University of Toronto Press, Toronto, Canada, 1927.
² Morgan, B. Q., and Purin, C. M., *A German Word Book*, p. 1. New York, The Macmillan Company, 1928.
³ Horn, Ernest, *A Basic Writing Vocabulary*, College of Education, University of Iowa, Iowa City, Iowa, 1926.

TABLE 2.—PERCENT WHICH FOREIGN LANGUAGE ENROLMENT IS OF TOTAL HIGH-SCHOOL ENROLMENT, DISTRIBUTED ACCORDING TO SIZE OF COMMUNITIES

Foreign Language Enrolment		Size of Community			
		Less than 2,500	2,500 to 29,999	30,000 to 99,999	100,000 and over
Latin enrolment for 1921-22, not including grades 7 and 8 of junior high school. ¹	Percent of total high-school enrolment.....	30.7	28.6	25.7	23.3
	Percent of total Latin enrolment.....	37.0	29.0	11.0	23.0
Modern Foreign Language enrolments for spring session, 1925, with grades 7 and 8 of junior high school. ²	Percent of total high-school enrolment.....	15.0	22.0	25.0	34.0
	Percent of modern foreign language enrolment.....	15.0	25.0	15.0	45.0

Read table thus: In 1921-22, in communities of less than 2500 population, the number of pupils enrolled in Latin was 30.7 percent of the total high-school enrolment in these communities. Thirty-seven percent of the total Latin enrolment in the United States (in all sized communities) was found in communities of less than 2500 population.
The enrolment in modern language classes, in 1925, in communities of less than 2500 population, was 15 percent of the total high-school enrolment in these communities. It was also 15 percent of the total modern language enrolment of all communities included in the *Modern Foreign Language Study*.
¹ Classical Investigation, p. 276.
² *Enrollment in the Foreign Languages in Secondary Schools and Colleges of the United States*, p. 82.

The percentage of modern language enrolment in secondary schools varies directly and the percentage of Latin enrolment varies inversely with the size of the community. This same general relationship holds between foreign language enrolments and size of school. Table 2 shows that while approximately two-thirds of the Latin enrolment is in communities under 30,000, 60 percent of the modern language enrolment is in communities of more than 30,000.

More than one-half of the total modern foreign language enrolment is in secondary schools with over 1000 pupils. Table 3 shows that the percent of the total high-school enrolment taking modern foreign language courses varies from 12 percent in the West Central states to 45 percent in the New England states.

A larger percentage of college than high-school students take modern foreign languages—Table 4 shows that, while the percent of the total college student body taking French or Spanish is about twice that of the high-school, for German it is about nine times as great. From these figures, some suggest that college preparatory students should take more modern language courses while in high school.

In 1925 slightly over 40 percent of the students entering higher institutions brought French credits; less than 20 percent, Spanish credits; and an insignificant number, credits in German and Italian. Of those offering French, 37.7 percent offered three or more points.

The reading of modern foreign languages—Is the time devoted to the study of foreign languages in high school or in college well spent? To answer this question, in the *Modern Foreign Language Study*¹ testimony was gathered from a sampling of 6400 people who had pursued modern foreign languages for at least two years in high school or in college, or in both, and who had been out of high school or college for at least eight years. A summary of this testimony showed that the percentage of people who believe that the time devoted to a foreign language was profitably spent increases with the time devoted to the study. The combination of study both in high school and college seems to yield the best results.

Use of foreign language after graduation—Do those who have pursued modern foreign language in high school or in college read

TABLE 4.—COMPARISON OF HIGH-SCHOOL AND COLLEGE MODERN FOREIGN LANGUAGE ENROLMENT IN 1925¹

Language	Percent of total high-school enrolment taking courses in	Percent of total college enrolment taking courses in
French	13.6	29
Spanish	9.6	17
German	1.2	10

¹ See: *Enrolment in the Foreign Languages in Secondary Schools and Colleges of the United States*, by Carleton A. Wheeler and others, p. 401. New York, The Macmillan Company, 1928.

¹ See: O'Shea, M. V., *The Reading of Modern Foreign Languages*, U. S. Bureau of Education Bulletin, 1927, No. 16. Government Printing Office, Washington, D. C.

TABLE 3.—PERCENT MODERN FOREIGN LANGUAGE ENROLMENT IS OF TOTAL ENROLMENT, CLASSIFIED INTO EIGHT GEOGRAPHICAL REGIONS¹

Region	Percent modern foreign language enrolment is of total high-school enrolment	Region	Percent modern foreign language enrolment is of total high-school enrolment
New England	45	West Central	12
Middle Atlantic	36	Southwestern	29
Southern	21	Northwestern	17
North Central	14	California	32

¹ Based on data in Table II, *Enrolment in the Foreign Languages in Secondary Schools and Colleges of the United States*, pp. 95-123.

new material in the original after graduation? The *Modern Foreign Language Study* shows that 69 percent of those who had pursued French for two years in the high school have not read anything in the original since graduation. Sixty percent of those who studied it for three years and 37 percent of the four-year group have read nothing in the original since graduation. For German and Spanish, the situation is even less favorable. Data relative to those who began modern foreign languages in college show that only 50 percent have read varying amounts of foreign languages since graduation—and these largely for pleasure.

Of what significance is the fact to modern foreign language teachers that considerably less than half of the graduates of both high school and college ever read foreign language in connection with research, travel, business communications, pursuit of occupation, or other practical purposes?

These data face local course-of-study committees and school administrators with such practical questions as the following:

Would better educational guidance and the earlier eliminations from foreign language work of pupils not fitted for it by original capacities, interests, and needs give them opportunity for pursuing more useful studies? Would it result also in raising the general level of achievement in foreign language classes? In some communities, the present large enrolments call for so many teachers that a sufficient number of adequately trained language teachers is not available. If foreign language classes were restricted to pupils who would really profit from them, would there be enough good teachers to go around? How can the teaching of modern foreign languages be made more effective?

What effect has the age of a beginning student on his rate of learning a foreign language?—Buswell,¹ judging from the maturity of fundamental reading habits which result from two years' study of French, states that there is no notable difference between students who begin the study of the language in high

school or at the college level. On the same basis of judgment, children who begin the language in the elementary grades fall very much below the level of language maturity of the high-school and college students at the end of two years.

Which produces better results, the direct or indirect method?—According to Buswell, the method of teaching a foreign language has a striking effect upon the reading habits of students. The maturity in reading which results from two years' study is decidedly greater with students taught by a direct method than with students taught by an indirect translation method. Psychologically the essence of the direct method of teaching is the direct association of foreign symbols with their meaning without the intermediary use of the vernacular.

During equal periods of time, approximately equal degrees of maturity are reached in French, German, and Spanish when these languages are taught by similar methods and under similar conditions.

Conditions which make modern foreign language study more successful in Europe than in this country—After administering modern foreign language tests to 25,000 junior high-school pupils in New York City, Wood² was convinced of the stark fallacy of taking calendar-time spent "studying" a modern language, or rather attending modern language classes, as a measure of achievement in that language. Comparison of the foreign language situation in this country with that in Europe suggested that only a small fraction of these 25,000 pupils belonged in foreign language classes. According to Wood, we have tried to put foreign language study in the common curriculum and have unjustifiably assumed it would be as successful as it has been in what Europeans call secondary education. We have failed to consider the fact that,

In Europe foreign language instruction (a) is restricted to highly selected students, who are really competent to learn a foreign language in addition to the native language, and who can reach a general

¹ Buswell, G. T., *A Laboratory Study of the Reading of Modern Foreign Languages*, p. 92. New York, The Macmillan Company, 1927.

² See: Wood, Ben D., *New York Experiments with New-Type Modern Languages Tests*, p. 8. New York, The Macmillan Company, 1927.

culture level high enough to make mastery of a foreign language useful in adult life activities; (b) is given by teachers of a high general culture level, whose mastery of the language itself and whose knowledge of the culture and civilization of the people that use it are above question, and who have had expert pedagogical training; and (c) is continued, when once begun, long enough to make possible a genuine mastery of the language itself and a real acquaintance with the culture, civilization, and history of the people that use it.

What is the least number of years that a student may "take" a modern language with profit?—Individual differences are so great that no general answer will suffice. Recent surveys such as that of junior high-school pupils in New York¹ show that some pupils learn more foreign language in one semester than others learn in four semesters. The final answer is probably a combination of good tests of general intelligence used as prognostic devices and trial-periods in modern language classes in which the amount and rate of progress of each individual are ascertained at least once each month, with a view to making such trial-periods as short and as effective as possible. To make trial-periods short we must have accurate and comparable measurements of defined achievements.

*Testing for achievement in the modern foreign languages*²—The New York experiment with new-type modern language tests was a state-wide objective survey of student-achievement. One ninety-minute examination was used for all year-classes in each language. This insured comparability between the measures of achievement in all year-classes on a state-wide basis. The results of this test suggest a way of escaping from the old time-serving conception of language achievement.

According to the New York study, one ninety-minute examination is adequate to measure the whole range of achievement in high-school modern language work, i. e., the achievement of students in second, third, and fourth-year modern language classes. These examinations were based on carefully selected objective data, such as word-counts and inventories of grammars, and were further checked by experimental evidence. Each part of these new-type tests was carefully scaled in difficulty on the basis of actual responses of students, so that the whole range of achievement was covered by small and regular increments of difficulty.

Research in High-School Latin³

What proportion of high-school students take Latin?—According to the U. S. Bureau of Education, in 1924, 940,000 pupils, or approximately 27.5 percent of the total junior

and senior high-school enrolment, were taking Latin. This was a slightly larger number than the total number studying all other foreign languages. The enrolment in Greek was about

¹ Wood, Ben D., *op. cit.* p. 100.

² For lists of standardized modern language tests, see:

Department of Superintendence, *The Development of the High School Curriculum*, Sixth Yearbook, pp. 362-3. Washington, D. C., National Education Association, 1928.

Smith, Henry Lester, and Wright, Wendell William, *Second Revision of the Bibliography of Educational Measurements*, pp. 133-50. Bureau of Cooperative Research, Indiana University, Bloomington, Ind., 1927.

Wood, Ben D., *New York Experiments with New-Type Modern Language Tests*. New York, The Macmillan Company, 1927.

³ For more detailed information, those charged with building local courses of study in Latin should see:

American Classical League, Advisory Committee, *The Classical Investigation*, Part One, General Report. Princeton University Press, Princeton, N. J., 1924.

This inquiry enlisted the aid of 48 educational experts and 8,595 teachers, and included data from over 2,000 schools and about 150,000 pupils.

American Classical League, Advisory Committee, *The Classical Investigation*, Part II, Documentary Evidence for the General Report, Princeton University Press, Princeton, N. J., 1925.

Broyley, Cecil R., Thorndike, E. L., and Woodyard, Ella, "A Second Study of Mental Discipline in High School Studies," *Journal of Educational Psychology*, Vol. XVIII, pp. 377-404, September, 1927.

Jeffords, Clyde R., "The Evolution of Latin Teaching," *School Review*, Vol. XXXV, pp. 576-598, October, 1927.

Ruch, G. M., and Stoddard, George D., *Tests and Measurements in High-School Instruction*, Chapter VIII, Part II, pp. 166-174 on Latin. World Book Company, Yonkers-on-Hudson, New York, 1927.

Thorndike, E. L., et al., "An Inventory of English Constructions, with Measures of Their Importance," *Teachers College Record*, Vol. XXVIII, pp. 580-610, February, 1927.

Woodring, Maxie N., *A Study of the Quality of English in Latin Translations*, Teachers College Contributions to Education, No. 187. Bureau of Publications, Teachers College, Columbia University, New York City, 1925.

Woody, Clifford, *The Ulman-Kirby and Godsey Latin Tests, and the Carr English Vocabulary Tests*, Bulletin No. 56, 1923, and Bulletin No. 64, 1924. Bureau of Educational Reference and Research, University of Michigan, Ann Arbor, Mich.

Note: For a list of texts purporting to embody the results of the Classical Investigation, see pages 380-382, *Sixth Yearbook*, Department of Superintendence, National Education Association, Washington, D. C., 1928.

11,000. In the public high schools, nearly one-half of the Latin enrolment is in the ninth grade or below, while only one-fifteenth is in the twelfth grade. Of all pupils who begin Latin in the secondary schools, 69 percent study it for only one or two years.

What are the valid aims in the teaching of Latin?—According to the *Classical Investigation*, these aims are valid for the secondary course as a whole:

1. Increased ability to read and comprehend Latin.
2. Increased understanding of those elements in English which are related to Latin.
3. Increased ability to read, write, and speak English.
4. Increased ability to learn other foreign languages.
5. Development of correct mental habits.
6. Development of an historical and cultural background.
7. Development of right attitudes toward social situations.
8. Development of literary appreciation.
9. Elementary knowledge of the simpler general principles of language structure.
10. Improvement in the literary quality of the pupil's written English.

Are the ultimate objectives of the teaching of Latin being realized?—Studies¹ based on reports from 85,000 pupils show that the average amount of time spent outside of class on the preparation of Latin lessons is greater than that spent on any other subject.

Even with this expenditure of time, there is ample evidence, according to the *Classical Investigation*, that really satisfactory results are not at present being secured.

Cumulative evidence from many different sources indicates that this situation is largely due to congestion arising from introduction into the course of too many formal elements, especially during the first year, too early introduction of the first classical author to be read, failure to include in the course abundant easy reading material for the purpose of developing early the pupil's ability to read Latin

as Latin, prescription of too large an amount of Latin to be read intensively, lack of sufficient variety in the choice of reading material, and failure to give adequate emphasis to attainment of the ultimate objectives.—Part One, p. 91.

What should be included in the high-school Latin course?—These are the recommendations made in the *Classical Investigation* and the *Sixth Yearbook*:²

Reading material should be continuous "made Latin" from the earliest possible moment; it should be well graded in difficulty, interesting, and rich and varied in details of classical life; and it should be constantly illuminated with collateral reading in English. . . . Confinement to one author for a long period should not be made before the third semester of the four-year course. Functional learning both requires and permits a much more gradual distribution of formal elements over the first three semesters than at present.

The major topics which should be presented in the Latin and in the supplementary English readings include the daily life of the Romans; characteristic Roman traits; classical history, traditions, and government; the topography and geography of the ancient world; the political, social, and economic attainments of the Romans; the general significance of Rome, and her influence on Western civilization.

The vocabulary recommended for mastery should be from 400 to 500 words for the first year; and about 500 for each succeeding year. A much larger number of words may be casually introduced, provided excessive detail and confusion are avoided. The selection for mastery should be based both upon later usefulness in Latin and upon richness of contribution to the English vocabulary.³

What methods are most effective in teaching Latin?—Methods in quite general use, but strongly disapproved by the *Classical Investigation* are: (1) Attack on the Latin sentence in a non-Latin order (i. e., subject, then verb, then dependent elements); (2) translation as a means to comprehension, especially if it adheres literally to the Latin; (3) looking up word meanings as a first step in comprehension; (4) in advanced work, the requirement

¹ Uhl, Willis L., "How Much Time for Latin?" *The Classical Journal*, Vol. XIX, January, 1924, pp. 215-221; "The Time Element in High Schools," *School Review*, Vol. XXXII, February, 1924, pp. 105-121.

² Department of Superintendence, *The Development of the High School Curriculum*, Sixth Yearbook, Chapter XVIII. National Education Association, Washington, D. C., 1928, p. 376.

³ One of the objective studies which contribute data on this point is the Thorndike-Grinstead Word Count. This study gives a definite list of the words derived from Latin most frequently occurring in English and a list of the Latin words most important for the interpretation of these English derivatives. See: American Classical League, Advisory Committee, *The Classical Investigation*, Part Two. Princeton University Press, Princeton, N. J., 1925.

Grinstead, Wren Jones, "A Report of the Latin-English Word Count of the American Classical League," *Teachers College Record*, Vol. XXVI, No. 1, September, 1924, pp. 32-46.

of translation of the entire passage as the chief activity; (5) the memorization of forms and rules of syntax, in advance of actual experience of them in reading; and (6) syntactical or inflectional dissection of a reading passage following its comprehension or translation. On no point is the report more emphatic than on this.

Sound method centers around comprehension, to which syntax, inflection, and the oral and written use of Latin are auxiliary. The essential of sound method in syntax and inflection is to make them functional, rather than formal.

Who should study Latin?—According to one writer,¹ the present junior and senior high-school population consists of these three groups: (1) Those who should study Latin taught in the more or less traditional fashion; (2) those

who should study a modified Latin; and (3) those who should not study Latin at all.

The first class is made up of children with intelligence somewhat above the average, with an inclination for languages. Latin will be for them a vocational, a disciplinary, and a cultural subject. For them, both content and method will be modernized, but the essential characteristics of the old Latin course will be preserved.

The second class will probably study Latin only for a year or two. They should have a course that will emphasize the contribution of Latin to English and that will familiarize them with the Roman character and culture. In content and method this will mean a decided change from the traditional course.

The interest and welfare of the third class demand that they be advised away from Latin.

High-School English²

High-school graduation requirements in English—English is the most universal constant. Of the 41 states which have particular subject requirements for graduation, 19 require 8 semester credits or 4 years of English; and 22 require 6 semester credits or 3 years.

A study of several hundred individual schools shows that the four-year requirement is general throughout eastern and southern schools, and the three-year requirement runs a close second in north central and western sections. Small schools usually include four years of English among the constants.³

English not only a subject of instruction, but the means of communication used for teaching all the subjects—All teachers in the school should have a share in the task of teaching correct and effective English expression. Only through the cooperation of all members of the staff can any school maintain the social requirements of good usage.

Improvement in a pupil's spoken and written English will come much faster if all the teachers in a school help by refusing to tolerate either oral or written language which is notably ungrammatical or slovenly. The pupil's

See: Sage, Evan T., "Who Should Study Latin?" *The Classical Journal*, Vol. XX, No. 3, December, 1924, pp. 143-151.

² Among the references which local course of study committees and teachers interested in improving their teaching of English are urged to review are the following:

Department of Superintendence, *The Junior High School Curriculum*, Fifth Yearbook, Chapter IX. National Education Association, Washington, D. C., 1927.

Department of Superintendence, *The Development of the High-School Curriculum*, Sixth Yearbook, Chapter XIV. National Education Association, Washington, D. C., 1928.

Clapp, John M., Chairman, "Report of the Committee on the Place and Function of English in American Life," *The English Journal*, Vol. 15, No. 2, February, 1926, pp. 110-134.

Coale, Willis Branson, *The Professional Needs of Teachers of English*. New York, Bureau of Publications, Teachers College, Columbia University, 1928.

Committee of the National Education Association, *Reorganization of English in Secondary Schools*, U. S. Bureau of Education Bulletin, 1917, No. 2.

Gates, Arthur I., *The Improvement of Reading: A Program of Diagnostic and Remedial Methods*. New York, The Macmillan Company, 1927.

Gray, William S., Chairman, *Report of the National Committee on Reading*. Part I, The Twenty-Fourth Yearbook, National Society for the Study of Education. Public School Publishing Co., Bloomington, Ill., 1925.

Hudelson, Earl, *English Composition, Its Aims, Methods, and Measurement*, The Twenty-Second Yearbook, National Society for the Study of Education, Part I. Public School Publishing Co., Bloomington, Ill., 1923.

Johnson, Roy Ivan, *English Expression: A Study in Curriculum-Building*. Bloomington, Ill., Public School Publishing Co., 1926.

Willig, Matthew H., *Valid Diagnosis in High-School Composition*. New York, Bureau of Publications, Teachers College, Columbia University, 1926.

Woodring, Maxie Nave, and Benson, Rachel Theresa, *Enriched Teaching of English in the High School*. New York, Bureau of Publications, Teachers College, Columbia University, 1927.

Requirements for High-School Graduation, U. S. Bureau of Education, Bulletin, 1928, No. 21.

quality of English is the school's business quite as much as it is that of the teacher of English. The latter can properly be held responsible only for instruction in the technic; but the whole school and extra-school life affords the practice. English is a cooperative subject. No one teacher can get results alone. The results accomplished in English are an index of what the school stands for.

The Baltimore course of study¹ urges cooperation between the English department and other departments for even more vital reasons:

Correlation between the departments shows the pupils that the knowledge gained in one department may be appropriated to advantage in another; that the various subjects they study are not isolated things, but have relation one to the other; that all studies bear some relation to their lives; and that they all serve in some way to help them to interpret life.

Three major objectives of the teaching of English—A review of recent secondary school courses in English shows that emphasis is placed, not so much upon the acquirement of facts about books and authors, as upon the creation of a love for worthwhile reading and the development of facility in oral and written expression. Most of the potential values in the study of English can be grouped under these three heads: (1) Facility of expression, (2) power of interpretation, and (3) appreciation.

Among the factors involved in facility of expression are: (1) Accuracy of statement—including the choice of appropriate words and grammatical sentence construction, (2) rapidity in correct oral and written expression, and (3) attractiveness or beauty of language.

Power of interpretation involves skill in getting the thought readily, fully, and accurately from speech as well as from the printed page.

Literary appreciation involves good taste in the use of language, insight into and regard for literary content, and good judgment as to the merit of literary effort.

How determine the content of high-school English courses?—Among the various methods which have been used are these:

1. *Survey of vocational needs*—Inquiries sent to people in many occupations, asking them to list the uses which they make of language and their typical difficulties.

The Clapp report² is an illustration of this type of study. It shows the frequency of use of different language activities from 253 occupational groups, including 2615 people in 300 towns in 35 states.

2. *Analysis of prevailing school practice*—Inquiries sent to heads of English departments of high schools and representatives of colleges.

Davis's study in the September, 1926, issue of the *North Central Association Quarterly* cites current English requirements in junior and senior high schools as to credits, recitations per week, length of period, pupil grouping, and relative emphasis on literature, language, oral composition, argumentation, library instruction, outside reading, magazine and newspaper study, and textbooks.

3. *Statistical studies of children's errors in capitalization and sentence structure*—These studies³ show what usages in punctuation are most important. They assume that frequency of use is a measure of importance. Some studies also show the comparative difficulty of these various practices for public school pupils.

4. *Summary of judgments of teachers and pupils*—Intensive studies⁴ have been made of children's interests as an aid in the selection of content for courses in literature and also for building up lists for outside or parallel reading.

¹ Baltimore Public Schools, *English Course of Study for Junior and Senior High Schools*. City Board of Education, Baltimore, Md., 1924, p. 11.

² "Report of Committee on Place and Function of English in American Life," *English Journal*, Vol. XV, pp. 110-34, February, 1926.

³ Ruhlen, Helen, and Pressey, S. L., "A Statistical Study of Current Usage in Punctuation," *The English Journal*, Vol. XIII No. 5, May, 1924, pp. 325-331.

Pressey, S. L., "A Statistical Study of Usage and of Children's Errors in Capitalization," *The English Journal*, Vol. XIII No. 10, December, 1924, pp. 727-732.

⁴ As illustrations, see: Uhl, Willis L., *The Materials of Reading, Their Selection and Organization*. New York, Silver, Burdett and Company, 1924. Washburne, Carleton, and Vogel, Mabel, *Winnetka Graded Book List*. Chicago, American Library Association, 1926.

Note: While the findings of this study are valuable for grades 5-8, the senior high school will find them suggestive for building up similar lists for outside or parallel reading.

Weiser, A. B., and Ashbaugh, E. J., "What Books Do Junior and Senior High-School Students Read?" *Educational Research Bulletin*, Ohio State University, Columbus, Ohio, Vol. III, pp. 223-8, 250-3, and 265-6, September 17 and October 1, 1924.

5. *Testing pupils' ability to comprehend certain literary selections*—Irion¹ found that (a) literary comprehension of ninth-grade pupils can be fairly accurately measured; (b) comprehension varies with literary type—poetic type being most difficult; and (c) literary comprehension correlates to a considerable degree with intelligence and with scores on the Thorndike McCall Reading Scales.

6. *Analysis of social and business correspondence*—The 10,000 words most commonly used in writing, and ranked according to frequency of use, are included in Horn's *Basic Writing Vocabulary*, published by the University of Iowa.

7. *Arranging an environment which sets free the creative spirit of youth*—Teachers who have tried this method, state that it is one of the most helpful means of discovering the capacities of their pupils.²

The high school must build on the work of the lower school—The high school inherits not only the product of the elementary school, but also the responsibility of continuing the processes assigned in the elementary school to the so-called language arts—reading, writing, spelling, composition, and grammar. Ideally, pupils should come well schooled in these subjects; as a matter of fact, many of them do not. Hence for certain pupils the first year's work in high school often has to be modified to fit conditions and to carry these pupils forward as far as possible toward the goals of the high-school English department.

No senior high-school course which ignores the partly trained minority can be considered satisfactory. Backward pupils must be given training which meets their special needs, although, as far as the classroom is concerned, this training must be given in a form which will impose no handicap on the more capable members of the class.

Further training in the high school in reading, spelling, writing, and grammar is essential for two reasons: (1) The primary function of the high school for the many is to complete the training begun in the lower school;

(2) this training, in many cases, is necessary in order to go forward to new work with any promise of success.

Sequence and continuity in the English course should be developed through a careful articulation of the work of the elementary school with the junior high school, and the work of the junior with the senior high school. Each teacher should be familiar with the entire course of study in English for elementary and high schools.

English courses adapted to different groups—The San Francisco course of study in *English for Special Groups*³ is illustrative of several of the newer courses which recognize individual differences and language difficulties. This course suggests that, when numbers permit, classes be formed according to:

1. Retardation due to language difficulties:

- a. Mentally retarded and also retarded through language difficulties
- b. Retarded not by mentality but by virtue of inability to understand and use the English language. The aim here is to advance these pupils as quickly as possible so that they may enter already existing groups.

2. Retardation due to mentality:

The work expected from a retarded group depends upon the general interest, ability to work independently or cooperatively, and skill in oral and written expression. Generally the retarded pupils are poor readers, writers, spellers, and thinkers. They sometimes learn to read more rapidly by having the teacher read to them, while they read the same selection orally. They learn many things by dictation. Objective tests and silent reading tests quicken their power to read intently.

With a retarded group, the minimum requirement should be the ability to reproduce the story, either orally or in writing. Simple dramatization should be encouraged by the teacher.

Poetry should be read for appreciation, for the narrative and descriptive elements, and the rhythmic swing.

A course outlined for special groups should be made so flexible that the teacher may feel free to select such materials as may be used

¹Irion, Theodore W. H., *Comprehension Difficulties of Ninth-Grade Students in the Study of Literature*. Teachers College, Columbia University, New York City. 116 pp.

²See: Mearns, Hughes, *Creative Youth*. Garden City, N. Y., Doubleday, Page and Company, 1925. 234 pp.

³San Francisco Public Schools, *English for Special Groups*, High School, Grades IX-XII. Board of Education, San Francisco, Calif., 1928, p. 15.

to advantage with a particular group, since these classes vary in ability from term to term.

Relation between the literature and composition of a grade—According to the Baltimore City course of study, this relationship comes largely through reading.

The student must read to attain the requisite knowledge of literature; he must read aloud or silently in order to make real progress in spoken or written expression. Thus the literature studied in any year furnishes the material upon which the teacher should draw to give exercise in oral expression. But the chief source for the material in composition lies elsewhere. It lies in the world outside of books. It is in the experience of the student himself; in his observation of his environment; in his investigation of his problems. In other words, it is life itself which he should reflect in spoken and in written speech.

According to some, experience shows that the best results are secured by treating composition and literature as one subject, the composition practice drawing upon the literary selections studied for models and themes.

In many of the newer courses of study, composition and literature occupy approximately equal amounts of time—composition through actual practice in speaking and writing, and literature through the actual reading of books and journals.

Developing literary appreciation in the senior high school—Over-emphasis in matters of technic and literary criticism is unwarranted in the high school. While in the eleventh and twelfth grades technical details of structure should not be overlooked, the method of ap-

proach should not be formal, or the structure emphasized at the expense of thought and feeling. A text in literature must not be regarded as a convenient means for illustrating rhetorical principles, for it is a much greater thing; it is an interpretation of life itself. A pupil should get sufficient joy from a well-selected high-school text in literature, so that in his leisure hours he will return to it of his own accord and with ever-increasing pleasure because of its human interest and content. The highest use of all literature is not to fill us with facts, but to set us thinking.

To illustrate, the Lansing, Mich., course of study¹ urges that:

In the study of the novel and the drama, setting, plot, and character delineation should be emphasized; in the short-story, the single aim of the writer and the single impression of the reader; in the one-act play, the author's economy and art in building upon a single dramatic incident; in lyric poetry, the writer's thought and mood.

What help from tests?—It is recommended that, whatever type of test is used—achievement, prognostic, or diagnostic—each be used to improve the effectiveness of individual instruction. While group standardized tests in the mechanics of composition offer a basis of comparison with the norms of the country, and are good measures to indicate the ability of the group, they are poor measures to discover the errors that individual pupils make in speaking and writing.

Objective tests can be made which measure, with a fair degree of accuracy, reading ability, comprehension, and literary information.²

¹ Lansing Public Schools, *Course of Study in English, Grades I-XII*, Board of Education, Lansing, Michigan, 1926, p. 160.

² See: Ruch, G. M., and Stoddard, George D., *Tests and Measurements in High School Instruction*, Yonkers-on-Hudson, World Book Company, 1927, pp. 97-135, for a list and discussion of English (language, grammar, spelling, reading, and composition) tests.

Curriculum Studies in the Social Sciences¹

"Scientific" versus the "guessing" method in selecting content²—Until recently, courses of study for the training of pupil citizens have been compiled by a *a priori*, "guessing" methods. Often the result was a body of poorly selected and unevaluated material, far too bulky and comprehensive to permit of adequate treatment. Today, effort is made to determine scientifically what specific information, skills, concepts, generalizations, appreciations, attitudes, and ideals should be developed. The chief problem is to select from the vast amount of available material those socially valuable activities of greatest relative worth to citizens. Textbook writers, according to Rugg's summary of studies which analyze social science texts, have attempted to solve this problem by encyclopedic methods and have included some facts about many persons, dates, countries, cities, topics, concepts, and problems. The students' failure to learn, retain, and apply these often unrelated facts has led research workers to analyze content in terms of the actual needs of citizens and in terms of relative values.

Rugg³ has summarized and interpreted fifty investigations of the social values of history, geography, civics, economics, and sociology. A few of the indications of these studies are presented in subsequent paragraphs. While evidence from some studies is highly tentative, it is, nevertheless, suggestive to curriculum makers.

Can the problems of citizenship be determined with precision?—These four objective methods have been used:

1. Analysis of topics and problems discussed by newspapers and magazines
2. Judgment of lay citizens concerning problems
3. Statement of problems found in political platforms
4. Statements of "frontier" thinkers, specialists in the study of society.

In selecting periodical literature from which to make an analysis of important issues, the basis should not be wide circulation but rather the question as to which periodicals are most "alive" to critical issues.

In determining what particular problems of contemporary society are of greatest relative

¹ Local course-of-study committees and teachers interested in improving their work in the social studies will need more detailed findings of research than are presented in this Bulletin. They are urged to see:

American Historical Association and the National Education Association, "Reports of a Joint Committee on History and Education for Citizenship," *The Historical Outlook*, Vol. X, pp. 273-81, May, 1919; Vol. XI, pp. 73-83, 111-5, February, March 1920; and Vol. XII, pp. 87-98, 119-43, 165-84, and 208-18, March, April, May, and June, 1921.

Bamesberger, Velda C., *An Appraisal of a Social Studies Course*, Contributions to Education, No. 328. Teachers College, Columbia University, New York City, 1928.

Bixler, G. K., "Social Problems of the Labor Group," Summary and Interpretation in: Bobbitt, Franklin, *Curriculum Investigations*, Supplementary Educational Monographs, No. 31. University of Chicago, Chicago, Ill., 1926.

Dawson, Edgar, *The History Inquiry*. The McKinley Publishing Company, Philadelphia, Pa., 1924.

Department of Superintendence, "The Social Studies," Chapter VII, Third Yearbook, *Research in Constructing the Elementary School Curriculum*, pp. 217-78. National Education Association, Washington, D. C., 1925.

Department of Superintendence, "The Social Studies," Chapter XIII, Fourth Yearbook, *The Nation at Work on the Public School Curriculum*, pp. 323-79. National Education Association, Washington, D. C., 1926.

Department of Superintendence, "Junior High School Social Studies," Chapter XII, Fifth Yearbook, *The Junior High School Curriculum*, pp. 213-91. National Education Association, Washington, D. C., 1927.

Department of Superintendence, "Research in High School Social Studies," Chapter XIII, Sixth Yearbook, *The Development of the High School Curriculum*, pp. 289-309. National Education Association, Washington, D. C., 1928.

Gambrill, J. M., *Experimental Curriculum Making in the Social Studies*. The McKinley Publishing Company, Philadelphia, Pa., 1924.

Harap, Henry, *Education of the Consumer*. The Macmillan Company, New York, 1924.

Lee, Baldwin, *Issues in the Social Studies*. Bureau of Publications, Teachers College, Columbia University, New York City, 1928.

Mathews, C. O., *The Grade Placement of Curriculum Materials in the Social Studies*, Contributions to Education, No. 241. Teachers College, Columbia University, New York City, 1926.

Monroe, Walter S., and Foster, I. O., *The Status of the Social Sciences in the High Schools of the North Central Association*, Bulletin 13. Bureau of Research, College of Education, University of Illinois, Urbana, Ill., 1923.

National Society for the Study of Education, "The Social Studies in the Elementary and Secondary Schools," *Twenty-Second Yearbook, Part II*. Public School Publishing Company, Bloomington, Ill., 1923.

Osburn, W. J., *Are We Making Good at Teaching History?* Public School Publishing Company, Bloomington, Ill., 1926.

Rugg, Earle U., *Curriculum Studies in the Social Sciences and Citizenship*, Colorado Teachers College Education Series, No. 3. Colorado State Teachers College, Greeley, Colo., 1928.

Note: The subsequent pages, relative to research in the social studies, have drawn heavily on this volume, which summarizes 50 semi-scientific studies of pioneer students and research workers in the field of the social sciences and citizenship education.

Rugg, Harold O., "Teaching the Social Studies," *The Classroom Teacher* Vol. XI. The Classroom Teacher, Inc., Chicago Ill., 1927.

² Those concerned with the building of social studies courses on a more scientific basis will be interested in following the work of two committees. The first is the "Committee on History and Other Social Studies in the Schools" of the American Historical Association, of which A. C. Krey of the University of Minnesota is chairman. This committee has undertaken a study conducted on a cooperative basis over a period of five years.

The appointment of a committee on social studies was also authorized by the American Council on Education on May 3, 1929.

³ Rugg, Earle U., *Curriculum Studies in the Social Sciences and Citizenship*, Chapter VI, Colorado Teachers College Education Series, No. 3. Colorado State Teachers College, Greeley, Colo., 1928.

worth, it would seem that dispassionate experts, each stating issues in his particular field, can better enumerate these problems than can the average layman. A summary of opinion of laymen, however, should probably not be overlooked.

While political platforms do not yield a complete or critical inventory of political questions, they do give the curriculum-maker a crude check on broad topics.

In the judgment of many, the opinion of "frontier" thinkers, men and women trained in economics, government, and societal needs, are the best source for statements of America's most insistent, crucial, and permanent problems.

How Determine the Content of Social Studies?

What facts have greatest social values?—

The following studies are illustrative of the objective type made to determine what facts have greatest social value. They show that the facts, topics, and problems of large social value are only a small part of the sum total of human experience and knowledge in each field; and that the socially valuable facts are now insufficiently provided for in the school curriculum.

These four criteria are used to discover facts of greatest social and civic value:

1. Occurrence in periodicals of general circulation.
2. Occurrence in books and encyclopedia articles dealing with modern problems.

The application of the two above criteria requires the analysis of a wide range of periodicals, books, and encyclopedias and the listing of frequency of mention of topics. Rugg¹ summarizes nine such studies, which show the relative emphasis upon continents, principal European countries, cities, characters in American history, economic topics, and historical and geographical topics.

3. Judgment of experts as to what are socially valuable facts.

For example, one study ascertained a standard

list of dates in American history by asking 150 members of the American Historical Association to rank the twenty most important dates out of a long list found in elementary school histories.²

4. Various other standards or criteria.

To illustrate, one study ranks 52 countries according to their relative importance by using these criteria: (a) The area of the country in square miles, (b) population, (c) total value of imports, (d) total value of imports from the United States, (e) total value of exports, and (f) total value of exports to the United States.³

The shortcomings of the methods mentioned above for selecting course-of-study content are apparent. The most that would be claimed for some of these technics, even by those investigators who have used them, is that they represent groping steps in the direction of scientific procedure in social science curriculum construction. They offer a better basis than pure guess-work in selecting segments of worthwhile content.

Activities and Traits of a Good Citizen

Objective determination of desirable knowledge and traits required of a good citizen—

Most people would agree that an essential step in developing good citizenship is a decision as to what knowledge is required and also what traits characterize good citizens. One or more efforts have been made to discover these factors, using each of the following methods:

1. Listing major classes of reading material bearing upon citizenship.

Rugg⁴ has reviewed three studies of this type which rest upon the assumption that analysis of reading materials will reveal broad categories which indicate "what man is thinking about, what he is dealing with, and what activities he is performing."

2. Discovering the duties and difficulties of citizenship.

Interviewing laymen, analyzing editorials in periodicals, and analyzing special articles on citizenship are among the methods used in discovering the necessary equipment of a good citizen.

3. Securing subjective judgments of desirable and undesirable citizenship traits.

In applying this method, Bobbitt⁵ secured the consensus of opinion of large groups of experienced

¹ Rugg, Earle U., *Curriculum Studies in the Social Sciences and Citizenship*, pp. 31-52, Colorado Teachers College Education Series, No. 3. Colorado State Teachers College, Greeley, Colo., 1928.

² See: Wooters, J. E., "Elementary American History Standards; Results of an Investigation Carried on to Determine the Most Important Dates for Memorizing in the Elementary School," *School and Home Education*, Vol. XXXIV, pp. 152-5, December, 1914.

³ See: Branom, M. E., and Reavis, W. C., "The Determination of the Minimal Essentials of Elementary School Geography," *Seventeenth Yearbook, Part I*, pp. 27-39, National Society for the Study of Education. Public School Publishing Company, Bloomington, Ill., 1918.

⁴ See: Rugg, Earle U., *Curriculum Studies in the Social Sciences and Citizenship*, Colorado Teachers College Education Series No. 3, pp. 70-77. Colorado State Teachers College, Greeley, Colo., 1928.

⁵ See: Bobbitt, Franklin, *Curriculum-Making in Los Angeles*, Supplementary Educational Monographs No. 20. University of Chicago, Chicago, Ill., 1922.

people as to the desirable characteristics and abilities of the good citizen.

Snedden¹ analyzed deficiencies of particular case groups such as "owning farmers," girls of a poor environment, and children of Russian-Jewish immigrants, especially those aged 12-14.

4. Recording of special types of civic training demanded of lay citizens.

Among the methods used are: (a) Listing the causes of litigation revealed by the records of a county clerk over a period of three years;² (b) having several classes in public schools make a record of civic transactions of members of their families;³ and (c) determining standards relative to consumers' needs and discovering extent to which these are applied.⁴

5. Summarizing lists of traits demanded by lay citizens.

These are among the studies which have been made: (a) Several hundred people listed in *Who's Who in America*, representing the fifteen occupations in which the majority of the American people are engaged, were asked to list five or more traits that they considered the most essential to efficient citizenship;⁵ (b) Citizens have been interviewed as to their duties and difficulties;⁶ (c) Books of essays have been analyzed to determine the qualities that citizens should possess;⁷ and (d) Books of etiquette and articles in magazines have been analyzed to discover what forms of conduct society has approved.⁸

6. Discovering how much voluntary reading of "lay" citizens pertains to the social sciences.

To illustrate: The book withdrawals from the New York central and branch libraries for one year were analyzed, as was also the proportion of books of various classes published during that year. According to this study, about four out of every ten non-fiction books withdrawn deal with the social sciences and half of these, in the opinion of librarians, represent what might be called voluntary reading. All librarians consulted, except one, tend to support the claim that there is a leisure time value or objective to be sought in the teaching of the social sciences.⁹

7. Securing the judgment of "lay citizens" concerning the values of school subjects and activities in life.

For example: The judgments of 874 citizens in various occupations, who were high-school graduates, were secured concerning the value of school subjects and activities in later life.¹⁰

How Shall the Content of Social Studies Courses Be Organized?

A unified course versus traditional subject-matter divisions—The content of courses in the social studies is organized at the present time along different lines. Some school systems offer the traditional courses of geography, history, civics, and economics. Others offer a unified course embodying all these subjects. In many school systems, the traditional organization prevails for two reasons: (1) Some believe that the maintenance of separate traditional subject-matter divisions produces the best educational results; (2) others, while accepting the unified course in theory, feel that it is impracticable to put into practice at present due to lack of unified textbooks, unified courses, and teachers prepared for handling these courses.

Those who now organize the social subjects in a unified course feel that geography, history, civics, and economics are so intimately related that the traditional subject-matter divisions impose artificial barriers to the most effective presentation of these materials.

Among those who lean toward unification, considerable difference of opinion exists as to the extent and character of the unifying process. The supporters of the "composite-subject" policy would accept the conventional subject divisions as points of departure, but

¹See: Snedden, David, *Civic Education*. World Book Company, Yonkers-on-Hudson, New York, 1922.

²Alderman, Grover H., "What the Iowa Layman Should Know about Courts and Laws," *School Review*, Vol. XXX, 1922, pp. 360-4.

³Goss, Ralph Ross, *What Civic Knowledge Is Needed by an Indiana Layman?* Master of Arts Thesis, unpublished. Library, University of Indiana, Bloomington, Ind.

⁴Harap, Henry, *Education of the Consumer*. The Macmillan Company, New York, 1924.

⁵Breeze, Retha E., "What Constitutes Good Citizenship," *School Review*, Vol. XXXII, September, 1924, pp. 534-6.

⁶Mahon, T. J., *Duties, Difficulties, and Qualities of Citizens*, Master of Arts Thesis, unpublished. Colorado State Teachers College, Greeley, Colo., 1925.

⁷Bobbitt, Franklin, *Curriculum Investigations*, Supplementary Educational Monographs No. 31, pp. 98-102. University of Chicago, Chicago, Ill., 1926.

⁸Lorenzen, C. H., *Approved Social Behavior as Revealed in Recent Literature*, Master of Arts Thesis, unpublished. University of Chicago, Chicago, Ill., 1925.

⁹Horn, Ernest, "A Study of Library Withdrawals and Books Published," *Twenty-Second Yearbook, Part II*, National Society for the Study of Education, pp. 235-9. Public School Publishing Company, Bloomington, Ill., 1923. This study has been extended by Earle Rugg.

¹⁰Mort, P. R., and Devricks, R. K., "An Accounting of General Values in a Small High-School Curriculum," *School Review*, Vol. XXIX, February, 1921, pp. 113-31.

through better coordination and correlation would present them not as distinct, but as contributory or closely allied subjects.

Most advocates of unification, however, would go farther. They would reject the traditional subject-matter divisions and much of the content associated with them—and would substitute material both old and new organized along lines radically different from the traditional.

This unified course may include diverse materials from two or more of the following subjects: social problems, political and economic geography, history, civics, vocational information, economics, sociology, and current events. Some unified courses are so arranged that there are units of geography, of history, and of civics within the course. According to this plan, it is possible to have both history and civics with related geography in each grade without making any unnecessary subject divisions. History may be the major topic in one unit, civics in another, and geography in another. The several units of work may be expressed in problem form with sub-problems under each or as main topics with sub-topics. The distinguishing characteristic of the unified course is that it begins with a social institution or a political or economic problem, not with a subject such as history or geography. The objective is to find and organize in thought-provoking form the data needed in dealing with these institutions and the problems which grow out of them.

In many courses in the social studies, such as those developed in the University High School of the University of Iowa,¹ the organization of each course is topical, and the form of phrasing is generally problematic.

The Missouri state junior and senior high-school social studies courses,² prepared by a committee appointed by the Missouri State Teachers Association, represents a thought-provoking compromise between the old chronological and topical methods of teaching history and the newer approach through modern social problems.

For many school systems, a compromise between the traditional subject organization and

the unified course is probably desirable—at least as a transitional step. Progress undoubtedly needs to be made in focusing instruction on social institutions and modern problems, but we must not value too lightly the systematic and more complete view which was offered by the carefully refined subject-matter of geography, history, civics, and economics.

An Illustration of a Unified Course

The Missouri social studies courses are examples of unified courses. They consist of these six parts:

I. Seventh Grade—The Background of American Life:

- A. How geographical conditions influence life (Two weeks).
- B. Types of environment and of mankind (Two weeks).
- C. Our inheritance (Two weeks).
- D. How man learned to control natural forces (Two weeks).
- E. How civilization has grown (Four weeks).
- F. Examples of civilization from the Near East (Four weeks).
- G. Examples of civilization from early Europe (Four weeks).
- H. From the old to the new (Four weeks).
- I. Europe preparing for expansion (Four weeks).
- J. The New World the great discovery of the fifteenth century (Four weeks).
- K. From Europe to America (Four weeks).
- L. The English Colonies (Four weeks).

II. Eighth Grade—The United States:

- A. Thirteen colonies to thirteen states, 1776-1781 (Four weeks).
- B. The thirteen confederated states, "The League of Friendship," 1781 to March 4, 1789 (Four weeks).
- C. The new nation, 1789-1801, "A Federal Republic" (Four weeks).
- D. The new nation finding a place among the nations, 1801-1829 (Four weeks).
- E. Life in the new nation, 1800-1829 (Four weeks).
- F. Expansion and conflict, 1829-1865 (Eight weeks).
- G. Reconstruction and getting together, 1865-1900 (Eight weeks).
- H. Working together for our national welfare, 1900 to the present (Four weeks).

¹See: *Courses in the Social Studies for Junior and Senior High Schools*, Extension Bulletins, College of Education Series No. 1 Series Nos. 8, 9, and 10. University of Iowa, Iowa City, Iowa.

²See: *Courses of Study in Junior and Senior High Schools*, Bulletin No. 10, 1928, *Social Studies*, State of Missouri, Department of Education.

III. Ninth Grade—The Practice of American Citizenship:

- A. Introduction: Living Together, Society and Government, and the Individual and Society (Two weeks).
- B. The social organization of society (Three weeks).
- C. Economic phases of social life (Three weeks).
- D. The political organization of society (Twenty-four weeks).
- E. The vocational phases of social life (Four weeks).
- F. Ideals as an important phase of social life (Four weeks).

IV. Tenth Grade—World History:¹

- A. A period of beginnings (Two weeks).
- B. The period of ancient oriental beginnings (Three weeks).
- C. The period of Graeco-Roman civilization (Eight weeks).
- D. The period of civilization in transition (Four weeks).
- E. The period of medieval civilization (Three weeks).
- F. The period of discoveries, explorations, expansions, and reform, 1400 to 1600 (Two weeks).
- G. Modern monarchical governments have their day and their wars (Four weeks).
- H. Industrial and political revolutions (Two weeks).
- I. Modern nations (Five weeks).
- J. Our modern world (Two weeks).
- K. The World War, 1914 to 1919 (Two weeks).
- L. Happenings of our own time (Three weeks).

V. Eleventh Grade—American History: (Twelve main topics.)

VI. Twelfth Grade—American Problems:

Among the problems outlined for discussion are these: Education in American democracy, the problem of the family, immigration, the

negro, crime, poverty and dependence, religion, the rural problem, the problem of the city, unemployment, women and children in industry, conservation and utilization of natural resources, large scale production and capitalistic organization of industry, transportation, communication, and world commerce, money, credit, banking, distribution of the national wealth and income, public opinion, international relations and world peace.

The grade placement of curriculum materials in the social studies—One study,² made to determine the difficulty of reading and graphic materials of the social studies by the objective responses of pupils, involved the testing of nearly 10,000 children in grades 4-12. The results revealed growth of comprehension ability and suggested a basis for grade placement of materials.

Objective measures were obtained for 72 samples of curriculum materials from 45 sources. Samples were chosen from the following types of materials: Episodes, descriptions, expositions, newspaper articles, bar graphs, line graphs, circular graphs, time lines, pictograms, and maps. The assumption was that by testing the ability of a large number of fourth-grade children to comprehend these materials, and by repeating forms of this test year after year on the same children until they graduated from high school, knowledge of the growth of comprehension could be accumulated. Among the conclusions reached were these:

1. Ability to comprehend and interpret the reading and graphic selections used here increases *gradually* from the fourth to the twelfth grade. This is the general tendency. In a few cases the data show increases between consecutive grades.

¹ The World History Course in St. Louis, Mo., (Curriculum Bulletin No. 25, Board of Education of the City of St. Louis) is somewhat similar. Its major topics are as follows:

- A. The Orient—Problem: What did primitive and oriental man contribute to modern civilization?
- B. Greece—Problem: How did the Greeks advance civilization?
- C. Rome—Problem: What were Rome's chief additions to world civilization?
- D. The Middle Ages—Problem: What contributions of the Middle Ages paved the way to modern times?
- E. Modern History—Among the special objectives set up for this period are the following:
 - 1. To gain an understanding of imperialism and the World War.
 - 2. To see the importance of democracy since the War and its problems.

The Denver Course in World History (Course of Study Monograph No. 19, Social Science, Senior High School—Grades 10-12, Public Schools, Denver, Colo., 1926) is made up of these units:

- I. What did primitive and oriental man bequeath to modern civilization? Beginning of time to 490 B. C. (About 13 days.)
- II. How did the Greeks advance civilization? About 776 B. C. to 323 B. C. (About 16 days.)
- III. What were Rome's chief additions to world civilization? About 753 B. C. to 476 A. D. (About 14 days.)
- IV. What contributions of the Middle Ages paved the way to modern times? About 476 A. D. to 1492 A. D. (About 19 days.)
- V. How did the period of the Protestant Revolt advance civilization? About 1500 to 1700 A. D. (About 15 days.)
- VI. How have the political, industrial, and social revolutions of the eighteenth century contributed to modern civilization? About 1700 to 1850 A. D. (About 35 days.)
- VII. What steps have the leading European nations taken in the nineteenth century toward democracy? About 1850 to 1914 A. D. (About 25 days.)
- VIII. What losses and what gains have come from the World War? (About 20 days.)

² Mathews, C. O., *The Grade Placement of Curriculum Materials in the Social Studies*. Bureau of Publications, Teachers College, Columbia University, New York City, 1926.

2. Of the reading materials used in this investigation, the episodes were comprehended somewhat better than the other types in all grades except six and nine.

3. A comparison of the average degree of comprehension of circular, bar, and line graphs shows that, of the samples used in this study, the circular graphs are easiest, the line graphs most difficult, and the bar graphs about midway between the two.

4. The seventy-two samples of printed and graphic materials, which were graded according to the degree to which public school children correctly responded to objective questions about them, may be used as a crude scale to aid in judging the comprehension difficulties of similar curriculum materials.

A few other pioneering studies in this difficult field also promise greater objectivity in grading social science materials.

Can social issues profitably be taken up in high-school social science classes?—One author,¹ after listing 429 issues found in 15 civics textbooks and 524 issues found in 22 treatises in ten technical social fields (such as government, public finance, immigration, labor and capital), and after analyzing the replies of 508 social science teachers as to whether or not they considered in their class discussions the twenty issues most frequently mentioned in the above sources, writes as follows:

It is believed that there is a place in the high school for such a consideration of issues as will encourage and foster the habit of reasoned and unbiased judgment. In a situation where the search is for the truth, where all the available data are marshaled and duly studied, where no preconceived views are imposed and each individual is urged toward a carefully deliberated conclusion of his own—this is truly to be in the atmosphere of the scientific spirit. . . . The introduction of live issues lends vitality to the work of the school; it helps to develop intelligent opinions among pupils on the issues that perplex the society in which they live.

One of the primary needs of the day from the point of view of the schools is a more scientific attitude in dealing with social questions. This calls for the study of live issues in a scientific spirit in the classroom—a study marked by impartiality, candor, and critical thinking, and in which the objective is to teach how to think, not what to think.

The practical difficulties and personal dangers which threaten attempts to study live social issues even in the most scientific spirit are fully recognized. These difficulties, however, do not justify a policy of avoiding everything that is controversial. The school can never fully realize its purpose if such a policy prevails. Some consider it as undesirable to shirk current questions as to promote propaganda concerning them. In their judgment, it is a good thing to make pupils feel that their education is fitting them to cope with matters about which the world is excited; it gives them a sense that scholastic teaching is not divorced from the practical world.

These are among the guards which, if observed, should make practical the discussion of certain live issues in the public schools:

1. Teachers should be carefully trained to distinguish between the approach of the propagandist and the approach of the scientist. The importance of strict impartiality in arriving at final decisions should be clearly realized.

2. The introduction of the study of controversial issues should be made gradually.

3. The community should be taken into the confidence of teachers and school administrators. Class conscious groups, particularly, should understand the impartiality of the school's attitude, and their constructive cooperation be enlisted in maintaining that attitude.

4. Common sense should prevail as to which live and controversial issues are discussed. The school cannot cover all of them. Proper selection should result in the use of topics which are appropriate for the consideration of children, which have large social significance, and which do not arouse unnecessarily warring public emotions.

5. The pitfalls of poor teaching in this field and the danger of misunderstanding on the part of the public should be carefully evaluated, in order that difficulties may be prevented rather than cured.

6. Remember always that the objective is to develop a method of studying controversial issues, not to settle them in the classroom. A tactful teacher will develop a spirit of open-mindedness in pupils by seeing that both sides to controversial issues which come up for discussion are presented. That this is feasible is shown by the data presented in the next paragraph, which show that of a large group of teachers consulted nearly half of them consider controversial issues.

Are controversial issues avoided?—In answer to this question, 48 percent of 508 social science

¹ See: Lee, Baldwin, *Issues in the Social Studies*, Bureau of Publications, Teachers College, Columbia University, New York City, 1928.

teachers answered "Yes"; 49 percent answered "No."¹

One writer² asks pupils to raise these questions in their study of each problem that arises:

1. What are the true facts in this matter?
2. Have I all the facts I need?
3. Is there another side to this question that I have not considered?
4. Are the facts I have read or have been told probably reliable? Can I depend on them as being true? Is there reason to believe that the people who gave the facts are prejudiced?
5. Which side of the question is supported by the most important facts?

Training of the emotions as a means to better civic behavior—If individuals are to cope successfully with our increasingly complex society, they must be trained to take intelligent attitudes regarding the more outstanding social, political, and economic issues. Observation shows that while a man's social conduct is influenced by his sober reasoning, it is also affected by his emotional slants—his passions, his enthusiasms, and his prejudices.³

These facts face those charged with building social studies courses with such questions as these: Can the emotions be guided indirectly better than directly? Are the outcomes of the "problem" type of teaching mainly intellectual or mainly emotional? Should the "appreciation" type of teaching be one of the methods used in the social studies? In answering these questions, we should remember that the aim of our citizenship courses is to develop thinkers and doers, not reciters.

The ultimate purpose of the social studies, according to Dawson, is the "development of faith in human institutions and progress—a faith that progress of the race may be advanced through the social use of scientific knowledge about the character of mankind."⁴

"Social progress must stand on knowledge, understanding, and sympathy; and knowledge must precede understanding and sympathy."⁵

Instead of merely evaluating instruction by oral or written examinations covering subject-matter, teachers should ask themselves questions such as these:

1. Are pupils coming to have some responsibility for social progress—a desire to have a constructive part in bringing it about?
2. Is the spirit of the class such that unsocial acts are disapproved?

The teaching of economics and sociology in the senior high school—Many school systems are debating whether these subjects should be introduced into the senior high school. There has been a steadily growing sentiment that instead of spending three or four years in the senior high school on history, more emphasis should be placed on civic, economic, and social questions. In deciding this issue, each school system should evaluate the content already offered in its social studies program, consider the caliber and development of the local high-school student body, estimate the intrinsic value of economics and sociology, and discover how well prepared the local teaching staff is to offer these subjects.

A committee of Cincinnati teachers⁶ recently reported that economics should be taught in the senior high school in order:

1. To furnish a laboratory for scientific analysis of the laws and facts of our complex economic organization.
2. To create in this laboratory an informed, interested, critical, and socially minded citizenship for constructive handling of dynamic economic problems.
3. To appreciate the fact that industrialism has transformed the old individual order into a social one.
4. To appreciate man's effort in obtaining wealth and using it wisely.
5. To give the students some instruments or tools of thought which will be useful vocationally.
6. To form the habit of using economic truths even when personal motives or principles must be sacrificed.
7. To enrich the students' general reading background and to train for an intelligent appreciation of current literature on the affairs of the day.

¹ See: Lee, Baldwin, *Issues in the Social Studies*. Bureau of Publications, Teachers College, Columbia University, New York City, 1928.

² See: Rugg, Harold O., *Social Science Pamphlets*. Lincoln School, Teachers College, Columbia University, New York City.

³ See: Briggs, Thomas H., *Curriculum Problems*. New York, The Macmillan Company, 1926. Chapter II, Emotionalized Attitudes.

⁴ Dawson, Edgar, *Teaching the Social Studies*, p. IX. New York, the Macmillan Company, 1927.

⁵ *Ibid.*, p. 25.

⁶ See: *Report of the Committee on the Status of Economics and Sociology in Senior High Schools in the United States*. Public Schools, Cincinnati, Ohio, May, 1929.

Sociology, according to this report, should be taught in order:

1. To promote the general welfare of human society, for the last century was one of material miracles and physical achievement. This century must be one of developing human and social welfare if we are to make social progress.

2. To realize that the study of sociology contributes to the understanding of the great social problem of living well together.

3. To teach the boy or girl their relations and duties toward social institutions, because good citizenship is of prime importance in the solution of social problems.

4. To reconcile the major conflicting ideals of our day and generation, for the three outstanding social features of our day—further development of industrialism and urbanism, the new contacts of diverse races or nationalities, and the rise of feminism—need adjustment to the new social order.

5. To make the potential citizen realize that social evils do not "just happen" and that everything has its due cause.

Research technics have not as yet developed to the place where they furnish a guide in decisions as to whether it is desirable to add some content from the fields of economics and sociology to the secondary social studies course. Philosophical and subjective considerations must determine the questions for the present. The ideal should be to develop objective means to aid in arriving at such decisions.

The Present Status of the Social Studies

Twelve general impressions—The committee responsible for the History Curricula In-

quiry of the American Historical Association¹ gained these twelve general impressions:

1. Ancient history as a separate course seems to be receding in popularity.

2. The tendency to stress recent history seems to be weakening the popularity of medieval history.

3. English history as a separate subject seems to be losing ground.

4. The one-year course in world history, while popular in some quarters, does not seem as yet to have made much headway.

5. American history tends to move from the senior year to the junior year of the high school.

6. There is a tendency to put into the last year of the high school a course in current problems, under some such title as Modern Problems, or Problems of Democracy, or Social Problems.

7. New York and Maryland have recently set up, for the second, third, and fourth-year high-school grades, a three-year course in history; and correspondence with trained history teachers shows that this movement has widespread support.

8. There seems to be a tendency to put into the first year of high school one or more of the new civics courses.

9. There is considerable interest among school administrators in a junior high-school course made up of a combination of materials taken from geography, government, history, and industrial and social conditions.

10. The tendency to give a large amount of time to the socialized discussion of current events seems to be growing.

11. The teaching of government seems to be standing still, if not actually receding, under the pressure for a rather indefinite discussion of economic and social problems.

12. The training of teachers for the social studies, separately or as a group, is in need of attention.

¹ Dawson, Edgar, *The History Inquiry*. The McKinley Publishing Company, Philadelphia, Pa., 1924.

THE MOST fundamental teaching principle for the history teacher to keep constantly in mind is that the emphasis in all her teaching should be upon the *learning* process, upon the *training* which the pupil is getting by means of the subject rather than upon the subject itself. In other words, the subject must lose itself in becoming a part of the life of the adolescent boy or girl. The goal must be units of human development or maturing, rather than units of subject-matter completed. The function of every subject that is brought into the high-school curriculum must be to contribute definitely to some aspect of physical or mental maturing of the pupil. The main objective is to bring the pupil to as high a stage of maturity as possible by the proper adaptation of the subject-matter to his present ability to grow. The critical problem is that of determining clearly just to what extent and how the social studies may contribute to this training and development.—*The Teaching of the Social Studies*, Bulletin, Vol. VI, No. 4, Maryland State Department of Education, Baltimore, Md., 1924.

Trends in High-School Mathematics¹

Few subjects taught in the secondary school elicit more contradictory viewpoints than does mathematics. What should be taught, how much of it, to whom, how, and why, are matters of disagreement. This section presents some of the trends.

Modern aims in the teaching of mathematics—Those interested in mathematics differ as to its principal objectives. One group emphasizes its cultural value and regards it as a means of increasing power to think clearly and logically. The other group looks upon mathematics as a means of providing pupils with information and tools for use in ordinary pursuits of daily life involving computation.

Despite the rather general rejection of the faculty idea of psychology, some mathematicians still emphasize the "disciplinary" value of the study of mathematics.

The following statement of the aims of mathematics was formulated by the National Committee on Mathematical Requirements:²

The primary purposes of the teaching of mathematics should be to develop those powers of understanding and of analyzing relations of quantity and of space which are necessary to an insight into and control over our environment and to an appreciation of the progress of civilization in its various aspects, and to develop those habits of thought and of action which will make these powers effective in the life of the individual.

Questions which face local course-of-study committees—These are among the questions which arise in planning junior and senior high-school mathematics courses:

How shall subject-matter be organized? Shall the traditional course in arithmetic be followed by algebra in the ninth grade, plane geometry in the tenth, and advanced algebra and solid geometry and trigonometry in the eleventh and twelfth grades? Is a general mathematics course, beginning in the seventh year and extending through the high school with calculus as the last subject, the better plan of organization? Or would a compromise between these two plans be better? Should the seventh grade course begin with arithmetic, which in many cases is a review, or with intuitive geometry? Should there be a unit of demonstrative geometry in the ninth grade? Would algebra be better understood if it were begun in the seventh grade and scattered through the eighth and ninth years?

Traditionally, materials have been organized in "logical units"—putting together subject-matter which logically belongs together. Then, in studying the material, the pupil concentrates intensely on one topic at a time without giving thought to its relation to other topics or to the course as a whole. For this reason, would it be better to organize courses in secondary school mathematics into "pedagogical" rather than "logical" units?

Recent Omissions and Additions to High-School Mathematics Courses

Taking the country as a whole, the reorganization of mathematics has scarcely begun. Counts,³ in his analysis of mathematics courses

¹ For more detailed information, see: Department of Superintendence, *The Development of the High School Curriculum*, Sixth Yearbook, National Education Association, Washington, D. C., 1928. Chapter XV, "Research in High-School Mathematics."

² National Committee on Mathematical Requirements Under the Auspices of the Mathematical Association of America, *The Reorganization of Mathematics in Secondary Education*, Part I. Houghton Mifflin Company, 1927, 181 pp.

³ National Council of Teachers of Mathematics, *First Yearbook*, A General Survey of Progress in the Last Twenty-five Years, Charles M. Austin, Oak Park and River Forest Township School, Oak Park, Ill., 1926. 210 pp.

⁴ National Council of Teachers of Mathematics, *Second Yearbook*, Curriculum Problems in Teaching Mathematics. Bureau of Publications, Teachers College, Columbia University, New York City, 1927. 297 pp.

⁵ National Council of Teachers of Mathematics, *Third Yearbook*, Selected Topics in the Teaching of Mathematics. Bureau of Publications, Teachers College, Columbia University, New York City, 1928. 276 pp.

⁶ National Council of Teachers of Mathematics, *Fourth Yearbook*, Significant Changes and Trends in the Teaching of Mathematics Throughout the World Since 1910. Bureau of Publications, Teachers College, Columbia University, New York City 1929. 186 pp.

⁷ Reeve, W. D., "The Mathematics of the Senior High School," *Teachers College Record*, Vol. XXVIII, No. 4, December, 1926, pp. 374-386.

⁸ *The Reorganization of Mathematics in Secondary Education*. A Summary of the Report by the National Committee on Mathematical Requirements, Bulletin, 1921, No. 32, U. S. Bureau of Education. 73 pp.

⁹ Woodring, Maxie Nave, and Sanford, Vera, *Enriched Teaching of Mathematics in the High School*. Bureau of Publications, Teachers College, Columbia University, New York City, 1928. 128 pp.

¹⁰ This committee was appointed by the Mathematical Association of America in 1916 and was assisted financially by the General Education Board. The report of the committee, *The Reorganization of Mathematics in Secondary Education*, was published in 1923. The original report is out of print, but a revised edition has been issued by Houghton Mifflin Company, New York, pp. 13-14.

¹¹ Counts, George S., *The Senior High School Curriculum*, Supplementary Educational Monographs, No. 29. The University of Chicago Press, Chicago, Ill., 1926, pp. 57-66.

in fifteen selected school systems, found no striking difference between the contents of mathematics courses in many school systems and the recommendations made by the Committee of Ten or the Committee on College Entrance Requirements in the last decade of the nineteenth century.

However, according to the *Fourth Yearbook* of the National Council of Teachers of Mathematics,¹ these are among the significant changes which have been made in certain school systems in secondary school mathematics courses in recent years:

1. *Simplification of algebra*—Few subjects in the high-school curriculum have undergone more changes in the last few years or have shown more progress than algebra. It is becoming a live subject functioning in the life of the average individual. To note the changes in the subject-matter of algebra:

a. Compare the textbooks of a quarter of a century ago with those of the present day.

b. Note the objectives set up for the teaching of algebra in modern courses of study.

Among the first topics to be eliminated from elementary algebra were the highest common factor by division, cube root by the formula, the general theory of the quadratic, complicated brackets, complex fractions of a difficult type, simultaneous equations in more than three unknowns, the binomial theorem, and complicated radicals. The old idea that "we must scientifically define all terms before they can safely be used" and develop the subject logically has been replaced by a psychological development.

2. *Numerical trigonometry*—According to David Eugene Smith, the introduction of simple numerical trigonometry in connection with the work in ninth-grade algebra is the most notable advance in the last quarter of a century in the teaching of algebra.

3. *Emphasis on the meaning of graphs*

rather than the mere making of them—In the teaching of graphs, the fact is now recognized that the graph is not an end in itself, but it is equally important that the pupil learn to "think graphically" of relationships. A graph is a pictorial representation of an algebraic law. The best approach to algebra is not by means of the equation or through the fundamental operations, but through the study of the formula. The study of the graph is a major trend today in algebra because with the formula it helps to clarify the idea of functionality. A new type of graphic problems is finding its way into algebra. Problems from science, statistics, and everyday life are studied, both those that have mathematical formulas and those that do not, and the functional aspects are emphasized.

4. *Functional thinking*—New meaning is being put into the teaching of algebra by replacing the emphasis upon formal symbolism by the function concept. The more progressive courses are now planned so as to bring out the dependence of variable quantities on each other at every possible opportunity. It is essential that the habit of thinking about relations between quantities be established since this is needed in all activities of life. To illustrate, the relation of interest to time and rate; of cost of transportation to distance and number of times materials are handled; of accomplishment to speed; of the size of an angle to the amount of rotation of a line from one position to another; and of the area of a triangle to its length and base. Unfortunately, an analysis of several widely used algebras and geometries revealed that although on almost every page opportunities for training in functional thinking are offered no systematic use of them is made.² However, some of the newer courses of study give special emphasis to this point.³

5. *Changes in geometry*—Geometry because of its age and its logical arrangement has resisted change more than other phases of math-

¹ The National Council of Teachers of Mathematics, *The Fourth Yearbook*, Significant Changes and Trends in the Teaching of Mathematics Throughout the World Since 1910. Bureau of Publications, Teachers College, Columbia University, New York City, 1929, pp. 131-186.

² See: Breslich, E. R., "Developing Functional Thinking in Secondary School Mathematics," in *The Third Yearbook*, The National Council of Teachers of Mathematics. Bureau of Publications, Teachers College, Columbia University, New York City, 1928, pp. 42-56.

³ To illustrate, on page 9 of the 1924 Baltimore City *Mathematics Course of Study for Junior and Senior High Schools*, this statement is made:

The function idea which is introduced in the intuitive geometry is continued throughout the junior and senior mathematics course.

ematics. In many junior and senior high-school courses, the fundamental change has been the introduction of intuitive geometry in the seventh and eighth grades, and a short unit of demonstrative geometry in the ninth grade. Intuitive or informal geometry includes proofs by intuition or by experiment and provides a gradual and natural introduction to demonstrative geometry. According to Reeve,¹ the development of this idea of a definite course in informal geometry of the kind indicated above will stand as one of the notable advances of the last quarter of a century in the teaching of elementary mathematics.

Emphasis is also being placed upon the fusion of plane and solid geometry. The present tendency is in the direction of combining these two parts of geometry into a one-year course for the tenth grade. The argument is that the important part of solid geometry for the well-educated citizen should not require a half year of study.

Instead of requiring rigorous demonstrations of theorems whose meanings are already obvious to the pupil, postulates are given in many cases.

6. *Introductory calculus as a high-school subject*—In France, Germany, Austria, England, Russia, Italy, Spain, Norway, Sweden, Denmark, Holland, and Belgium, calculus has been incorporated into the secondary school program for some years. In the United States it is offered in only a few schools. However, the National Committee on Mathematical Requirements recommended in 1923 that an elementary course in calculus be offered as a high-school elective.

7. *Applied problems*—There is, at the present time, an apparent desire to introduce a reasonable number of applied problems in algebra, geometry, and trigonometry rather than to depend upon abstract propositions alone, and to arouse the interest of the pupil by an appeal to situations within his comprehension. The realization is spreading that culture itself can be practical and can be acquired in conjunction with things that are practical.

Suggested Content for the Mathematics Course in Grades 7-9

The junior high-school period offers opportunity (1) for completing the elementary foundations of an education in mathematics and (2) for testing out the abilities and interests of pupils so that they can decide whether to drop mathematics, or to go on into technical courses which prepare for engineering, or to continue with regular college preparatory mathematics.

The Committee on the Problem of Mathematics in Secondary Education² considered four groups of users of mathematics distinguished as follows:

- a. The "general readers," who will find their use of mathematics beyond arithmetic confined largely to the interpretative function.
- b. Those whose work in certain trades will make limited, but still specific demand for the "practical" use of mathematics.
- c. Those whose practical work as engineers or as students of certain sciences requires considerable knowledge of mathematics.
- d. Those who specialize in the study of mathematics with a view either to research or to teaching or to the mere satisfaction of extended study in the subject.

¹ Reeve, William David, in *The Fourth Yearbook of The National Council of Teachers of Mathematics*. Bureau of Publications, Teachers College, Columbia University, New York City, 1929, p. 163.

² See: *The Problem of Mathematics in Secondary Education*, Bulletin, 1920, No. 1, U. S. Bureau of Education, for a discussion of the type of course suited to these four groups.

TWENTY-FIVE years ago algebra was taught, first, for the purpose of making mathematicians rather than American citizens; and second, for the purpose of developing patience and habits of persistence and of training a pupil in reasoning. In neither of these purposes did it succeed. It did not begin to do as much for the making of mathematicians as is done by the modern plan, because it presented the subject as a pure abstraction, without any contact with life. Equally did it fail in its other purpose, for it probably developed as much impatience as patience, it failed to make children persistent except as any puzzle may accomplish this end, and it was taught in such a mechanical way as to give no training in any reasoning that was worth while.—David Eugene Smith, *Progress of Algebra in the Last Quarter of a Century*. New York, Ginn and Company, 1925, p. 13.

Today mathematicians are more or less agreed that the mathematics course of the seventh and eighth grades should aim to: (1) Keep up a proper use of the fundamental skills in arithmetic through their application to such problems as trade, banking, insurance, and corporations; (2) introduce the pupil to the study of intuitive geometry; and (3) give him an understanding of what algebra means—a knowledge of the formula, statistical and mathematical graph, and the solution of simple types of equations.

Some would outline the mathematics course for the ninth grade as follows: (1) The completion of the course in elementary algebra; (2) a unit of numerical trigonometry based on

the pupil's previous knowledge of algebra and intuitive geometry; and (3) a short course in demonstrative geometry, which gives the pupil a chance to find out what it means to prove something. This is done with a few axioms, postulates, and theorems, reinforced by some carefully planned work on original exercises. The following outline of topics included in the 1928 Pittsburgh course is more or less typical. The specific topics included and the time allotted to each will of course vary widely in different school systems. This outline is reproduced here for illustrative purposes, not with the idea that it can necessarily be adopted by other school systems.

TOPICS AND SUGGESTED TIME ALLOTMENTS IN PITTSBURGH SEVENTH, EIGHTH, AND NINTH-GRADE MATHEMATICS COURSES¹

Topics for low seventh grade	Time ² allotment in weeks	Topics for high seventh grade	Time allotment in weeks
Fundamental processes—drill	5 to 10 min. daily	Integers, common fractions, and decimals	5 to 10 min. daily
Fractions—review	1	Percent—review	1
Decimals—review	1	Development of percents less than 1% and more than 100%	1
Percentage	4	Interest	4
Profit and loss	2	Trade discount	2
Simple discount	2	Intuitive geometry	4
Commission	2	Graphs	3
Intuitive geometry:		Equations	2
Construction	2	Accounts and simple banking	2
Applied measurements	3	Budget	1
Home arithmetic	2		
Equations	1		
Topics for low eighth grade	Time allotment in weeks	Topics for high eighth grade	Time allotment in weeks
Fundamental operations	1	Fundamental operations	1
Short methods of computation	1	Budgets	3
Graphs	3	Notes	2
Metric system	1	Bank discount	2
Intuitive geometry	12	Stocks and bonds	3
Review and testing	2	Mortgages, real estate, and building and loan	3
		Insurance	1
		Taxes	2
		Sending money	1
		Review and testing	2
Topics for low ninth grade	Time allotment in weeks	Topics for high ninth grade	Time allotment in weeks
Unit I—Formula	3	Review	2
Unit II—Statistical graph	2	Unit VI—Fractions	3
Unit III—Directed numbers	3	Unit VII—Fractional equations	3
Unit IV—Equations	4	Unit VIII—Ratio and proportion	2
Unit V—Fundamental operations	6	Unit IX—Indirect measurements	2
Review	2	Unit X—Systems of linear equations	3
		Unit XI—Powers and roots	3
		Review	2

¹ See: *High-School Course of Study in Mathematics*, Junior-Senior Divisions, Grades 7-12, The Board of Public Education, Pittsburgh, Pa., 1928.

² The Pittsburgh Mathematics Committee makes it very plain that these time allotments are only suggestive, and that they are based on experience gained during an experimental period in the development of the local course of study. The Committee states that suggestions made by certain teachers indicated that some classes will have difficulty in doing the work in the suggested time. In some cases, administrative adjustment of the work must be made. The Committee also realizes that different situations require different treatments. This is especially true when considering the time accorded for review.

Adjustment of junior high-school with senior high-school mathematics courses—The general mathematics course of the junior high school has broken away from excessive formalism, and requires less skill and more understanding on the part of pupils. Where similar adjustments have not been made in beginning classes in the senior high school, maladjustment results. The problem is often increased by the conflicting viewpoints of junior and senior high-school teachers and by textbooks which are poorly articulated.

Differentiation of Mathematics Courses for Different Levels of Ability

A plan for forming ability groups in high-school mathematics—The following suggested plan is similar to that found in a number of progressive school systems:

All students who register for the first course in elementary mathematics are classified in Groups I, II, or III, according to their ratings in arithmetic based upon the eighth-grade teachers' judgment and upon their achievement quotient sent up from the grades. If these have not been furnished, their ratings shall be determined by some mathematics test given under the direction of the head of the department. The program schedule should be ar-

ranged so that a I, II, and III group can meet at the same hour. This will make it possible to have a student shift from one group to the other without disorganizing his whole program, hence errors in classification may be adjusted early and the student may be kept up to his true standard of ability in mathematics. At the close of the term, the head of the department can arrange the students in ability groups from the records of the current and previous terms.

The above plan illustrates only one method of sectioning students on the basis of their mathematical ability; each school system will want to develop the plan best suited to its needs. Some will decide that entirely new courses are necessary to meet the needs of different groups of pupils. Others will adapt to their local needs the plan found in the Baltimore and in many other courses of study:

Unstarred topics constitute the minimum requirement; all but double starred topics, the average assignment; and all topics, the maximum assignment. In the case of topics common to the three differentiations much drill upon examples of simple nature should be characteristic of the minimum requirement, while the other two, though not foregoing drill, should afford opportunity to try the more difficult examples.

RELATIVELY CONSERVATIVE position of mathematics despite the reorganization movement—A word should be said regarding the reluctance of the high school to abandon algebra and geometry. The case against these subjects as to the basic offerings in mathematics for the great majority of high-school pupils is clear. They reached the place which they occupy in secondary education largely by historical accident and by the grace of the doctrine of formal discipline. They contain but little material that is related to either the present or the probable needs of the pupils. Experimentation indicates that even for that small group of individuals who possess great mathematical talent and who should be encouraged to pursue higher mathematics, some other organization of mathematics would give superior training; yet, the composite mathematics courses have made but little headway in these schools. . . . Undoubtedly, the entrenched position which algebra and geometry hold in the college entrance requirements have much to do with their persistence in the high-school curriculum.—George S. Counts, *The Senior High School Curriculum*, The University of Chicago Press, February, 1926.

Research in High-School Science¹

Science instruction in the high school as a preparation for rational, scientific living and thinking—This is one of the greatest needs of today when propaganda, frauds, fads, cults, isms, and other evidences of unscientific thinking and living are rampant, despite the fact that the outstanding feature of modern intellectual leadership is the development of science and scientific method.

A review of recent course-of-study bulletins in high-school science² shows that science teachers are coming to realize that science in school must be made a way of looking at the world, a way of dealing with problems, a way of enjoying life, a method of progressive adjustment. The following statement of the general aims of science courses, prepared by a committee representing six San Francisco high schools, is illustrative:³

1. To enlarge the pupil's vision, to stimulate his imagination and to add to his joy of living through a better understanding and appreciation of nature.
2. To enable the pupil to see how natural forces affect man's existence and to learn that by greater knowledge and better control of these forces, man's welfare will be enhanced.
3. To foster a love for the truth, to cultivate a desire to seek it and to aid the pupil in acquiring methods for finding it.
4. To counteract false assumptions and misapprehensions by learning the correct interpretations and significances of natural phenomena.
5. To encourage the acquisition of knowledge by means of individual investigation and by first hand contact with the things studied.

6. To increase the pupil's capacity for independent thinking and thus to develop his confidence and ability in attacking and solving problems of whatever nature.

7. To establish scientific habits of thought and procedure, systematic gathering and sorting of data; the ability to recognize relationships between cause and effect and to deduce logical conclusions—thus providing the pupil with a set of tools useful in all phases of work.

8. To lay a substantial foundation in one or more of the branches of science which may be of enduring value to the individual or which may serve adequately as a stepping stone to higher learning.

9. To provide, for students not seeking a college education, certain occupational courses by means of which they may acquire something of very practical use to them in life.

The scientific method demands that we observe, reflect, and compare before drawing a conclusion. The spirit and method of science need to be carried over into the whole of our everyday living. Each individual pupil should be given some practice in using the scientific approach to the solution of problems. The secondary school's responsibility is to bring together appropriate and selected bodies of knowledge and experience which themselves interpret and explain different aspects of the environment, and to arrange these in a form which stimulates reflection. This demands that science courses be related to the experiences, interests, and needs of pupils.

¹ The reader is urged to consult the following references for more detailed summaries of curriculum and learning research studies in science, and investigations and suggestions on the teaching of science:

Bayles, E. E., *Fundamentals in High-School Science Teaching*, Central Missouri State Teachers College, Bulletin, December, 1927. Warrensburg, Mo.

Curtis, Francis D., *A Digest of Investigations in the Teaching of Science*. Philadelphia, P. Blakiston's Son & Co., 1926. 341 pp. Department of Superintendence, *The Junior High School Curriculum*, Fifth Yearbook, Chapter IX, Junior High School Science. National Education Association, Washington, D. C., 1927.

Department of Superintendence, *The Development of the High School Curriculum*, Sixth Yearbook, Chapter XVI, Research in High-School Science. National Education Association, Washington, D. C., 1928.

Downing, E. R., *Teaching Science in the Schools*. University of Chicago Press, Chicago, Ill., 1925.

Finley, Charles W., *Biology in the Secondary Schools*. Bureau of Publications, Teachers College, Columbia University, New York City.

Frank, J. O., *Teaching First Year Chemistry*. Published by the Author, State Teachers College, Oshkosh, Wis., Fourth edition.

Glenn, Earl R., *Bibliography on Science Teaching in Secondary Schools*, U. S. Bureau of Education, Bulletin No. 13, 1925. Government Printing Office, Washington, D. C.

Reorganization of Science in Secondary Schools, Bulletin, 1920, No. 26, U. S. Bureau of Education. Government Printing Office, Washington, D. C.

"Report of the Committee on Chemical Education of the American Chemical Society," Neil E. Gordon, Chairman, *Journal of Chemical Education*, Vol. 1, May, 1924, pp. 87-93. Also reviewed in Curtis, Francis D., *A Digest of Investigations in the Teaching of Science*.

Rusk, R. D., *How to Teach Physics*. J. B. Lippincott Company, Philadelphia, 1923.

Twiss, G. R., *Principles of Science Teaching*. The Macmillan Company, New York, Revised, 1927.

Woodring, Maxie Nave; Oakes, Mervin E.; and Brown, H. Emmett, *Enriched Teaching of Science in the High School*. Bureau of Publications, Teachers College, Columbia University, New York City, 1928.

² See pages 271 and 272 for a list of 106 of these bulletins.

³ See page 15, Curriculum Bulletin No. 210, Science—High School, Grades 9-12, San Francisco Public Schools, 1928.

Curriculum Studies in the Field of Science

*Scientific interests of eighth and ninth-grade pupils and their parents*¹—An analysis of 8448 questions submitted by 1708 children and 4878 questions submitted by 1091 adults, in response to a request that they submit five questions each about the phases of science in which they were most interested, showed a great similarity between the interest lists of boys and girls and of men and women, as well as a "surprising similarity" of the scientific interests of dwellers in urban and rural communities. About sixty percent of the questions dealt with the physical sciences and forty with the biological sciences. The predominant interest, as revealed by the questions submitted was astronomy in its various phases. Radio and various phases of electricity were next in importance. Other topics in which great interest was expressed were: earthquakes, volcanoes, various phases of the weather, air, animals, insects, plants, birds, light, sound, and airplanes.

It would be interesting to compare the findings of this study as to the science interests of children and adults with those which science teachers might expect them to have. Such a comparison could well be made by local committees in connection with the revision of high-school science courses.

Findings of this study suggest the need of frequent course-of-study revision. Radio could hardly have ranked as a subject of major interest a decade ago.

To what extent do the principles and elements of high-school physics enter into the everyday lives of people?—One investigator² presented a list of 576 activities involving "rather definitely ascertainable principles and elements of physics" to a group of over 100 boys and girls of high-school age and men and women from 37 occupations. They were asked to indicate the extent to which these activities entered into their lives. The activities included things which people generally do for themselves, such as "replace burned-out fuses";

things which they often have others do for them, as "take pictures with a camera of a special lens"; and things about which people think, as "wonder what makes one 'hear the ocean' in a seashell." From the replies, the investigator concluded that with the exception of sound and light, "boys are always much more affected by physics than are the girls." He recommends the following order of large topics in high-school physics: For boys, magnetism and electricity, invisible radiations, mechanics, heat, light, and sound; for girls, sound, light, heat, mechanics, magnetism and electricity, and invisible radiations.

Science teachers may find it worthwhile to carry on a somewhat similar investigation in their own local schools.

What about the social value of the contents of present high-school physics textbooks?—One investigator³ made a line-by-line analysis of the content of three textbooks used by 94 physics teachers in 24 states. This analysis revealed a "surprising similarity in the materials included in all three texts, with respect to general plan, amount of emphasis given various topics, and even in the choice of experimental and pictorial illustrative materials"; 70 out of 73 topics were common to all three texts. According to this investigator, "the subject of physics in high school possesses its share of inherited tradition."

A critical study of the content of high-school physics with respect to its social value⁴ was made through a questionnaire answered by 659 parents of Kansas high-school pupils. This questionnaire sought information as to the value to adults of each of 174 items which appear in high-school physics texts. Thirty-five of the 174 items were reported by 60 or more percent of the parents as being worthwhile for them to know about or understand.

On the other hand, there were 23 items, such as ice-cream freezer and automobile radiator, not usually emphasized in high-school physics, which were reported by 60 or more percent of the parents as being worthwhile for them to know about and understand.

¹ See *Sixth Yearbook*, Department of Superintendence, pp. 355-6, National Education Association, Washington, D. C.; and Curtis, Francis D., *A Digest of Investigations in the Teaching of Science*, pp. 265-7 and 326-33, P. Blakiston's Son & Co., Philadelphia, Pa.

² Herriott, M. E., "One Influence of Out-of-School Activities in Determining the High-School Physics Curriculum," *School Science and Mathematics*, January, 1927, Vol. XXVII, pp. 56-60.

³ Hughes, J. M., "A Study of the Content of the Course in High-School Physics, with Suggestions of Needed Changes," *School Science and Mathematics*, June, 1926, Vol. XXVI, pp. 619-23.

⁴ Title of an article by Charles Hoyt Watson, published in *The School Review*, Vol. XXXIV, No. 9, November, 1926, pp. 688-697.

This study showed also that occupational life makes less difference than has been commonly supposed in the selection of subject-matter for high-school courses in physics. There was a correlation of more than .90 among farmers, mechanics, professional men, merchants, and women in their choices of worthwhile items for a course of study in physics.

Distribution of emphasis—In chemistry, what is the relative stress placed upon descriptive matter, useful applications, equations and problems, and theory by representative textbooks, teachers' stress, and examination questions? To answer this question, two investigators¹ made: (1) a page-by-page analysis of the five most widely used textbooks, (2) a determination of teachers' emphasis as indicated by a compilation of 172 opinions of the relative importance of things stressed; and (3) an analysis of 3609 final examination questions contributed by 83 schools in 37 states, and 41 examination questions of the College Entrance Board of the New England and Middle Atlantic States.

These were among their findings:

1. The most widely used textbooks are about one-half descriptive matter, one-fourth useful applications, and one-fifth theory, problems, and equation writing. The portion given to theory becomes slightly greater the more recent the text.

2. Very little attention is given pure theory. This fact, along with the emphasis given by teachers (as revealed by their own statements and examination questions) to descriptive matter and useful applications in a proportion strikingly like that in textbooks, would indicate that "the backbone of much high-school chemistry is a parrot-like repetition of textbook matter."

3. The deviations in the content of high-school final examination questions indicate a wide divergence in the aims in teaching chemistry.

4. The investigators believe that "high-school chemistry is not primarily a memory subject and cannot successfully be taught as such."

Overlapping between high-school and college courses in chemistry and physics—A comparison² of the content of high-school and col-

lege chemistry courses made by reviewing textbooks and laboratory manuals in use in 26 high schools and 41 higher institutions showed:

1. Chemistry is taken predominantly by students in the last year of high school and the first year of college, and in both units there is identity of titles and duration of courses.

2. The similarities between high-school and college texts far exceed the differences. To illustrate, the average percent of the total content devoted to definitions is 41 percent for college chemistry texts and 37 percent for high-school texts.

3. An analysis of the overlapping of laboratory manuals shows that only about one percent of the experiments are peculiar to college manuals, and 5 percent are peculiar to high-school manuals.

4. From this study, the investigator concludes that if a student takes a course in general organic chemistry in college after having had the high-school course, he is repeating a large portion of it.

A second study³ relative to the duplication of college and high-school physics courses shows that, for the particular courses of study analyzed, on the average 17 percent of the high-school text material and 20.5 percent of the laboratory material is done again in college; while 10.9 percent of the college text material, and 29.7 percent of the college laboratory material is a duplication of what is taught in the high school.

Some of this overlapping is justifiable. But how much? "Aimless and ill-balanced" is the charge which some investigators make relative to high-school and college texts. The burden of proof seems to rest with those who defend the present status of affairs.

What types of biological information go to the public through the newspapers?—A detailed classification made of 3061 biological articles appearing in seventeen full months' issues of prominent and representative newspapers showed that 897 articles were devoted to health; 755 to animals; 660 to plants; 533 to food; 81 to organization of producers; 74 to nature; and 47 to evolution.⁴ This study offers evidence that health should be one of the most

¹ Cornog, Jacob, and Colbert, J. C., "A Quantitative Analysis of Aims in Teaching High-School Chemistry," *School Science and Mathematics*, Vol. XXIV, February, 1924, pp. 168-73.

² For a detailed account of this study see: Koos, Leonard V., *The Junior College*, Research Publications of the University of Minnesota, Education Series No. 5, Vol. II, pp. 387-531. Minneapolis, University of Minnesota, 1924.

³ See Osburn, W. J., *Overlappings and Omissions in Our Courses of Study*, Public School Publishing Company, Bloomington, Ill., 1928. 167 pp.

⁴ Finley, Charles W., and Caldwell, Otis W., *Biology in the Public Press*. The Lincoln School of Teachers College, Columbia University, New York City, 1923.

important objectives of science education; and that biology in the public press is homocentric and, therefore, differs fundamentally from most of the textbooks in elementary biology.

Scientific knowledge demanded for an intelligent reading of newspapers—According to one investigator,¹ an analysis of 630 newspaper articles having some relation to scientific content showed the need of the broadest possible foundation in general science since:

1. Only 13.7 percent of these articles give scientific information and require no scientific background.

2. Only 1.2 percent of these newspaper articles actually define scientific terms as a basis for further information.

Learning Studies in the Field of Science

Which is better, the individual laboratory or the demonstration method of teaching chemistry and physics?—While further research is necessary to answer this question with finality, ten studies² with results generally favorable to the demonstration method have already been made. The following excerpts from the reports of investigators are more or less typical.

In lecture demonstration experiments, the pupils made a final average upon all the exercises, 5 percent higher than the final average made by those who did individual laboratory work.

The individual method took about twice as long as the demonstration method. "If the results of the demonstration work and the individual work are nearly the same, then it seems that the demonstration work would not only be a time-saving device, but also a great saving in the purchase of extra laboratory equipment necessary for individual work."

The advantages in permanent knowledge were in favor of the individual method but were "so slight that it is of little consequence."

The demonstration group, when confronted with a new problem with only the apparatus given, were superior on the method of procedure before the experiment was performed and in the test after the experiment. Therefore the demonstration group "has as much ability in attacking new problems as the group trained with the individual laboratory method."

The results secured through the use of the demonstration method were as good, if not better, in all three types of tests given—the tests for immediate knowledge, for permanent knowledge, and for knowledge of how to apply principles and technic in solving a new problem. While the advantage in favor of the demonstration method is small, it is very significant.

When the demonstration method gives equal or superior results, it is to be preferred to the individual laboratory method because it saves about one-half the time usually devoted to performing the experiments, and permits the instructor to use the time thus saved in relating the facts and principles to allied phenomena. Furthermore, the enthusiasm of the class working together is most valuable.

The individual method tended to be superior in those experiments that are especially difficult to perform or in which great care needed to be taken to see the exact procedure. Such facts suggest that the most effective method depends upon the nature of the experiments themselves and suggest the need for scientifically classifying them.

While the "instructor method" has practically the same value for all types of pupils, the "pupil method" has a varying value depending upon the type of pupil; the "pupil method" is unsuited to lazy or indifferent pupils requiring constant supervision, though well suited to ambitious pupils. Pupils of medium and low intelligence seem to profit more from demonstration than by their per-

¹ Curtis, Francis D., *Some Values Derived from Extensive Reading of General Science*, Contributions to Education, No. 163. Teachers College, Columbia University, New York City, 1924, pp. 10-27.

² Anibel, Fred G., "Comparative Effectiveness of the Lecture-Demonstration and the Individual Laboratory Method," *Journal of Educational Research*, May, 1926, Vol. XIII, pp. 355-365.

Carpenter, William W., *Certain Phases of the Administration of High-School Chemistry*, Chapter IV, "A Comparison of Different Methods of Laboratory Practice," Teachers College Contributions to Education, No. 191, pp. 29-46. Teachers College, Columbia University, New York City, 1925.

Coopridge, J. L., "Oral Versus Written Instruction and Demonstration Versus Individual Work in High-School Science," *School Science and Mathematics*, December, 1922, Vol. XXII, pp. 838-844.

Coopridge, J. L., "Laboratory Methods in High-School Science," *School Science and Mathematics*, June, 1923, Vol. XXIII, pp. 526-530.

Coopridge, J. L., "Teacher Versus Student Demonstrations in High-School Biology," *School Science and Mathematics*, Vol. XXVI, February, 1926, pp. 147-153.

Cunningham, Harry A., "Individual Laboratory Work Versus Lecture Demonstration," *University of Illinois Bulletin*, Dec. 6, 1920, Vol. XVIII, pp. 105-107.

Cunningham, Harry A., "Laboratory Methods in Natural Science Teaching," *School Science and Mathematics*, Oct. and Nov., 1924, Vol. XXIV, pp. 709-715 and 848-851.

Kiebler, E. W., and Woody, Clifford, "The Individual Versus the Demonstration Method of Teaching Physics," *Journal of Educational Research*, January, 1923, Vol. VII, pp. 50-58.

Knox, W. W., "The Demonstration Method Versus the Laboratory Method of Teaching High-School Chemistry," *School Review*, May, 1927, Vol. XXXV, pp. 376-386.

Nash, H. B., and Phillips, M. J. W., "A Study of the Relative Value of Three Methods of Teaching High-School Chemistry," *Journal of Educational Research*, May, 1927, Vol. XV, pp. 371-379.

formance of the exercise individually. Hence, the type of classroom instruction should vary with the type of pupils in the group.

Much can be gained by (1) a careful analytical study of each individual experiment to determine just what skills and abilities are necessary in mastering that particular exercise; (2) a careful testing and diagnosis on the basis of evidence obtained by the testing of each individual pupil to see if he has these skills and abilities; and (3) the adoption of such methods and technic for each individual as the study of both experiment and student indicates is best.

Can effective training in scientific attitudes be given pupils?—According to one experimenter,¹ it can. He first analyzed the literature in order to secure a list of scientific attitudes. Deletions and additions were made to this list by 100 science teachers in high schools and universities. To measure this reconstructed list, a "Test of Scientific Attitudes" was constructed.

In one high-school science class, newspaper clippings containing false deductions, problems with insufficient or superfluous data, discussions of superstitions, incompleting demonstrations of experiments permitting prediction of possible solutions, and reports upon inventors and other scientists who were forced to struggle for their success against prejudice and narrow-mindedness, were introduced and discussed fully by the class. This class stood considerably higher in the "Test of Scientific Attitudes" than did classes where no time was devoted to definite training in these attitudes.

According to the investigator, extensive reading of general science apparently of itself serves to give some training in scientific attitudes; but such gains as may thus be secured are inconsiderable as compared with those made when definite instruction is given. Even a small amount of such instruction pays large dividends.

High-School Commercial Education ²

*The expanding commercial curriculum—*Modern economic organization, which calls into play the commercial activities peculiar to our time and which, in turn, justifies commercial education, is a matter of the last few generations. Within recent years commercial education has taken on a new significance. The term has been expanded to include all the junior occupations found in offices and stores. It

is no longer confined to preparation for the narrow and greatly changed field of book-keeping and stenography, but it is also concerned with office machine operating, retail selling, salesmanship, advertising, office organization and administration, banking, foreign-trade clerical work, secretarial duties, expert filing, clerical duties, and many other kinds of business service. Each community in planning

¹ Curtis, Francis D., *Some Values Derived from Extensive Reading of General Science*, Contributions to Education, No. 163, Teachers College, Columbia University, New York City, 1924, pp. 50-112.

² For more detailed information, local committees charged with the building of high-school commercial courses of study and also teachers interested in improving their work are urged to consult the following:

Anderson, John A., *Fitting the Commerce Course of the High School and Junior College to the Needs of the Community*, Educational Research Bulletin, Pasadena, Calif., May, 1926.

Barnhart, Earl W., *An Analysis of the Work of the Stenographer*. New York, Gregg Educational Monographs, The Gregg Publishing Co., 1927.

Blackstone, E. G., *Research Studies in Commercial Education*, University of Iowa Monographs in Education, First, Second, and Third Series. Iowa City, Iowa, 1926-29.

Bureau of Public Personnel Administration, *Preliminary Work on Tests for Stenographers*, Washington, D. C., Public Personnel Studies, Bureau of Public Personnel Administration, Feb., 1928.

Business Education in Secondary Schools, A Report of the Commission on the Reorganization of Secondary Education Appointed by the National Education Association, U. S. Bureau of Education Bulletin, 1919, No. 55.

Charters, W. W., and Whitley, I. B., *Analysis of Secretarial Duties and Traits*. Williams and Wilkins Co., Baltimore, Md., 1924.

Denver Public Schools, *Commerce, Senior High School*, Course of Study Monograph, No. 8, Public Schools, Denver, Colo., 1925. Department of Superintendence, *The Development of the High School Curriculum*, Sixth Yearbook, Chapter XXIII, "Research in High-School Commercial Studies." Washington, D. C., National Education Association, 1928.

Eastern Commercial Teachers' Association, *Foundations of Commercial Education*, First Yearbook, Eastern Commercial Teachers' Association, 253 Lexington Avenue, New York City, 1928. 423 pp. This volume contains an extensive bibliography.

Eastern Commercial Teachers' Association, *Curriculum Making in Business Education*, Second Yearbook. Eastern Commercial Teachers' Association, 253 Lexington Avenue, New York City, 1929.

Malott, J. O., *Commercial Education, 1924-26*, U. S. Bureau of Education Bulletin, 1928, No. 4. Government Printing Office, Washington, D. C.

Nichols, Frederick G., *A New Conception of Office Practice*, Harvard Bulletins in Education, No. 12. Harvard University Press, Cambridge, 1927.

St. Louis, *Course of Study in Shorthand and Typewriting*, Bulletin, No. 37. Board of Education, St. Louis, Mo.

University of Minnesota, *A Pupil-Activity Curriculum in Stenography*, Education Research Bulletin, Vol. 29, No. 17. College of Education, University of Minnesota, Minneapolis, Minn.

West, Paul V., *Changing Practice in Handwriting Instruction*. Bloomington, Ill., Public School Publishing Co., 1927.

its commercial curriculum will have to select those courses which best meet its special needs and are best suited to its students.

Points to be considered in the building of a commercial curriculum—Among the points which each local course-of-study committee can consider to advantage are these:

1. A study of the commercial occupational opportunity of the community; the methods used by the community; a study of the commercial territory of the community. The community and its territory are the immediate market of the school and should be as thoroughly known to members of the commercial department as is the market of any industry in the community known to workers in that industry.

2. A study of the relation of the commercial department with the general educational scheme of the whole school system.

3. General coherence or organization of business courses in the junior and senior high school. The study of their relations and inter-dependence.

4. A definite statement of the purposes to be sought by each curriculum offered in the commercial department and by the department as a whole. At the same time a study of the unity of the commercial department with the other school curriculums.

5. A study of the application of commercial courses of study to the aptitudes of students.

6. Suggestions to teachers for enriching each commercial course and adapting it to fit individual students.

7. A careful inventory of the equipment of the commercial department and a study of the needs of each subject in order to make the work more efficient without adding commercial materials for the mere sake of having them. Personal interviews and questionnaires sent to a number of local firms will indicate the amount and kind of machine work for which school training should be offered, such as mechanical bookkeeping, comptometer, and dictaphone work.

8. Advisability of a direct alliance with some of the commercial institutions of the city for the use of commercial students who wish to enter business upon graduation, whereby the students might find it possible to work part time in preparation for actual entering into business.

What should be included in the junior high-school commercial curriculum?—This curriculum should contribute to such broad general

objectives of the junior high school as exploration, self-discovery, guidance, culture, high-school preparation, and pre-vocational training. The last of these objectives is over-stressed in some junior high-school commercial courses, which seem to have as their objectives the preparation for minor messenger and clerical positions, and for positions which junior high-school pupils cannot fill, the duties of which will concern those who fill them only for a short time. A course of this kind can hardly be said to be broadly exploratory, to furnish guidance for a life position in the complicated field of business, or to build a foundation for the more technical courses of the senior high school.

The purposes of the junior high school are met through some commercial curriculums¹ by three types of courses: (1) A general and exploratory course, the content of which is valuable to all eighth-grade pupils; (2) In schools where a considerable number of pupils drop out to go to work, a prevocational course is offered. Some junior high schools, however, see to it that continuation, evening, and corporation schools are used by these pupils; furthermore, training which can better be given on the job is not attempted in the junior high school; (3) A foundation course, upon which the more technical commercial subjects of the senior high school can be built, is offered.

High-school commercial courses should train pupils for future, as well as immediate, jobs—This double responsibility rests upon the secondary school commercial department, according to the Minnesota State Course of Study.²

We can only be satisfied with the training we give in our commercial courses when we both train our pupils to do well in the job which they will hold immediately upon leaving the schools and also give them the broader understanding and the necessary tools with which to advance themselves into positions of greater responsibility. We should send out boys and girls who, though trained for clerical work, have their eyes fastened upon a position on a higher economic scale and who are keenly alive to their opportunities of acquiring the knowledge which will fit them for that position.

¹ Baltimore City illustrates this type. See: Commercial Course of Study, Junior and Senior High Schools, City of Baltimore, Department of Education, Division of Vocational Education, 1925, pp. 9-10.

The foreword to Curriculum Bulletin No. 39, *Business Organization*, of the St. Louis public schools states that: "The commercial course in the intermediate schools are such as will meet the common needs of all pupils irrespective of vocational choice besides giving the child an opportunity to explore the commercial curriculum and acquire information which will aid in educational and vocational selection. In the high school, training of a more vocational type is given. The prevailing methods of business procedure are studied, and a scientific and appreciative attitude toward business services and management is developed.

² *Commercial Education*, Bulletin No. 7, The High-School Curriculum and Syllabi of High-School Subjects, State of Minnesota, Department of Education, St. Paul, Minnesota, August, 1925, p. 8.

This same point is emphasized in the Denver, Philadelphia, and Lansing courses of study in commercial education. According to the Lansing course of study:¹

Commercial education in the senior high school has a wider purpose than the mere training of stenographers, bookkeepers, and clerks. . . . Young people trained for the broader and more professional aspects of commercial life have every prospect of finding for themselves highly useful places in business as they demonstrate their fitness for more responsible duties.

Some general business training helpful to everyone, regardless of his occupation—There is a kind of commercial education that concerns all social institutions, since there is clearly a business side of the home, church, state, organized recreation, and school, as well as of business itself.

Shorthand, typewriting, and bookkeeping constitute only a fraction of commercial work—A survey of commercial departments of high schools in 15 communities together with a job analysis of commercial and clerical occupations in Minnesota² was based on (1) a special census of the commercial and clerical employees found in 14 communities, (2) an analysis of the duties of over one-fourth of the commercial and clerical workers found in 13 of these communities, (3) a follow-up of 695 high-school commercial graduates from 15 public high schools located in representative towns and cities of Minnesota, and (4) on a special inquiry into the general or non-vocational uses of commercial education. This study showed that, while such subjects as typewriting, shorthand, and bookkeeping occupy the foreground in the commercial curriculum, they serve the needs of only a minority of the pupils. Courses for general business and retail merchandising workers are among those needed.

A study made in Cleveland of the character of the jobs which pupils leaving high schools (during each semester from 7B to 12A, including graduates over a period of five years) get during the first five years they are out, led

to these conclusions relative to conditions in Cleveland:³

1. There is no longer any reason to train students to do both stenography and bookkeeping.

2. The vast bulk of commercial workers are recording and non-recording clerks, more than one-third of all being grouped into ten classes of clerical workers who do some specialized kind of record keeping other than bookkeeping or typing.

3. More pupils get minor executive positions during the first five years out than secure bookkeeping positions.

4. The minor executive and bookkeeping positions are, however, not attained until toward the end of the five-year period, and then only by the older and better trained persons.

5. The youngest group is the group of non-recording clerks, and next, the group of recording clerks.

6. This would indicate that we must provide training for the clerks below the grade of bookkeepers and typists, who are almost half of all the workers.

Each local community should consider the advisability of making a survey to see what commercial workers do and also to see who can be trained to do the work.

What should be accomplished through a survey of local commercial occupations?—These are the results suggested by one writer:⁴

1. Education and business should be brought into closer relationship to their mutual advantage.

2. Commercial teachers should be kept abreast of the times in business matters having a bearing on their teaching.

3. Business men should be enlisted for permanent services to the cause of business education.

4. The actual needs of local business men for trained commercial workers should be discovered.

5. The particular jobs for which school training should be given should be listed.

6. The promotional opportunities inherent in these jobs should be revealed.

7. The part that commercial education can play in helping boys and girls to take advantage of these promotional opportunities should be made clear.

8. The actual requirements of contact or stepping-stone jobs should be listed in terms of occupational

¹ *Course of Study in Commercial Education, Grades 7-12, Lansing, Michigan, 1925*, p. 23.

² Weersing, F. J., *Commercial Education in the Public High Schools of Minnesota, 1927*. Unpublished thesis, Library, University of Minnesota, Minneapolis, Minn.

³ Connor, William L., "The Community Background of the Commercial Course and How to Understand It," *Research in Commercial Education*, University of Iowa Monographs in Education, First Series, No. 7, July, 1926, pp. 136-144.

See also: Report of the Commercial Curriculum Committee of the New Castle Public Schools, *A Study in Adjusting the High School Commercial Curriculum to the Needs of the Community*, New Castle, Pa., February, 1929.

⁴ Nichols, Frederick G., "What Are the Steps in the Process of Determining the Occupational Opportunities in a Given City?" *First Yearbook*, Eastern Commercial Teachers' Association, 1928, p. 365.

skills, vocational intelligence, general business-knowledge, and social understanding.

9. Shortcomings of training already given should be revealed by a study of the occupational histories of those who had such training before entering upon employment.

10. The way should be paved for the establishment or improvement of plans for dealing with the placement problem.

11. The basis for an adequate program of "pusher" or "extension" business training should be laid.

Illustrations of how the subjects to be offered in a commercial curriculum were determined by a community survey—A survey of commercial occupations in Pasadena¹ was made for these reasons: (1) To determine what subjects should be offered in the high-school commercial course, and (2) to see if the vocational opportunities in the community justify the commercial subjects offered.

One inquiry was sent to all business houses that were likely to have commercial employees. Another inquiry was sent to 50 recent graduates of the commerce course. To prepare the business men for their inquiry and to get as high a percentage of replies as possible, the survey was announced and explained at each one of the luncheon clubs of the city. The inquiries, together with a letter signed by the head of the commerce department and the principal of the high school, were distributed to the business firms by 20 high-school boys enrolled in commercial classes. A few days later these same boys collected the replies, a summary of which led to these findings and conclusions.

1. Percentage distribution of commercial employees.

Type of commercial work	Percent male	Percent female	Percent of total
Selling.....	44.3	22.6	34.4
General clerical.....	9.4	34.1	20.6
Secretarial.....	4.8	18.7	11.9
Accounting.....	9.8	11.9	9.8
Miscellaneous administrative.....	8.2	5.3	6.9
Transportation and storage.....	10.3	1.3	6.2
Machine operating.....	6.9	4.8	5.9
Financial.....	6.3	1.3	4.3

2. More attention should be given to the teaching of selling, particularly retail selling.

3. An individual must prepare himself definitely to be a stenographer, a bookkeeper, or a salesman before trying to fit himself for a combined position.

4. The combined rating of business men who were asked to rate the following ten traits from 1 to 10 in the order of their importance as personal qualifications of commercial employees was as follows: (1) Reliability, (2) accuracy, (3) industry, (4) initiative, (5) cooperation, (6) quickness of thought, (7) attentiveness, (8) physical vitality, (9) retentiveness of memory, and (10) leadership.

5. In a community of the size of Pasadena, there is not extensive enough specialization among commercial workers to justify the schools in offering short-unit courses designed to prepare young people for specific positions outside of the general subdivisions of salesmanship, secretarial, and accounting. These three groups of studies, each with its minimum of two years of required work along the special lines of salesmanship, shorthand and typewriting, and bookkeeping, coupled with the specialization possible in the practical laboratory of the final year, should come as near to fitting the individual for commercial work in this community as any plan which is feasible for the schools to undertake.

Many secondary school commerce departments are making similar surveys of their own local situations to discover not only what commerce courses to offer, but also what office equipment is essential. To illustrate, a survey made in Point Pleasant, West Virginia,² showed that a well equipped commercial department should have typewriters, adding machines, cash registers, bookkeeping machines, and check writers, since these are used in almost every business or office.

A survey made in New Orleans³ to determine whether the local commercial curriculum was so constructed as to prepare particularly for initial employment and subsequent promotion in the special kinds of office and store occupations led to these recommendations:

Since promotion bears more of a direct relation to the individual and the quality of his work than it does to the immediate position, it is necessary that

¹ Anderson, John A., "Fitting the Commerce Course of the High School and Junior College to the Needs of the Community," *Educational Research Bulletin*, Vol. IV, No. 9, Pasadena Public Schools, Pasadena, Calif., May, 1926.

² A town of 3,059 population according to the 1920 Census. For a more complete report of this survey, see: *Balance Sheet*, October, 1927, Southwestern Publishing Co., Cincinnati, Ohio.

³ Abrams, Ray, *How Can the Boys' High School of Commerce Equip Its Students for Initial Jobs and Subsequent Promotion in Business?* Unpublished Master of Arts Thesis.

the special aptitudes of students receive due consideration, so that they will be prepared to do the work which they like best.

Since future promotion as well as immediate placement is kept in mind in preparation for business, specific vocational training should not be given to the exclusion of general business and academic subjects.

Since the proportion of those who enter the specific bookkeeping field is small, the undue amount of time given to this subject in the school curriculum should be reduced.

The present plan of offering Spanish should be continued, and extra effort be spent in seeing to it that the proper emphasis be placed on the mastery of Commercial Spanish by those who complete the course.

A recent survey of commercial education in the public high schools of Minnesota¹ showed that:

The number of pupils enrolled in commercial courses was approximately 20,000, which was 35 percent of the enrolment in the 170 schools having commercial departments, and 26 percent of all the high-school pupils in the state.

General business training of the sort needed by everyone irrespective of future vocation was lacking in most schools.

Commercial subjects were administered as a group of general electives in about two-thirds of the schools which maintained commercial departments. Less than one-third of these schools had organized commercial courses, composed of an orderly sequence of commercial subjects. Only three schools attempted to differentiate between the needs of stenographers, general business workers, and retail sales-people.

Illustrations of special one-semester courses in junior business practice—The Indiana state course in junior business practice² is more or less typical. It consists of these twenty units: Personality and decorum, thrift, common business records, cash records, simple business forms, banking and forms used in banking, investments and savings accounts, insurance, filing and indexing, handling mail in the office, use of directories and business reference books, telephone service, telegraph service, postal information, shipments of merchandise, sending money, railroad and travel information, ele-

mentary business law, types of business organization, and study of occupations.

The materials of each of these units are arranged in tabular form under these four captions: (1) Specific objectives, (2) content and suggested activities, (3) suggested method and procedure, and (4) differentiation and enrichment.

The objectives of the above course are stated as follows:

1. To present the fundamentals of business customs which are useful to all persons, regardless of occupation.
2. To provide for pupils who leave school early that type of business training which will best prepare them for junior office positions.
3. To serve as an exploratory or guidance course for pupils who may wish to survey the field of commercial education before electing subjects in it.
4. To furnish such basic knowledge of business forms and customs as will constitute a foundation for the more specialized commercial courses.

The New Trier one-semester course,³ open as an elective to all juniors and seniors and entitled "Business Organization and Administration," is illustrative of the more advanced courses offered high-school students in junior business training. The immediate objectives laid down in the course of study are:

- (1) To give pupils a background of terminology and apperception of modern business.
- (2) To provide graduates of New Trier with an understanding and knowledge of how a modern business is organized and how it operates.
- (3) To prepare the graduate, who is leaving to take a position in business, in such a way that he will have some idea of the major problems in his path of promotion.
- (4) To lay a broad background and foundation for prospective courses in university schools of business, which many of our students enter.

The remote objectives as stated in the course of study are:

- (1) To develop an attitude of cooperation, loyalty, and helpfulness toward the superior executives in the job he may assume.
- (2) To develop a social comprehension of modern business and its responsibilities.
- (3) To improve individual business ethics through study of policies and their effects.

Retail store training classes—Occupational and vocational surveys show that in many

¹ Weersing, F. J., *Commercial Education in the Public High Schools of Minnesota*, 1927. Unpublished thesis, Library, University of Minnesota, Minneapolis, Minn.

² *Tentative Course of Study in Junior Business Practice for Secondary Schools in Indiana*, State Department Bulletin No. G-1b, State Department of Education, Indianapolis, Ind.

³ *Commercial Course of Study*, page 17 of mimeographed material, Winnetka, Ill.

cities the number of workers employed in store-selling occupations far exceeds the number employed in clerical, bookkeeping, and stenographic work. This had led to the introduction in some schools of courses preparing for selling and store service positions.

In what grade should commercial curriculums begin to be highly specialized?—While pupils' length of school expectancy and local business conditions will bring different answers to this question in different communities, most school authorities agree that specialization should not begin too early. To illustrate, in Baltimore, Md.,¹ the commercial course in the tenth grade of the senior high school is general with the exception that the students have the opportunity of electing shorthand if they desire to major in stenography. At the beginning of the eleventh grade, pupils may choose the particular field of commercial training in which they desire to specialize. At present, in the Baltimore senior high schools, the pupils may select one of the following:

1. Preparation for the university school of commerce.
2. Stenographic employment.
3. Accounting.
4. Retail selling.
5. General business.
6. Office practice and machine operation.

According to the Los Angeles course of study:²

The study of bookkeeping should not be started earlier than the tenth year. It is even better for those specializing in bookkeeping, and expecting to remain in high school for four years, to wait until the eleventh year to begin it, and take their second year of bookkeeping and their commercial practice concurrently in the twelfth year. A student would thus spend three or four periods a day upon his vocational subject immediately preceding the time of his going from school into the business world.

In the foreword of the state course of study for the high schools of Virginia, "Attention is

called to the fact that shorthand, typewriting, and bookkeeping are deferred to the third and fourth years. These subjects, if they are to be successfully taught, require as broad a general educational background as can be secured, and as much maturity as possible on the part of the pupil."

In St. Louis, the courses in accounting³ extend from the tenth through the twelfth grades; the courses in stenography⁴ extend from the eleventh through the twelfth.

What are the characteristics of a good commercial curriculum?—A survey of the current literature on this point leads to these tentative conclusions: The commercial curriculum should be based on a survey of community needs, which shows what students are expected to know and what they will be required to do in the jobs which are open to high-school drop-outs or graduates. It should be subject to constant revision. Business is constantly changing and unless the schools keep pace with these changes their products will not be able to meet the demands made upon them. The commercial curriculum of one community cannot be copied by another because it must meet the demands of the particular community and student body which it is to serve.

According to the report of the Committee on Research in High-School Commercial Studies in the *Sixth Yearbook*⁵ of the Department of Superintendence, commercial curriculums can have no specific objectives except when planned:

- a. In connection with a definite group of pupils.
- b. In relation to definite commercial positions.
- c. In the community in which the curriculums are to be given.

What quality of handwriting is needed by clerical workers?—The director of commercial education in the Philadelphia public schools⁶ secured 2000 specimens of vocational

¹ See *Commercial Education, Course of Study for Junior and Senior High Schools*, City of Baltimore, Department of Education, Division of Vocational Education, 1925, p. 10.

² *High-School Commercial Studies, Course of Study*, Los Angeles City School District, School Publication No. 114, September 1, 1925, pp. 11-12.

³ *Accounting for the High School*, Curriculum Bulletin No. 36, Board of Education, St. Louis, Mo., 1926.

⁴ See: *Stenography and Typewriting for the High School*, Curriculum Bulletin No. 37, Board of Education, St. Louis, Mo., 1926.

⁵ Department of Superintendence, *The Development of the High-School Curriculum*, Washington, D. C., National Education Association, 1928, p. 453.

⁶ Kirk, John G., "Handwriting Survey to Determine Finishing Standards for the Philadelphia Public Schools," *The Journal of Educational Research*, Vol. XIII, No. 4, April, 1926, pp. 259-272.

handwriting from the employees of 21 large concerns. The total list of vocations included was 52. Each specimen was rated twenty different times on the Ayres Measuring Scale for Handwriting, Gettysburg Edition, in steps of 5, by 20 different judges. The average score of each specimen was secured and the occupational and general averages determined and tabulated. The 20 judges agreed that while quality 60 of the Ayres Handwriting Scale is acceptable for social correspondence and non-commercial groups, quality 70 should be reached by all who wish to engage in commercial pursuits.

*Research findings for the improvement of classroom practices in stenography*¹—Seven types of studies are being carried on—those having to do with (1) prognostic tests, (2) diagnostic tests, (3) achievement tests, (4) analysis of the work of the stenographer, (5) measurement of difficulty of dictation material, (6) method of presentation of teaching materials, and (7) vocabulary studies.

Present diagnostic tests do not appear to have a sufficient degree of reliability for general school use. However, the methods of approach are of interest to teachers of stenography.²

Some experimentation with diagnostic tests which reveal weak spots in instruction or in the learning of pupils is under way.³ They show the need of making careful and detailed analyses of errors in order to improve teaching.

Completion, true-false, and multiple-choice tests for measuring achievement in shorthand are also being experimented with.⁴

Further research is needed to determine what the average pupil and the average class can be expected to do in learning shorthand in given periods of time.⁵

In measuring the difficulty of dictation material, the word, the average number of syllables to the word, and the stroke count are among the measures of writing effort.⁶ Further research is needed to determine which of these is the most accurate basis for measurement.

Studies which show that approximately 1,000 words constitute not less than 85 percent of the words used by the average person, and Horn's⁷ study which lists the ten thousand words most frequently used in business and social correspondence offer the most reliable vocabularies from which to select words for shorthand classes.

The kind of research needed to determine the words required by stenographers preparing for employment in special fields is illustrated by Horn's compilation of words most frequently used in bankers' letters.⁸ After tabulating the words found in 1125 letters written by bankers in 15 states grouped so as to represent various sections of the country, the investigator reached these conclusions:

This study does not show that the words used in bankers' correspondence apply at all exclusively to the banking business, and yet the list is in a certain sense a vocational list.

Training which meets the needs in one section of the country will also meet the needs in other sections.

¹ See: *First Yearbook*, Eastern Commercial Teachers' Association, 253 Lexington Avenue, New York City, Chapter XV, Research Materials for the Teacher of Shorthand, by Florence Sparks Barnhart. Contains a bibliography of 41 articles on each of the six types of research described in the subsequent paragraphs.

² The April, 1927, issue of the *Journal of Personnel Research* presents a digest by Max Freyd of all tests used for discovering aptitudes for stenography so far published. Reprinted in the *Journal of Commercial Education*, May, June, September, and October, 1927.

³ See: Rollinson, Ethel A., *Diagnostic Shorthand Tests*, New York, The Gregg Publishing Company, 1924.

⁴ *Method for Supervising Shorthand Classes in the Des Moines High Schools*, by Clay D. Slinker, Director of Business Education. (Unpublished.)

⁵ Soutter, Helen S., *An Analysis of the Shorthand Errors Made by One Hundred Fifty Beginning Pupils as Revealed through Two Types of Tests*. (Unpublished), University of Chicago, 1927.

⁶ See: Dush, Willa M., *The Building and Use of Achievement Tests in Gregg Shorthand*, Thesis, New York University, June, 1927.

⁷ Nelson, Lenora M., "Diagnostic Tests in Shorthand Theory," *American Shorthand Teacher*, November, 1927, pp. 96-97.

⁸ Saphier-Smyth, *Stenographic Achievement Tests*. New York, Isaac Pitman & Sons, 1927.

⁹ For an attempt that has already been made, see: Raymond-Adams, *Standards in Elementary Shorthand*. New York, The Gregg Publishing Company, 1926.

¹⁰ See: Harrison, E. W., *Syllable Intensity Versus Shorthand Difficulty*, Unpublished study by the Vice-Principal of the Longwood High School, Cleveland, Ohio, 1927-28.

¹¹ Hayes, Bertha M., *An Analysis of Regents Shorthand Examinations to Measure Difficulty of Dictation Material*, by Miss Hayes, Julia Richman High School, New York City. Unpublished, 1927.

¹² Horn, Ernest, *A Basic Writing Vocabulary*, Iowa City, Iowa, University of Iowa Monographs in Education, University of Iowa Press, 1926.

¹³ Horn, Ernest, "The Spelling Vocabularies of Bankers' Letters," *English Journal*, Vol. XII, No. 6, June, 1923.

Secondary School Home Economics¹

What is the 1929 home? And what will probably be the type of home into which our present high-school girls will go? Also what are their particular levels of development at present? What are their immediate felt needs, relationships, and outlooks? What interests are motivating their conduct and attitudes?—The answer which a local course-of-study committee gives to these questions determines largely the type of secondary school course in home economics which it develops.

The president of the American Home Economics Association in 1928,² after reviewing the changes in home-making during the past two decades, outlined this viewpoint toward the modern home:

We will see the home as the place of abode of persons bound together by ties of affection, a place where affection of parents for one another, for their children, and among all members of the family is nurtured and enjoyed, where the immature are protected and guarded, a place where one may have rest and privacy, where one may keep his treasures, where one may satisfy his individual tastes, where fundamental culture, consisting of customs, language, courtesies, and traditions, is conserved and passed on to the young, a place where altruism and other worthy character traits are generated and cul-

tivated; a haven, a sanctuary, a source of inspiration, and a place where one may enjoy his individual kind of recreation and share it with others.

This viewpoint is already accepted by some home economics teachers, as shown by the following statement of aims of one unit in a recent course of study:

Family Relationships and Home Finances³

Aims:

1. To develop within the girl an appreciation of her family, and an understanding of her part as a member of that group.
2. To help the girl develop traits which will make her a better member of her family group.
3. To lead her to think about the problems and responsibilities of home and family.
4. To give the girl an understanding of the home as an important center of economic consumption.
5. To give the girl a sense of responsibility of the correct expenditure of her share of the family income.
6. To help the girl develop standards for home expenditures in keeping with the income.

An understanding of the problems of her home and family helps the girl to be a better member of that family. Good family life is the result of de-

¹ Local course-of-study committees charged with building secondary school courses in home economics will also find the following references helpful:

Bailey, Frances, *The Progress of Home Economics in the Secondary Schools, 1917-27*, Master's Thesis. Department of Home Economics, University of Chicago, Chicago, Ill.

California Home Economics Association, *High School Courses in Science of the Household, Nutrition, and Citizen Home Making*, May, 1927.

Crabbs, Lelah Mae, and Miller, Mabel Lawrence, *A Survey of Public School Courses in Child Care for Girls*. Department of Education, Merrill-Palmer School, 71 Ferry Ave., East, Detroit, Mich., May, 1927. 96 pp.

Department of Superintendence, *The Junior High School Curriculum*, Fifth Yearbook, Chapter XVI. National Education Association, Washington, D. C., 1927.

Department of Superintendence, *The Development of the High-School Curriculum*, Sixth Yearbook, Chapter XXI. National Education Association, Washington, D. C., 1928.

Dyer, Annie Robertson, *The Administration of Home Economics in City Schools*. Bureau of Publications, Teachers College, Columbia University, New York City, 1928. 143 pp.

Dyer, Annie Robertson, *The Placement of Home Economics Content in Junior and Senior High Schools*. Bureau of Publications, Teachers College, Columbia University, New York City, 1927. 112 pp.

Kansas State Department of Education, *Course of Study for High Schools, Part IX, Home Economics*. Topeka, Kansas, 1928. 123 pp.

Lansing, Mich., Board of Education, *Courses of Study in Home Economics for the Public Schools of Lansing, Michigan, Grades 6-12*. Lansing, Mich., 1927. 159 pp.

Missouri State Department of Education, *Home Economics Syllabus*, Bulletin No. 6, 1926. State Department of Education, Jefferson City, Mo., 1926. 137 pp.

Richardson, Anna E., and Miller, Mabel Lawrence, *Child Development and Parental Education in Home Economics*. American Home Economics Association, Baltimore, Md., 1928.

Rose, Ella J., *Analysis of Home Economics Textbooks to Determine Certain Standards*, Master's Thesis. Department of Home Economics Education, College of Education, University of Minnesota, Minneapolis, Minn., 1927. 100 pp.

St. Louis, Board of Education, *Home Economics for the High School*, Curriculum Bulletin, No. 41, St. Louis, Mo., 1926. 117 pp.

U. S. Bureau of Home Economics, Bibliography 1—Footwear; Bibliography 2—Selected List of Government Publications on Housing and Equipment; Bibliography 3—Selected List of Government Publications on Textiles and Clothing; Bibliography 4—Selected List of Government Publications on Foods and Nutrition; and Bibliography 5—Household Refrigeration, United States Department of Agriculture, Bureau of Home Economics, Washington, D. C.

Whitcomb, Emeline S., *Achievements in Home Economics Education*, U. S. Bureau of Education, Bulletin, No. 35, 1927. Washington, D. C., Government Printing Office.

Whitcomb, Emeline S., *Circumstances Surrounding the Election of Home Economics in the Senior and Regular High Schools*, Home Economics Letter No. 4, June, 1928; and *The Kind of Home Economics Needed for High-School Girls*, Home Economics Letter No. 5, September, 1928. Washington, D. C., U. S. Bureau of Education.

² Bane, Lita, "Home Economics Outward Bound," *Journal of Home Economics*, Vol. 20, No. 10, p. 695, October, 1928.

³ Course of Study for High Schools, Part IX, *Home Economics*. Kansas State Department of Education, 1928, p. 19.

terminated effort on the part of its members. Wise expenditure of family income requires planning. Each member of the family should share in the responsibility of planning the distribution of the income.

What agreement as to content of home economics courses?—An analysis of the content of 100 representative secondary school courses published since 1920 shows that there is little or no agreement.¹ In these 100 courses of study, a total of 2,659 different detailed topics including 9,995 topic elements were found. Not more than 15 percent of the detailed topics can be regarded as standardized in grade placement. In this analysis, it was assumed that the main divisions of home economics content like food and clothing were considered as *subjects*; that a large topic which could be broken up into many parts was a *leading topic*, such as food selection; that the many parts were *detailed topics*, such as where to buy food, when to buy food, and judging the quality of food. When these parts were divided further, the topics were called *elements*, such as how to buy food—in person, by telephone, cash and carry, or co-operative buying.

In these 100 selected courses, the largest amount of content is in *food* subject-matter, second in *clothing*, and third in the *house and its care*. Table 5 gives the distribution of content by subjects and by topics. Of the leading topics, 73 percent have 50 or more occurrences for the 100 courses, or 50 percent

agreement. Of the detailed topics, 42 percent have less than five occurrences.

A count was made of the topics under each subject as to which aspect was emphasized, such as: producer, managerial, consumer, health, science, art, and thrift. The three aspects on which greatest emphasis is placed are producer, managerial, and consumer. The producer phase was found in 65 percent of the topics in food, and 51 percent of the topics in clothing; while the consumer phase was found in only 36 percent of the topics in food, and only 12 percent of the topics in clothing. These findings should lead home economics course-of-study committees to ask themselves such questions as these: Does the actual study of conditions in the local community show that a large or small percentage of clothing is made in the home? If only a small percent is made in the home, should the emphasis given in home economics classes to clothing be from the consumer aspect? Is the percent of baking and canning done in the home sufficient to justify great emphasis on the producer's aspect of these topics?

Some of the more progressive secondary school home economics courses, while not minimizing or omitting skill, do give selection of materials, plan of work, and establishment of standards the place of primary importance, as shown by the following statement from the *Manual of Home Making Education for the High Schools of Alabama*:

The desirable outcomes to be attained by each girl are a growth and an improvement in her ability:

1. To select food in relation to her individual needs and those of the family.
2. To plan, prepare, and serve wholesome meals within the family income.
3. To develop acceptable standards of skill in all work of the home.
4. To dress suitably and becomingly, taking into consideration the family budget.
5. To plan and make the clothing which can be economically constructed in the home.
6. To select ready-made garments best suited to her individual needs.
7. To have a well-groomed appearance on all occasions.

TABLE 5.—NUMBER OF DIFFERENT TOPICS IN ONE HUNDRED HOME ECONOMICS COURSES OF STUDY

Subject	Leading Topics	Detailed Topics
Food.....	27	841
Clothing.....	14	797
House and its care.....	15	299
Income and spending.....	14	143
Child development.....	12	138
Home and family relations.....	8	89
Health and the home.....	13	117
Art and the home.....	7	134
Science and the home.....	17	101
Totals.....	127	2,659

Read table thus: In food subject-matter there are 27 leading topics and 841 detailed topics.

¹See: Dyer, Annie Robertson, *The Placement of Home Economics Content in Junior and Senior High Schools*. Bureau of Publications, Teachers College, Columbia University, New York City, 1927. 112 pp.

8. To plan and perform satisfactory units of work in the home, making those adjustments which the situation demands.¹

Problems in the selection of content of home economics courses—These are among the problems which face local course-of-study committees:

1. How can girls twelve to eighteen years of age be trained efficiently in high school for the home-making job which they will not enter until five to ten years later?
2. How can teachers be assisted to modify their curriculum materials to include a study of child care, social-home problems, problems of home consumption and family relations?
3. What is the relation of home economics to courses in art, biology, chemistry, physics, and the social sciences?
4. What should be the character of courses in home economics for college entrance credit?
5. Should all high-school courses in home economics have college entrance credit?
6. How should home economics courses be differentiated for pupils of different levels of ability, for pupils living on different economic levels and in varied environments, with different interests and ambitions, and with different amounts of outside-of-school home economics learning?
7. How can pupils be trained to become intelligent consumers?²

The need for educating the consumer is clearly shown by analyses of business concepts found in publications on marketing, advertising, and salesmanship prepared by the producer-sales group. They include such concepts as these: (a) Few consumers buy on the basis of intrinsic value since they are qualified to judge only very limited lines of goods. (b) Merchants do not take human desires as they come, they build up new tastes and demands through advertising. (c) By means of advertising skillfully planned, the individual will think he has without outside suggestion decided to purchase.

Upon what bases shall selection of the content of home economics courses be made?—To discover what pupils already know and to base instruction on the need for additional knowledge, studies are made concerning the actual home life, activities, and responsibilities of the

junior and senior high-school girl. These studies include:

1. What girls do at home.

To illustrate, in Denver a study³ was carried on by a committee of high-school teachers through questionnaires and analyses of the activities of 5106 junior and senior high-school girls, and reports through letters to or interviews with 850 parents. The activities were tabulated with frequency of performance. Helping in house cleaning, caring for own room, laundry, and help in preparation of meals were found to be the major activities of these particular girls.

2. What they learn at home by observation or "instinctively."
3. How they learn—by what method.
4. What they are interested in.
5. What they know before starting on a course.
6. What they should know and be able to apply at the completion of each year of work.
7. What supplementary home practices and knowledge may be acquired at home.
8. Investigation of present-day practices and activities in the home, in various types of homes and communities.

Child development and parental education courses in the high school—In 1927, 48 state and 71 city supervisors of home economics reported child care courses as a part of their state and city programs.⁴ These reports showed that in the majority of places child care is offered as a part of a course rather than as a separate course; that the unit is generally designated, "child care" or "child care and training," and that it is presented in grades 8 to 12. About half of the supervisors stated that no prerequisites were required for the child care work. The others reported that the grade in which the unit is offered largely determines the prerequisites.

The general aim is to develop the right attitude toward child life and motherhood, and an appreciation of child development; and the more specific aim is to teach the care of children in the present environment of the girl.

The average length of the course offered is about ten weeks, the class meeting five times

¹ Taken from the *Manual of Home Making Education for High Schools*, State of Alabama, Division of Vocational Education

² See also: Harap, Henry, *Education of the Consumer*, The Macmillan Company, New York, 1924.

Harap, Henry, *Economic Life and the Curriculum*. The Macmillan Company, New York, 1927.

³ See: Hopkins, L. Thomas, and Kinyon, Kate W., *Home Economics*, Research Monograph No. 1, Public Schools, Denver Colo., 1925. 71 pp.

⁴ See: Richardson, Anna E., and Miller, Mabel Lawrence, *Child Development and Parental Education in Home Economics* American Home Economics Association, Baltimore, Md., 1928, p. 18.

a week for periods from 60 to 80 minutes in length. According to the reports of 34 state supervisors of home economics, contact with young children was provided in 1927 in 1,620 schools, by having young children brought to the high school, or by providing contact with primary grades or with children in the girl's immediate environment.

Home economics teachers in most cases offer the child-care course, frequently with the help of specialists, usually the school nurse, occasionally the doctor, a member of the health department, or other teachers in the school.

Training for skilled parenthood and home making has its scientific, economic, aesthetic, and social aspects—Local course-of-study committees charged with building secondary school courses in home economics can no longer merely concern themselves with the teaching of cooking and sewing. Today the home-maker must know something, not only about the feeding and clothing of the family, but also about the fundamental principles of health, hygiene, and home nursing; something of the economic aspects of different branches of home-making, the furnishing and management of the home, child care, including not only the physical training, but the mental and spiritual as well; something about recreation; and something about woman's responsibility to society.

The home has narrowed, in the sense that it is no longer the place where most of the food and clothing for the family are produced; but it has widened in the sense that a larger percentage of women wage-earners are contributing to the economic support of the home and, for the most part, they are the spenders

of the family income and are responsible for the care and development of children in an increasingly complex environment.

The product of the home is human beings. The quality of this product will depend largely on the training given.

Tentative recommendations for local course-of-study committees—Where worthy home membership is an educational objective, one writer¹ suggests:

1. That home economics emphasis be based on life situations.
2. That the teaching of skills in home economics be retained in the curriculum, but definitely related to the effect of those skills on family welfare.
3. That an effort be made to secure better adjustments between parents and child and between child and child by using the home economics curriculum to give right attitudes toward use of leisure, health, social usages and relations, appreciation of beauty, use of money, respect for other members of family, and community affairs.
4. That boys as well as girls be educated for participation in home activities.
5. That facilities for adult education for home responsibilities be increased.
6. That account be taken of individual differences in the kind, quality, and quantity of assignments given to students.
7. That local needs and community assets or limitations be determined either by means of surveys and questionnaires or informally, and curriculum requirements be adjusted accordingly.
8. That definite cooperation be established with the many public and social agencies now endeavoring to educate for better living.
9. That better living through greater understanding of social-home problems be the goal of instruction.

¹ Cass, Millicent M., "A Study of Social-Home Problems," *Journal of Home Economics*, Vol. 20, No. 12, December, 1928, pp. 867-68.

Industrial Arts in the High School¹

Industrial arts education defined—According to the Pennsylvania state course of study,² industrial arts education includes that part of the practical arts field that pertains to instruction based upon practice with and knowledge about tools, materials, and processes significant to industry.

Industrial education is that form of vocational education which is designed to teach some industrial occupation or trade either in its entirety or in part.

Rating of industrial arts objectives in the junior high school and in the senior high school—Shopwork has been developing as a subject in the public schools since the establishment in 1879³ of the first manual training high school in St. Louis.

To determine what objectives are controlling present policies and programs of industrial arts education, Warner⁴ compiled fifteen specific purposes which seemed to represent fairly well all points of view expressed in books, periodicals, and courses of study. A jury of 58 people interested in industrial arts education ranked these 15 objectives in the order of their importance for the junior high school and for the senior high school.

For the junior high school, according to the jury ratings, the following aims are of essential importance:

1. Exploratory or findings values which relate to the detection, discovery, or tryout of interests and aptitudes.
2. General guidance, both educational and vocational, gained through broad contacts and studies of industrial vocations.
3. Household mechanics or the development of handy-man abilities about the home.
4. Avocational opportunities for the development of hobbies, or a side-line interest.
5. Formation of desirable personal and social habits and insights which will influence conduct.
6. Consumers' or utilizers' knowledge and appreciations of the products of industry.
7. Development of a degree of skill with tools and in tool or machine processes commensurate with the ability of the pupil and incidental to the completion of a project or activity which seems to have "educational" value.
8. Correlation or integration with other studies and interests both in and out of school.
9. Vocational purposes in the definite preparation for a future industrial vocation. Applicable to from 0 to 16 percent of the average junior high-school group where the occasional boy has to drop out of school.

For the senior high school, according to the jury ratings, the following aims apply:

1. General guidance.
2. Further exploratory and avocational opportunities.
3. Vocational preparation for a specific industrial vocation.
4. Consumers' or utilizers' knowledges and appreciations of the products of industry.

¹ For more detailed information see:

Department of Superintendence, *The Junior High School Curriculum*, Fifth Yearbook, Chapter XVII. National Education Association, Washington, D. C., 1927.

Department of Superintendence, *The Development of the High-School Curriculum*, Sixth Yearbook, Chapter XXII. National Education Association, Washington, D. C., 1928.

Bennett, G. Vernon, *Vocational Education of Junior College Grade*. Baltimore, Warwick and York, Inc., 1928.

Denver Public Schools, *Industrial Arts*, Research Monograph Number Four. Board of Education, Denver, Colo., 1928.

Edgerton, A. H., *Findings Related to Industrial Arts Instruction*. University of Wisconsin, Madison, Wis., 1928.

Friese, John F., *Exploring the Industrial Arts*. New York, The Century Co., 1926.

Grant, Gordon A., *Introduction to the Teaching of Industrial Arts in Secondary Schools: A Syllabus for the Guidance of Teachers in Service and Students in Teachers Colleges and Normal Schools*. Teachers College, Columbia University, New York City, 1926.

Lansing Public Schools, *Industrial Education, Grades X-XII*. Board of Education, Lansing, Mich., 1927.

Mays, Arthur B., *The Problem of Industrial Education*. New York, The Century Co., 1927.

Proffit, Marie M., *Values of the Manual Arts*, U. S. Bureau of Education, Industrial Education Circular No. 27, April, 1927.

St. Cloud Public Schools, *Manual Arts in the Junior High School*. Board of Education, St. Cloud, Minn., 1925.

St. Louis Public Schools, *Manual Arts for the High School*, Curriculum Bulletin No. 42. Board of Education, St. Louis, Mo., 1926.

Snedden, David; Warner, William E.; and others, *Reconstruction of Industrial Arts Courses*. Bureau of Publications, Teachers College, Columbia University, New York City, 1927.

U. S. Bureau of Education, *Biennial Survey of Education, 1924-26*, Bulletin, 1928, No. 25, Chapter VII, Industrial Education. Government Printing Office, Washington, D. C.

Vaughn, Manuel J., and Mays, Arthur B., *Content and Methods of Industrial Arts*. New York, The Century Company, 1924.

Warner, William E., *Policies in Industrial Arts Education*. Ohio State University, Columbus, Ohio, 1928.

² *Industrial Arts Education in Grades 7, 8, and 9*, Bulletin No. 4. Commonwealth of Pennsylvania, Department of Public Instruction, Harrisburg, Pa., 1927.

³ Woodward, C. M., *The Manual Training School: Comprising a Full Statement of Its Aims, Methods, and Results*. D. C. Heath & Co., 1887. 366 pp.

⁴ Warner, William E., *Policies in Industrial Arts Education*, Chapter V. Ohio State University, Columbus, Ohio, 1928.

5. Formation of desirable personal and social habits.

6. Development of a degree of skill with tools and in tool or machine processes commensurate with the ability of the pupil and incidental to the completion of a project or activity which seems to have "educational" value.

How determine the content of industrial arts courses?—In the past, courses of study in the industrial arts field have often been based upon the demands of trade or industry. Particular emphasis was placed upon the skills required, which were determined to a large extent by job analysis. Since practically all the skilled trades have become specialized, it does not seem reasonable to base a course of study for all pupils on the special requirements of any particular trade or group of trades. Until the pupil is able to choose his vocation intelligently, his experiences should be directed along more or less general lines of social and industrial activities.

An analysis of the home activities related to industrial arts of junior and senior high-school boys is an indirect means of determining the course of study. In Denver,¹ for example, the list of activities found by the home survey did not of itself determine the content of the course. It was found preferable to base the course on the tool processes required to perform these home jobs. To illustrate, among the frequently mentioned home activities were repairing a fence and repairing a screen door. Neither of these activities could well be used in the school shop. But the eleven tool processes involved in repairing a fence and the thirty-six involved in repairing a screen door were used along with the processes involved in other home activities in determining the suitability of proposed shop projects. Those shop projects which involved most nearly the same processes as the home activities most frequently mentioned were selected for the course of study.

The general shop in the junior high school ²
—The general shop provides for more than one

activity to be carried on simultaneously under the direction of one teacher. The work is organized, not on the basis of wood, metal, or electricity, but as a series of projects of increasing complexity. A project may combine sawing or planing with electrical wiring and elementary metal work.

The various types of general shop content include: (1) trade exploratory, (2) household mechanics, (3) farm mechanics, (4) general woodworking, (5) general metalwork, (6) arts and crafts, and (7) practical mechanics. The aims of the general shop are: developmental experience interpretative of the major phases of the world's industrial work, "handyman activities," consumer's knowledge and appreciation, guidance, hobbies, and, for a small percent, vocational preparation.

A survey of the industrial arts needs of a community is probably the best means of determining whether a general shop or a number of specialized shops or both are needed in the junior and senior high schools of a particular school system.

Industrial arts in the high school should include other activities besides woodworking—According to the last U. S. Bureau of Education Biennial Survey, the variety of work offered in the great majority of schools is still so limited that the values which should accrue from this type of work cannot be realized. Woodwork is commonly the only shop activity offered, or else it receives a larger proportion of the time, relative to other activities, than its value warrants.

Controlling principles relative to vocational education and the secondary school—These principles, according to the California plan of vocational education,³ are:

1. Individual counseling.
2. Adapting the training program to the interests, aptitudes, and capacities of the individual.
3. Linking the training program with industry.
4. Placement, follow-up, and adjustment after placement.
5. Selecting occupationally competent individuals and training them as vocational teachers.

¹ Denver Public Schools, *Industrial Arts*, Research Monograph Number Four. Board of Education, Denver, Colo., 1928.

² See: Newkirk, Louis V., and Stoddard, George D., *The General Shop*, p. 190. Peoria, Ill., The Manual Arts Press, 1929.

³ See: Bulletin No. C-1, *The California Plan of Vocational Education*, p. 6. State Department of Education, Division of City Secondary Schools, Sacramento, Calif., 1927.

Trends in High-School Music ¹

Present status of music instruction in public high schools—Until recently, music instruction, when offered in the high school, usually consisted of chorus or assembly singing once or twice a week and was not considered of sufficient importance to warrant regular school credit.

A 1927 survey ² of music instruction in 40 cities over 50,000 in population showed that it is no longer the mere group-singing of a past generation or the extra-curriculum activity of a few years ago, but a regular high-school subject, carrying full credit and receiving sufficient time and attention to make its teaching stand out as distinctly worthwhile. In these 40 cities, the extensiveness of the offering in music is shown by 15 distinct types of work, including: Choruses (boys, girls, and mixed), appreciation, history, harmony, theory, orchestra, band, glee clubs (boys, girls, and mixed), piano, violin, and other instruments, and clubs such as banjo, ukulele, and operetta.

Chorus work, which includes general class work in vocal music, was given in some form in all 40 cities. The tendency is to require it in the junior high school but to make it elective in the senior high school. History, harmony, and theory as separate courses and combined with appreciation are most often given in the senior high school, where credit is allowed, usually comparable to that offered for other school subjects with equal time requirements.

Orchestras were maintained in 31 of the 40 cities in the first two years of the junior high school, and in all but one city in the ninth grade; 37 of the 40 cities reported orchestras

in the senior high school. Bands were maintained in 17 cities in the seventh and eighth grades, and in 23 cities in the ninth grade; while 26 of the 40 cities reported bands in the senior high school.

Class instruction in violin is increasing rapidly; towns of 10,000 to 20,000 population frequently have one or two hundred pupils receiving such instruction. Even in 1922, one large city reported 3,100 pupils receiving class instruction in violin.³

The recognition of music by the College Entrance Examination Board brought about the question of school credit. With the granting of credit, music instruction is rapidly losing its extra-curriculum character and becoming a regular subject.

The plan, formulated by the educational council of the Music Supervisors National Conference, for giving high-school credit for the study of music under "outside" teacher has also been adopted by many school systems.

According to the U. S. Bureau of Education, in 1922, 45.7 percent of all towns and cities of 1,000 population or over reported having special teachers or supervisors of music. At present, seven state departments of education—Kentucky, Maryland, Michigan, Mississippi, New York, Ohio, and Pennsylvania—have state supervisors of music.

Vocational and avocational guidance in music—Investigations have been carried on which make it possible, with a considerable degree of reliability, to diagnose a pupil's musical talent and to predict his probable success or failure in the realm of music.⁴ Vocational guidance is primarily concerned with finding

¹ Local course-of-study committees charged with building courses in high-school music will find these references helpful:

Course of Study in Music, Bulletin 44, Commonwealth of Pennsylvania, Department of Public Instruction, Harrisburg, Pa., 1927.

Department of Superintendence, *The Junior High School Curriculum*, Fifth Yearbook, National Education Association, Washington, D. C., 1927, Chapter XIV.

Department of Superintendence, *The Development of the High School Curriculum*, Sixth Yearbook, National Education Association, Washington, D. C., 1928, Chapter XIX.

Dykema, Peter W., "Tests and Measurements in Music Education," *Music Supervisors National Conference Proceedings*, Paul J. Weaver, Chapel Hill, N. C., 1925. See also *Proceedings of Music Supervisors National Conference*, 1926, 1927, and 1928.

High-School Course of Study in Music, Junior-Senior Divisions, Grades 7-12, Public Schools, Pittsburgh, Pa., 1927.

Music for the High School, Curriculum Bulletin No. 34, Board of Education, St. Louis, Mo., 1926.

National Research Council of Music Education, *Report*, Bulletin No. 4, Music Supervisors National Conference. Published by Paul J. Weaver, Editor, *Music Supervisors Journal*, Chapel Hill, N. C., 1925.

² Hughes, Cecil L., "Music Instruction in Junior and Senior High Schools in Forty Representative Cities," *The School Review*, Vol. XXXV, No. 6, June, 1927, pp. 452-7.

³ Earhart, Will, and Boyd, Charles N., *Recent Advances in Instruction in Music*, U. S. Bureau of Education Bulletin, 1923, No. 20, p. 9.

⁴ A complete and critical evaluation of tests of aptitude, achievement, and appreciation of music is presented by Jacob Kwalwasser in his *Tests and Measurements in Music*, Boston, C. C. Birchard & Co., 1927.

and training the artist, and conversely in discouraging the less talented. Avocational guidance, on the other hand, is concerned with the problem of providing everyone with some kind of intelligent instruction in music, which will utilize musical endowments, no matter how meager, and which will result in pleasure and profit.

Music appreciation—In addition to a familiarity with good music, it is entirely possible to give to the technically untrained certain information of a structural character and of historical significance which would add immeasurably to the intellectual interest in good music. Definite attempts are made to acquaint pupils with a wide range of the world's best music. Mechanical instruments for reproducing music, aided by an advancing musical culture in the nation as a whole, have led to the inauguration of systematic instruction in appreciation of music in large numbers of schools. Whether the radio brings the latest jazz or symphony concerts into American homes in the future depends largely on the extent and success of our public school courses in music appreciation. To teach children to know and love good music—and this implies that they are also brought to recognize and have a distaste

for vulgar, tawdry, flimsy music—is a much more difficult problem than to teach them a technic or skill, for it requires guiding the emotions and building up attitudes and appreciations.

Nothing in modern psychology and principles of teaching is more significant than the importance assigned to the likes and dislikes developed in the child during his school life. It is also a recognized fact that music can be used as a stimulant and guide to the emotional life of children. According to one writer, music is the language of the emotions.

According to the Missouri state syllabus in junior and senior high-school music:¹

The musical progress of a nation cannot be measured solely by the number of its famous artists, its symphony orchestras, or its grand opera companies. It depends also upon the opportunity of people of all classes to hear good music and to learn how to express whatever taste and talent they may have for music. The best hope for musical progress lies with the schools, which can and must provide music for every child according to his abilities.

There is only one valid test of the teaching of appreciation of music. It is the extent to which those taught seek more of the same or similar kind of music.

Art Education in the High-School²

What are the objectives of art education?—The Missouri State Course of Study for Junior and Senior High Schools³ illustrates the trend of newer courses toward a clear statement of objectives. General objectives for every pupil are given first; then general objectives for

the talented pupil are listed. Following these general objectives are specific objectives; first for every pupil and then for the talented. In the latter division of specific objectives are given definite questions which clarify the meaning. For instance, to make clear the

¹ *Music Syllabus*, Bulletin No. 3, 1925, State of Missouri, Department of Education, Jefferson City, Mo., p. 11.

² For more detailed help see:

Boas, Belle, *Art in the School*, Garden City, Doubleday, Page and Company, 1924. 124 pp.

Cox, George J., "Shall We Have Intelligence Tests in Art?" *Teachers College Record*, Vol. XXVIII, No. 7, March, 1927, pp. 690-5.

Denver Public Schools, *Art Course of Study*, Monograph No. 14, Board of Education, Denver, Colo., 1925. 236 pp.

Department of Superintendence, *The Development of the High School Curriculum*, Sixth Yearbook. National Education Association, Washington, D. C., 1928. Chapter XX.

Dow, Arthur W., *Composition*. Garden City, Doubleday, Page and Company, 1924. 128 pp.

Long Beach Public Schools, *Art Course of Study for the High School*, Board of Education, Long Beach, Calif., 1927. 77 pp.

Richardson, Esther Ruble, "A General Course in Art for High Schools," *The School Arts Magazine*, Vol. XXVIII, No. 1, September, 1928, pp. 34-36.

Tannahill, Sallie B., "Problems in Art Education," *Teachers College Record*, Vol. XXVIII, No. 7, March, 1927, pp. 696-706.

Whitford, W. G., "Curriculum-Building in Art," *Elementary School Journal*, December, 1920, and January, 1921, pp. 281-9. 352-60.

Whitford, W. G., "The Problem of Differentiation and Standardization of Art Work in Modern High Schools," *The School Review*, Vol. XXXII, Nos. 5 and 6. I, May, 1924; and II, June, 1924.

³ *Courses of Study in Junior and Senior High Schools*, Bulletin No. 5, 1925, *Art Syllabus*, State of Missouri, Department of Education, Jefferson City, Mo.

specific objective, "To have experience in analyzing objects for art elements (line, color, and the like)," the following questions and examples are given: "This hat is unbecoming. Is it the size, the color, or the line which is wrong?" "These vases are alike in color. Which shape will better suit these flowers?"

According to the Missouri State Course of Study:

Art education should provide experiences which will make all pupils intelligent consumers of art and give those who are adapted for it an opportunity to become intelligent producers.

The General Objectives of Art Education Are:

A. For Every Pupil—The Consumer of Art:

1. To increase his judgment and taste in regard to what constitutes beauty in his possessions and surroundings and arouse his desire to make these as beautiful as possible.

2. To develop his full capacity to enjoy beauty as it appears both in his daily environment and in the work of great artists and craftsmen.

3. To have such experience in creative art work and in selecting, arranging, and judging finished products that he may:

- a. Have the pleasure which comes from even the simplest experience of this type.

- b. See the vocational possibilities of art.

- c. Develop an interest in art processes as well as in the finished products.

4. To increase his social consciousness through:

- a. Acquaintance with the art of other peoples and other times.

- b. Participation with others in art work planned, executed, and judged by the group, and resulting in benefit to the group as a whole.

B. For the Talented Pupil—The Producer of Art:

1. To have varied technical experience which will try out his talent, lay a good foundation for future specialization, and afford a basis for intelligent choice of a field in which to specialize.

2. To acquire a knowledge of vocational opportunities and rewards in art and related fields.

3. To develop knowledge, judgment, and appreciation of art products and of workmanship in various fields of art.

4. To have, when he has chosen his special field, a somewhat more intensive study of the technic, history, and evolution of that field and to develop high ideals in relation to it.

Astute appreciation of fine quality in design—an aid to all as consumers—According to the *Sixth Yearbook*,¹ the outstanding change

in the aim of art education in schools is the emphasis upon teaching appreciation of fine quality of design—particularly in those objects and materials which, now or in the future, the child will need to select, arrange, or contemplate. In progressive schools, appreciation has almost completely superseded representative drawing. Formerly all children, whether talented or not, were put through exercises in drawing. Time is now more profitably spent in learning to choose dress materials, a rug for the home, color-schemes of houses, landscape plans, or to discover why one local building is ugly and another beautiful.

Methods suggested for teaching art appreciation and conducting the general arts course—These methods are frequently used:²

1. Illustrated talks by the teacher on the elements of art: line, form, tone, color, and composition.

2. Notebooks in which pupils paste examples from the fine and industrial arts to illustrate art elements in things of everyday use.

3. Stereopticon lectures, the slides for which may be obtained from state universities, art museums, and supply houses.

4. Organized trips to art museums, stores, civic buildings, and other points of local interest to view objects of great beauty.

5. Exercises in technic, experience with the various mediums of artistic expression, original creative work, and training in the use of art principles.

6. Bulletin board to display examples of beauty collected by both teacher and pupils.

7. Map for marking points of interest in the community.

8. Lectures and exhibits by representatives of stores and factories.

Creative expression versus imitation—Another significant tendency is in the direction of allowing and encouraging the child to express his ideas, conceptions, and visions freely and in his own way in some art form. This emphasis is gradually replacing training in drawing and lessons in perspective as taught in many schools.

Progress in creative expression will come through the teaching of the principles of art structure, subordination, rhythm, repetition, apposition, and symmetry.

¹ Department of Superintendence, *The Development of the High School Curriculum*, National Education Association, Washington, D. C., p. 397.

² See: Whitford, W. G., "The Problem of Differentiation and Standardization of Art Work in Modern High Schools," II, *The School Review*, Vol. XXXII, No. 6, June, 1924, pp. 422-3.

Art principles—Under wise guidance, high-school pupils may be led to abstract the same artistic principles from experiences employing widely different applications. The composition of a page of type with cuts can be made to yield the opportunity for the same kind of judgments and harmonious space relations as the designing of a wall area with its subdivisions of space by doors, windows, and mouldings. Hence, instead of dictating a set of problems, which logically should vary with local conditions, some courses of study stress the application of definite art principles and suggest a list of optional applications.

This same thought has apparently influenced local school systems in the variety of courses which they have developed as an interpretation of color, line, mass, representation, design, and applied arts.

Broad scope of modern art courses—Usually two distinct kinds of courses are offered: (1) Courses of the general arts type, and (2) special arts courses of various kinds. To illustrate, St. Louis, Mo.,¹ offers the following art courses: (1) Basic art, 2 terms; (2) design in dress, 1 term; (3) design in the home, 1 term; (4) design in crafts, 2 terms; and (5) color, design, and drawing in commercial problems, 2 terms.

The well-rounded art course today affords the pupil these four-fold educational experiences: drawing, the graphic experience; design, the ornamental experience; construction, the motor experience; and appreciation, the mental experience.

Art Teaching at Various Grade Levels²

Art in the elementary grades—In the elementary grades, the chief value of art is in the enrichment it offers to school life.

Modeling clay, painting pictures, looking at pictures, and all sorts of manual activities are necessary for the fullest development of child life. Art here is self-expression. Appreciation grows and creative skills develop subconsciously.

It is quite enough that the teacher simply acquaints the pupils with a wide range of related

illustrative material and provides ample raw material for creative self-expression.

The more formal the lesson in art becomes, the less it is of art value.

In the fifth and sixth-grade work the development of real skill is of great importance. Skills in art that are not partially developed in childhood rarely achieve great heights later in life. The consciousness of what the child does is invested in the teacher. The child's school life is sufficient unto itself.

Art in the junior high school—In the junior high school, objectives begin to anticipate what the student must do when he leaves school. This weakens, somewhat, the whole fabric of art teaching, for the one thing that art of all subjects offers is an activity that is more or less complete in itself.

The art teacher can be of real service to other teachers if he can show how life in the junior and senior high schools can become more than a "means to an end" as it so often is now.

The way in which the art teacher can do this is by directly relating art to the student's individual life, to his home, and to his immediate surroundings.

Much of the educational value of art teaching lies in the teacher's point of view. If the teacher is academically minded, he will tend to ignore the relation of art to the student's life, his home, and his immediate surroundings, and will try to make productive artists of all his students. Painting pictures and making designs for commodities are not sufficient to place art work in the junior high school on an educational basis. Something must be done to show students how art in everyday life is related to them.

Pointing out to a student the fine relationship that exists in a work of art is one way of going about this problem. Another way is to develop his selective judgment as a consumer of art objects. A still better way is to develop his ability to select and effectively combine necessities of life in relation to his appearance, his home, and his community.

Art in the senior high school—The art work here consists of a continuation of the work of the junior high school with emphasis on the development of the individual student's intellectual and aesthetic growth.

¹ See: *Art for the High School*, Curriculum Bulletin No. 35, Board of Education, St. Louis, Mo., 1926, p. 13.

² This section is partly based on a lecture on "Art in Public Schools," by Albert W. Heckman, Teachers College, Columbia University, before the teachers of Washington, D. C.

The development of art appreciation and creative ability necessitates well-informed and carefully trained teachers.

The art appreciation course in the senior high school should deal first of all with the art of today. Art magazines, reproductions of works of architecture, sculpture, paintings, ceramics, textiles, furniture, metal work, posters, books, and other minor objects should all be brought into play. It is not so essential that many objects of similar nature be brought in as it is that a variety of objects be dealt with.

Correlating art with other school subjects—

The chief reason for correlating art with other school subjects is its unifying influence, so that instead of becoming another separate body of unrelated material, it is coordinated with a body of learning already understood, thus readily entering into the student's experience. But merely the fact that it is connected with history or science, however, does not make it valuable. It must also have value in itself.

Certain Trends in Health and Physical Education ¹

*The new principles of curriculum building applied to health education—*The new curriculum is a changing product. It is concerned with actual daily living. It also looks to the future and attempts to train youth for a changing civilization. It takes account of: (1) the facts of child growth, (2) psychological arrangement, (3) adaptations to individual differences, (4) the vocations, and (5) the larger objectives.

What does a changing curriculum imply in health education? It means that pupils must be taught not merely to apply present-day knowledge; but they must also understand the evolution of facts and theories and the truth that each year brings new knowledge, which should be applied in daily living, if man is going to have as complete a control over his physical life as possible.

What does a curriculum which trains for life imply in health education? The lengthening of the span of human life is one of the

expected outcomes of such teaching. Health education, along with sanitary measures, has already had a share in lengthening the average span of human life—which in 1900 was 49 years; in 1910, 51 years; in 1920, 55 years; and in 1921, 58 years. After passing the first few years when hazards are great, the child who has reached his fifth birthday has an average chance of living to be 62 years old. Infant mortality has been reduced approximately one-third in the past twelve years.

What does a curriculum less concerned with logical arrangement of subject-matter mean in terms of health education? It means that instead of having a child merely learn facts of anatomy and physiology, such as the names of the bones of the body and the charting of the nervous system, he will be encouraged to practice health habits twenty-four hours each day.

*What are the goals of health education?—*According to the *Sixth Yearbook* ² they are:

¹ For additional help, see:

Department of Superintendence, *The Development of the High School Curriculum*, Sixth Yearbook. National Education Association, Washington, D. C., 1928. Chapter XXIV, Health and Physical Education in Junior and Senior High Schools.

Affleck, G. B., "Selected Bibliography of Physical Education and Hygiene," *American Physical Education Review*, Vol. 33, No. 236, April, 1928, pp. 240-7.

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Bovard, John R., and Cozens, Frederick W., *Tests and Measurements in Physical Education, 1861-1925*. University of Oregon, Eugene, Ore., 1926.

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Lerrigo, Marion O., *Health Problem Sources*. Teachers College, Columbia University, New York City, 1926.

McCurdy, J. H., "Measurements in Physical Education of Service to Superintendents, Principals, and Teachers," *American Physical Education Review*, Vol. 33, No. 237, May, 1928, pp. 316-320.

Ready, Marie M., *Physical Education in City Public Schools*, Physical Education Series No. 10, U. S. Bureau of Education, 1929.

Rogers, Frederick Rand, *Physical Capacity Tests in the Administration of Physical Education*. Teachers College, Columbia University, New York City 1925.

Rogers, Frederick Rand, *Tests and Measurement Programs in the Redirection of Physical Education*. Teachers College, Columbia University, New York City, 1927.

Wood, Thomas D., and Lerrigo, Marion O., *Health Behavior, A Manual of Graded Standards of Habits, Attitudes, and Knowledge Conductive to Health of the Physical Organism, and of Personality, Home, Community, and Race*. Bloomington, Ill., Public School Publishing Company, 1927.

² Department of Superintendence, *The Development of the High School Curriculum*, Sixth Yearbook, p. 469. National Education Association, Washington, D. C., 1928.

1. To establish health habits and standards.
2. To instill a working knowledge of practical facts relating to cleanliness and sanitation, to food, fresh air, rest, exercise, games, sports, and other types of recreation, the causes of preventable diseases, and the means of checking them.
3. To build ideals regarding health, beauty, and service for self, school, and community that will result in better living, including proper use of leisure time.
4. To develop the individual's sense of his responsibility, not only for his own health, but for that of the community in which he resides.

Content of courses in health and physical education—The questions which confront the makers of curriculums in health and physical education cannot in any instance be completely and fully answered by available research.¹ In the meantime, the schools of the country are looking for the best available guidance, relative to immediate health teaching. Two recent reports² are available which give an authoritative compilation of technical statements and a consensus of professional opinions. All teachers of health and physical education will find these reports of interest.

Establishment of health habits aided by knowledge of bodily functions—According to the *Sixth Yearbook*,³ the content of a program in health teaching for high-school pupils, if it is going to have lasting effect, must not only teach good health habits, but must give enough fundamental information concerning body structure so that reasons for these habits may be understood. This necessitates some instruction relative to the structure of bones, joints, muscles, and the various organs, with particular emphasis upon their function and care.

Measurement of health behavior—Scales have been developed⁴ which express for vari-

ous age groups appropriate standards of healthful behavior in terms of habits or skills, attitudes, and knowledge, on such points as: Nutrition, sleep, education for parenthood, care of the skin, eyes, ears, teeth and mouth, nose and throat, mental and emotional health, control of infection, safety, and first aid.

Since these scales include a more or less comprehensive enumeration of the health habits, attitudes, and knowledge which seem to be involved in solving the most important existing health problems, they are of special help in planning courses of study. They can also be used as a basis for surveying the local situation and discovering wherein teaching in this subject is weak or strong. The results of such a survey indicate where emphasis is needed in a local health education program.⁵

All departments in a secondary school should contribute to health education—All school courses should be so taught as to permit frequent opportunities for correlation with the various parts of the health program. To illustrate, in history classes the influence of health and disease upon the great movements of history should be pointed out. Civics classes offer opportunity for studies and discussions of health organizations, examination into community taxes to find out what proportion goes to such health projects as adequate sewage disposal, to sanitation and sterilization of water supplies, to inspection of food products and sale, and to communicable disease control. The different sciences present perhaps the most fertile opportunity of all, because upon these sciences are based our present procedures for health preservation.

Mental hygiene at the secondary school period—During senior high school and college life, and the period soon following, three great decisions are made: the clarification of

¹ An intensive evaluation of present practices relative to health education is being made by the American Child Health Association, 370 Seventh Avenue, New York City.

² Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association, *Health Education*. National Education Association, Washington, D. C., 1924. 161 pp.
Department of Superintendence, *Sixth Yearbook*, Chapter XXIV, Health and Physical Education in Junior and Senior High Schools. National Education Association, Washington, D. C., 1928.

³ Department of Superintendence, *The Development of the High School Curriculum*, *Sixth Yearbook*, p. 473. National Education Association, Washington, D. C., 1928.

⁴ Wood, Thomas D., and Lerrigo, Marion O., *Health Behavior*. Bloomington, Ill., Public School Publishing Company, 1927.

⁵ Those directing school health programs will be interested in keeping in touch with the *School Health Study* of the American Child Health Association, which is now in progress. It seeks to gain insight into problems of school health by measuring some of the outcomes of school health programs in American cities. Field measurements were made from September, 1927, to June, 1928, and data were obtained from approximately 7500 children of the 5th and 6th grades in 70 schools representing various degrees of economic status. The results of the study will be presented in a series of monographs. One bulletin, entitled *Health Education Tests*, has already been issued by the American Child Health Association, 370 Seventh Avenue, New York City.

one's thinking on religious questions, the choice of a vocation, and the choice of a wife or a husband. All three of these may, and often do, involve serious difficulties which affect the personality either for good or ill. Much of the mental and emotional hygiene of these years is concerned with the healthful guidance of youth with respect to these three important decisions.

Adults who deal with youth at this period should have a thorough understanding of the possible causes and manifestations of maladjustments of personality and should also have a clear standard of what are the characteristics of the healthy personality.

The entrance of the clinical psychologist and of the psychiatrist into the school program is having a beneficial effect upon the mental life and attitudes of secondary school pupils. The explanation to parents of mental reactions to home environment has been particularly advantageous.

Physical education a required high-school subject—Thirty-five states have passed laws requiring the teaching of physical education. In addition, the majority of the state departments of education have definite requirements regarding the training of teachers or supervisors of physical education.¹

In the senior high school, the number of times per week physical education is required of all pupils varies from one to five. In 68 percent of the cities over 100,000 in population, it is required from two to five times a week, and five times a week by 22 percent of these cities. The average number of children per class generally ranges from 40 to 60.

What are the specific objectives of physical education?—One course of study for senior high-school boys lists these seven objectives of physical education, which are more or less typical of those presented in the newer courses of study:

1. To aid the body in the development of motor power and normal growth.
2. Development of ability to work and play with others—sportsmanship.

3. Good posture.
4. Elimination of removable growth handicaps.
5. To provide opportunity for acquiring knowledge, skill, and control in activities suitable for leisure time occupation.
6. Utilization of the play instinct.
7. Coordination with the general curriculum.

The most common methods for attaining these objectives are: games and sports, team and individual recreational activities, formal gymnastics, apparatus and stunts, tumbling and mat work, and hygiene and health education through incidental instruction, examination, classification, and cooperation with school nurses and physicians.

Physical education often misdirected—According to Rogers,²

The most obvious criticisms of secondary school physical education programs and teachers are that they are too much concerned with the development of non-essential motor skills; that they concentrate on the production of highly trained teams which play games having little or no carry-over value; that emphasis is placed on the humiliation of compatriots in neighboring communities; and that there is a lamentable concentration of interest and energy on athletic paragons who least need such attention, while those who most need interest and attention are neglected.

*A test of athletic ability*³—Physical fitness is defined in terms of organic vigor and neuromuscular strength and skill. How can it be measured? A strength index, or measure of general athletic ability, has been developed which considers such items as age, height, weight, grade in school, and various tests of physical capacity, including tests of lung capacity and strength of larger muscles. In developing this index, it was discovered that a strength test made up of a series of components was the most effective. The test is used in securing equality in athletic ability in competing groups. Many hold that in competitive activities educational objectives will be achieved most effectively only when the powers of competing individuals or teams have been equalized.

¹ Ready, Marie M., *Physical Education in City Public Schools*. U. S. Bureau of Education, Physical Education Series, No. 10, 1929.

² Rogers, Frederick Rand, *Tests and Measurement Programs in the Redirection of Physical Education*, p. 1. Bureau of Publications, Teachers College, Columbia University, New York City, 1927

³ *Ibid.*, p. 18.

Improvement of school health programs within the next decade—Specialists in health education prophesy that progress will be made in these lines within the next ten years:

1. The coordination of all activities affecting the health of school children. More school administrator will assume this responsibility and take the initiative in the organization and administration of the school health program.

2. The strategic position of the classroom teacher in the modern school health program will be recognized, and the health aspect of every activity during the school day will be given attention.

3. Teacher-training institutions will give greater recognition to health education. Trained instructors will be required. College credit will be given.

4. The curricula will be thoroughly revised and so organized that definite progress will be made from grade to grade. Scales for measuring this progress will be developed. Closer relationship between the course of study in health and physical education and other subjects will be established.

5. The duties of the school physician, nurses, and other specialists in their relation to the classroom teacher will be better defined.

6. More consideration will be given to protecting the teacher's health.

7. More research will be conducted in the fields of emotional and mental health.

8. Steps will be taken to secure more generally acceptable standards for evaluating school health programs.

9. More light will be thrown on the interrelation of the forces—spiritual, mental, and physical—which influence both personal and community health.

Helpful Books Dealing with High-School Curriculum Problems

Opinion as to Best General Books

What books dealing with general curriculum problems are most helpful to local secondary school course-of-study committees? Twenty-six experts were asked this question.

They each submitted a list of six books. Table 6 is a compilation of their lists. The first seven books were mentioned from fourteen to eight times by the twenty-six people submitting lists of books on general curriculum problems of the high school.

TABLE 6.—BOOKS DEALING WITH GENERAL CURRICULUM PROBLEMS OF THE SECONDARY SCHOOL

Title	Author	Publisher	Year of publication
How to Make a Curriculum	Bobbitt, Franklin	Houghton Mifflin Company	1924
Sixth Yearbook, The Development of the High School Curriculum	Department of Superintendence	National Education Association	1928
Secondary School Curricula	Uhl, Willis L.	The Macmillan Company	1927
Fifth Yearbook, The Junior High School Curriculum	Department of Superintendence	National Education Association	1927
The Making of High School Curricula	Williams, L. A.	Ginn and Company	1928
Curriculum Construction	Charters, Werrett Wallace	The Macmillan Company	1923
Our Evolving High School Curriculum	Davis, Calvin Olin	World Book Company	1927
The Technique of Curriculum Making	Harap, Henry	The Macmillan Company	1928
Curriculum-Adjustment in the Secondary School	Cox, Philip W. L.	J. B. Lippincott Company	1925
The Curriculum	Bobbitt, Franklin	Houghton Mifflin Company	1918
Curriculum Making in Secondary Schools	Clement, John Addison	Henry Holt and Company	1923
Fourth Yearbook, The Nation at Work on the Public School Curriculum	Department of Superintendence	National Education Association	1926
Twenty-Sixth Yearbook, Part II, The Foundations of Curriculum Making	National Society for the Study of Education	Public School Publishing Company	1927
Curriculum Problems	Briggs, Thomas Henry	The Macmillan Company	1926
The Senior High School Curriculum, Supplementary Educational Mono. No. 29	Counts, George Sylvester	The University of Chicago	1926
Secondary Education	Douglass, Aubrey A.	Houghton Mifflin Company	1927
The Practice of Teaching in the Secondary School	Morrison, Henry Clinton	University of Chicago Press	1926
Twenty-Sixth Yearbook, Part I, Curriculum Making Past and Present	National Society for the Study of Education	Public School Publishing Company	1927
Creating a Curriculum for Adolescent Youth, Res. Bul. Vol. VI, No. 1	Research Division	National Education Association	Jan., 1928
Report of the Committee on Standards for Reorganizing Secondary School Curricula for March, 1927	North Central Association	North Central Association Quarterly, Vol. I, pp. 428-544	March, 1927
Report of the Committee on Standards for Reorganizing Secondary School Curricula for March, 1928	North Central Association	North Central Association Quarterly, Vol. II, pp. 389-504	March, 1928
Tests and Measurements in School Instruction	Ruch, G. M., and Stoddard, G. D.	World Book Company	1927
The Community and Its High School	Belting, Paul Everett	D. C. Heath & Company	1923
Why Educational Objectives?	Bode, Boyd H.	Journal of Educational Research, Vol. 10, pp. 175-86	Oct., 1924
The Elementary School Curriculum	Bonser, F. G.	The Macmillan Company	1920
Junior High School Education	Davis, Calvin Olin	World Book Company	1924
The Denver Program of Curriculum Revision	Denver, Colo., Public Schools	Denver Board of Education	1927
Curriculum Practices in the Junior High School and in Grades 5 and 6, Supplementary Educational Mono. No. 25	Glass, James M.	The University of Chicago	1924
Economic Life and the Curriculum	Harap, Henry	The Macmillan Company	1927
Principles of Secondary Education	Inglis, Alexander	Houghton Mifflin Company	1918
Educational Yearbook	International Institute of Teachers Colleges	Teachers College, Columbia University	1927
Psychology of High School Subjects	Judd, Charles Hubbard	Ginn and Company	1915
Psychology of Secondary Education	Judd, Charles Hubbard	Ginn and Company	1927
The American Secondary School	Koos, Leonard V.	Ginn and Company	1927
Course of Study, Mono. No. 30	Los Angeles, Calif., City Schools	Los Angeles Board of Education	1924
Extra-Curricular Activities	McKown, Harry C.	The Macmillan Company	1927
Creative Learning and Teaching	Miller, H. L.	Charles Scribner's Sons	1927
The High School	Monroe, Walter, and Weber, Oscar F.	Doubleday, Doran & Company, Inc.	1928
Third Yearbook, Selected Topics in the Teaching of Mathematics	National Council of Teachers of Mathematics	Teachers College, Columbia University	1928
Twenty-Third Yearbook, Part I, The Education of Gifted Children	National Society for the Study of Education	Public School Publishing Company	1924

TABLE 6.—BOOKS DEALING WITH GENERAL CURRICULUM PROBLEMS OF THE SECONDARY SCHOOL—(Continued)

Title	Author	Publisher	Year of publication
Twenty-Fourth Yearbook, Part II, Adapting the Schools to Individual Differences	National Society for the Study of Education	Public School Publishing Company	1925
Handbook for Course of Study Committee	Directors and Supervisors, Oakland, Calif., Public Schools	Oakland Board of Education	May, 1926
Foundations of Educational Sociology	Peters, C. C.	The Macmillan Company	1924
Organization, Administration, and Course of Study for Junior and Senior High Schools	Roberts, Lakin F., Director	West Virginia State Department of Education	1926
Rating Elementary School Courses of Study	Stratemeyer, Florence B., and Bruner, Herbert B.	Bureau of Publications, Teachers College, Columbia University	1926

Among those contributing to the above list were: Francis L. Bacon, Evanston Township High School, Evanston, Ill.; Bancroft Beatley, Graduate School of Education, Harvard University, Cambridge, Mass.; Philip W. L. Cox, Professor of Secondary Education, New York University, New York City; Calvin Olin Davis, School of Education, University of Michigan, Ann Arbor, Mich.; Aubrey A. Douglass, Head, Department of Education, Pomona College, Claremont, Calif.; Walter F. Downey, Head Master, English High School, Boston, Mass.; J. B. Edmonson, Head, Department of Education, University of Michigan, Ann Arbor, Mich.; William F. Ewing, Assistant Superintendent of Schools, Oakland, Calif.; Herbert H. Foster, Professor of Education, Beloit College, Beloit, Wis.; Will French, Principal, Lincoln High School, Lincoln, Neb.; Henry Harap, Associate Professor of Education, Cleveland School of Education, Cleveland, Ohio; Merton E. Hill, Principal, Chaffey Junior College, Ontario, Calif.; John T. Johnson, Cook County Normal School, Chicago, Ill.; Arthur J. Jones, Professor of Secondary Education, University of Pennsylvania, Philadelphia, Pa.; Leonard V. Koos, Professor of Secondary Education, University of Minnesota, Minneapolis, Minn.; Frank M. Leavitt, Associate Superintendent of Schools, Pittsburgh, Pa.; A. K. Loomis, Director, Curriculum Department, Public Schools, Denver, Colo.; Elizabeth E. Packer, Acting Principal, New Frier Township High School, Winnetka, Ill.; William Martin Proctor, School of Education, Stanford University, Calif.; Joseph Roemer, Professor of Secondary Education, Teachers College, University of Florida, Gainesville, Fla.; Harold O. Rugg, Lincoln School, Teachers College, Columbia University, New York City; Richard E. Rutledge, Director, Bureau of Curriculum Development, Public Schools, Oakland, Calif.; Willis L. Uhl, School of Education, University of Washington, Seattle, Wash.; Douglas Waples, Professor of Educational Method, Graduate Library School, University of Chicago, Chicago, Ill.; William A. Wetzol, Principal, Senior High School, Trenton, N. J.; and L. A. Williams, Professor of Education, University of California, Berkeley, Calif.

Opinion as to Best Books on High-School Subjects

After a local course-of-study committee has clarified its thinking as to the purposes and general curriculum problems of the high school, its next concern is with the selection of such pupil activities and content as will aid in the realization of these purposes.

If the curriculum is to be organized on the subject basis, then one of the first steps is to discover what scientific work has already been done in each subject, what are the recent trends, and what is the consensus of expert opinion as to further desirable development. Much of this material is crystallized in the best texts. In response to a special request, books in twelve subjects or groups of subjects have been listed by a total of seventy-five experts. In each case, they submitted lists in answer to this question, What are the six most helpful books for local course-of-study committees in your field? Tables 7 to 18 are a compilation of their answers.

The fact that these books are arranged according to subjects should not lead the reader to infer that the suggestion is made that secondary school curriculum content

should be organized in "water-tight" subject compartments.

The variation in the length of lists relative to the various subjects is probably explained either by: (1) A shortage of books on a particular subject, or (2) a lack of agreement as to which books are considered most helpful to local course-of-study committees.

The books mentioned most frequently head each subject list.

Since the influences which may have resulted in the choice of particular books are not known, the number of times that any one book is mentioned should not be given too much weight. The fact that some of the books listed are more recent than others, and hence are not so well known, undoubtedly accounts for their not being mentioned more often. It would appear that the total list of books presented in Tables 6 to 18 represents:

1. A recent and reasonably comprehensive list of books dealing with general curriculum problems of the high school and also those of twelve subject fields.

2. A rough indication as to which of these books will be found most helpful to local course-of-study committees and to high-school faculties.

Art Education

The length of the list of books presented in Table 7 is indicative of the fact that art specialists do not agree as to the books most helpful in developing high-school art courses.

None of the books included in Table 7 were suggested by more than three of the eight specialists who assisted in the preparation of the list. The first nine books were mentioned two or three times. All the remaining were mentioned once.

TABLE 7.—BOOKS HELPFUL IN BUILDING HIGH-SCHOOL ART EDUCATION COURSES

Title	Author	Publisher	Year of publication
Composition: A Series of Exercises in Art Structure for the Use of Students and Teachers	Dow Arthur Wesley	Doubleday, Doran & Company, Inc.	1924
Teaching of Industrial Arts in the Elementary School	McMurry, Oscar; Eggers, G. W.; and McMurry, C. A.	The Macmillan Company	1923
Significance of the Fine Arts	American Institute of Architects, Committee on Education	Marshall Jones Company	1926
Art in the School	Boas, Belle	Doubleday, Doran & Company, Inc.	1924
Art Through the Ages	Gardner, Helen	Harcourt, Brace and Company	1926
Art in Everyday Life	Goldstein, Harriet Irene, and Goldstein, Vetta	The Macmillan Company	1925
The Business of Teaching and Supervising the Arts	Kirby, C. Valentine	Abbott Educational Company	1927
Art Education for High Schools	Prang, L.	The Prang Educational Company	1908
Organization and Teaching of Art	Winslow, Leon L.	Warwick & York, Inc.	1925
Design in Theory and Practice	Batchelder, Ernest Allen	The Macmillan Company	1910
Self-Development in Drawing	Beck, Walter	G. P. Putnam's Sons	1928
Figure Construction	Bement, Alon	Gregg Publishing Company	1927
Method for Creative Design	Best-Maugard, Adolpho	Alfred A. Knopf	1926
Letters and Lettering	Brown, F. C.	Bates & Guild Co.	1921
Applied Drawing	Brown, H. H.	Mentzer, Bush & Company	1916
Courses of Study in Junior and Senior High Schools, Bulletin No. 5, 1925, Art Syllabus	Committee of Three, Jean Kimbber, Chairman	State of Missouri Department of Education	1925
Art for the High School, Curriculum Bulletin No. 35	Committee on Art, St. Louis Public Schools	Board of Education, St. Louis, Mo.	1926
Art for Amateurs and Students	Cox, George J.	Doubleday, Doran & Company, Inc.	1926
Shall We Have Intelligence Tests in Art?	Cox, George J.	Teachers College Record, Vol. 28, pp. 690-5	March, 1927
Curriculum Adjustment in the Secondary School	Cox, Philip W. L.	J. B. Lippincott Company	1925
Art . . . Senior High School, Course of Study Monograph No. 14	Denver Curriculum Revision Committee	Denver, Colo., Public Schools	1925
Fifth Yearbook, The Junior High School Curriculum	Department of Superintendence	National Education Association	1927
Sixth Yearbook, The Development of the High School Curriculum	Department of Superintendence	National Education Association	1928
Experience and Nature	Dewey, John	Open Court Publishing Company	1926
Drawing with Pen and Ink, and a Word Concerning the Brush	Guptill, Arthur L.	Pencil Points Press	1928
The American Secondary School	Koos, Leonard V.	Ginn and Company	1927
Applied Art, Drawing, Painting, Design, and Handicraft	Lemos, Pedro Joseph	Pacific Press Publishing Association	1920
Tests in Fundamental Abilities of Visual Art	Lewerenz, A. S.	High School Teacher, Vol. 4, pp. 190-2	May, 1928
Art Course of Study for Senior High Schools	Lewerenz, Carol M.	Long Beach City Schools	1927
Nature, Practice, and History of Art	Magonigle, Harold Van Buren	Charles Scribner's Sons	1924
Creative Youth	Mearns, Hughes	Doubleday, Doran & Company, Inc.	1925
The Practice of Teaching in the Secondary School	Morrison, Henry Clinton	University of Chicago Press	1926
Twenty-Sixth Yearbook, Foundations and Technique of Curriculum Making	National Society for the Study of Education	Public School Publishing Company	1927
Elementary Freehand Perspective	Norton, D. M.	Bridgman Publishers	1924
Freehand Perspective and Sketching	Norton, D. M.	Bridgman Publishers	1910
Apollo	Reinach, Solomon	Charles Scribner's Sons	1924
The Enjoyment and Use of Color	Sargent, Walter	Charles Scribner's Sons	1923
How to Design Monograms	Sprague, Curtiss, and Sprague, Elizabeth	Bridgman Publishers	1927
Problems in Art Education	Tannahill, Sallie B.	Teachers College Record, Vol. 28, pp. 696-706	March, 1927
Industrial Arts Design	Varnum, W. H.	Manual Arts Press	1925
Curriculum Building in Art	Whitford, W. G.	Elementary School Journal, Vol. 21, pp. 281-9, 352-60	Dec., 1920-Jan., 1921
Empirical Study of Pupil-Ability in Public School Art Courses	Whitford, W. G.	Elementary School Journal, Vol. 20, pp. 33-46, 95-100	Sept.-Oct., 1919

Among those contributing to the above list were: Henry Turner Bailey, Director, Cleveland School of Art and John Huntington Polytechnic Institute, Cleveland, Ohio; Belle Boas, Teachers College, Columbia University, New York, N. Y.; Royal B. Farnum, Principal, Massachusetts School of Art, Boston, Mass.; C. Valentine Kirby, Director of Art, Pennsylvania State Department of Education, Harrisburg, Pa.; Emma McCall, Supervisor of the Teaching of Art, School of Education, University of California, Oakland, Calif.; Shirley Poore, Assistant Director, Art Department, University of California at Los Angeles, Los Angeles, Calif.; Sallie B. Tannahill, Associate Professor of Fine Arts, Teachers College, Columbia University, New York, N. Y.; and Leon L. Winslow, Director, Division of Art Education, Baltimore, Md.

Commercial Education

Table 8 is a compilation of the lists of six best books submitted by seven commercial education specialists. The first seven books are mentioned from six to three times. The

last nineteen books in the list were mentioned once. Some of these have been issued so recently that there has been no opportunity for them to be read widely, which fact probably accounts for their position in the list.

TABLE 8.—BOOKS HELPFUL IN BUILDING HIGH-SCHOOL COMMERCIAL EDUCATION COURSES

Title	Author	Publisher	Year of publication
Commercial Teaching Problems	Lomax, Paul S.	Prentice-Hall, Inc.	1928
First Yearbook, Foundations of Commercial Education	Eastern Commercial Teachers Association	Eastern Commercial Teachers Association	1928
Education for Business	Lyon, Leverett S.	University of Chicago Press	1922
A New Conception of Office Practice	Nichols, Frederick G., and others	Harvard University Press	1927
Fifth Yearbook, The Junior High School Curriculum	Department of Superintendence	National Education Association	1927
Sixth Yearbook, The Development of the High School Curriculum	Department of Superintendence	National Education Association	1928
Commercial Education in Secondary Schools	Marvin, Cloyd Heck	Henry Holt and Company	1922
Analysis of Secretarial Duties and Traits	Charters, Werrett Wallace, and Whitley, Isadore B.	Williams and Wilkins Company	1924
Teaching Business Subjects in Secondary Schools	Jones, Connor Thorne, Editor	Ronald Press Company	1924
Methods in Commercial Teaching	Miller, Jay W., and others	South-Western Publishing Company	1925
Courses of Study in Commercial Subjects, Curriculum Bulletins Nos. 36, 39, 40, and 47	St. Louis, Mo., Public Schools	St. Louis Board of Education	1926
Social Studies in Secondary Schools: The Commission on Correlation of Secondary Collegiate Education, With Particular Reference to Business Education	American Collegiate Schools of Business	University of Chicago Press	1922
Paths to Success, Chapter on Commercial Education	Black, Harold Garnet	D. C. Heath & Co.	1924
Report of the Committee of Fifteen of the California High School Teachers Association on Secondary Education in California, 1923	California High School Teachers Association	California High School Teachers Association	1924
The Senior High School Curriculum, Supplementary Educational Monographs No. 29, pp. 92-98	Counts, George Sylvester	The University of Chicago	1926
Our Evolving High School Curriculum, Chapter IX	Davis, Calvin Olin	World Book Company	1927
Commerce, High School Course of Study Mono. No. 8	Denver, Colo., Public Schools	Denver Board of Education	1925
Second Yearbook, Curriculum Making in Commercial Education	Eastern Commercial Teachers Association	Eastern Commercial Teachers Association	1929
The Meaning and Practice of Commercial Education	Herrick, Cheesman A.	The Macmillan Company	1904
Education of Business Men	James, Edmund J.	American Bankers Association	1891
Principles and Methods in Commercial Education	Kahn, Joseph, and Klein, J. J.	The Macmillan Company	1914
Commercial Education in Secondary Schools	Kitson, Harry D.	Ginn and Company	1929
Objectives and Problems of Vocational Education	Lee, Edwin A.	McGraw-Hill Book Company, Inc.	1928
What Kind of Business Education Do We Want?	Lomax, Paul S.	South-Western Publishing Company	1928
Principles of Commercial Education	Lomax, Paul S., and Carkin, Seth B.	The Century Co.	1929
Commercial Education in 1924-26, Bureau of Education Bulletin, 1928, No. 4	Malott, J. O.	Government Printing Office	1928
In the Service of Youth	Opdycke, John Baker	Sir Isaac Pitman & Sons	1928
Vocational Education in a Democracy	Prosser, Charles, and Allen, C. R.	The Century Co.	1925
Supervision of High School Subjects, Chapter on Commerce, by E. G. Blackstone	Uhl, Willis L.	D. Appleton and Company	1928
High School Commercial Education	Walters, R. G.	Sir Isaac Pitman & Sons	1923

Among those contributing to the above list were: E. W. Barnhart, Chief, Commercial Education Service, Federal Board for Vocational Education, Washington, D. C.; E. G. Blackstone, Head, Training Department of Commercial Teachers, University of Iowa, Iowa City, Iowa; James E. Downey, Headmaster, High School of Commerce, Boston, Mass.; John G. Kirk, Director, Commercial Education, Board of Public Education, Philadelphia, Pa.; Paul S. Lomax, Professor of Commercial Education, New York University, New York City; John O. Malott, Specialist in Commercial Education, U. S. Bureau of Education, Washington, D. C.; Frederick G. Nichols, Professor of Education, Graduate School of Education, Harvard University, Cambridge, Mass.

English

From Table 9, it would appear that the nine specialists who contributed to the list of books in English are not in agreement as to the "most helpful" books for local course-of-

study committees. The first fifteen books were mentioned from five to two times by the nine specialists, and the remainder were mentioned once. From the long list presented in Table 9, local committees may select the ones which will best suit their needs.

TABLE 9.—BOOKS HELPFUL IN BUILDING HIGH-SCHOOL ENGLISH COURSES

Title	Author	Publisher	Year of publication
Reorganization of English in Secondary Schools, U. S. Bureau of Education Bul., 1917, No. 2	Hosic, James F.	Government Printing Office	1917
Fifth Yearbook, The Junior High School Curriculum, pp. 87-146	Department of Superintendence	National Education Association	1927
How to Make a Curriculum, Chap. VI and XVI	Bobbitt, Franklin	Houghton Mifflin Company	1924
Representative Courses of Study in English	Camenisch, Sophia C.	The English Journal, Vol. 16, pp. 279-94	April, 1927
Essential Principles of Teaching Reading and Literature in the Intermediate Grades and High School	Leonard, Sterling A.	J. B. Lippincott Company	1922
The Curriculum	Bobbitt, Franklin	Houghton Mifflin Company	1918
Curriculum Construction	Charters, Werrett Wallace	The Macmillan Company	1923
An Evaluation of Extensive and Intensive Teaching of Literature, Contributions to Education, No. 275	Coryell, Nancy Gillmore	Bureau of Publications, Teachers College, Columbia University	1927
Sixth Yearbook, The Development of the High School Curriculum, pp. 309-28	Department of Superintendence	National Education Association	1928
The Teaching of the English Language	Fries, C. C.	Thomas Nelson & Sons	1927
English Expression: A Study in Curriculum Building	Johnson, Roy Ivan	Public School Publishing Company	1926
Summary of Investigations, Relating to Grammar, Language, and Composition, Supplementary Educational Monographs No. 36	Lyman, Rollo L.	The University of Chicago	1929
How Much English Grammar?	Stormzand, Martin J., and O'Shea, M. V.	Warwick & York, Inc.	1924
Teaching of English in Secondary Schools	Thomas, C. S.	Houghton Mifflin Company	1927
Teaching English in the Junior High School	Webster, E. H., and Smith, D. V.	World Book Company	1927
Teaching Literature in the Grammar Grades and High School	Bolenius, Emma M.	Houghton Mifflin Company	1915
Determination of Content of a Course in Literature of a Suitable Difficulty for Junior and Senior High School Students, Genetic Psychology Monograph, Vol. 4, Nos. 2 and 3, August-September, 1928	Burch, Mary C.	Clark University Press	1928
Teaching of English in the Elementary and Secondary Schools	Chubb, Percival	The Macmillan Company	1902
Report of the Committee on the Place and Function of English in American Life	Clapp, John M.	The English Journal, Vol. 15, pp. 110-31	Feb., 1926
Course of Study Monograph No. 10, English	Denver Curriculum Revision Committee	Denver, Colo., Public Schools	1925
Third Yearbook, Research in Constructing the Elementary School Curriculum	Department of Superintendence	National Education Association	1925
Our Evolving High School Curriculum	Davis, Calvin Olin	World Book Company	1927
Summary of Investigations Relating to Reading, Supplementary Educational Monographs No. 28	Gray, William S.	The University of Chicago	1925
Report of the National Committee on Reading, Part I, Twenty-Fourth Yearbook of the National Society for the Study of Education	Gray, William S.	Public School Publishing Company	1925
Teaching of English in England	Great Britain Board of Education	His Majesty's Stationery Office	1921
Readings in Contemporary Literature	Hanes, Ernest, and McCoy, M. J.	The Macmillan Company	1928
Readings in Literature	Hanes, Ernest, and McCoy, M. J.	The Macmillan Company	1925
Community Civics	Hill, H. C.	Ginn and Company	1928
Empirical Studies in School Reading, Contributions to Education No. 114	Hosic, James F.	Bureau of Publications, Teachers College, Columbia University	1921
Reorganization of the High School Course in Literature	Hosic, James F.	Teachers College Record, Vol. 24, pp. 338-43	Sept., 1923
English Composition, Its Aims, Methods, and Measurements, Part I, Twenty-Second Yearbook of the National Society for the Study of Education	Hudelson, Earl	Public School Publishing Company	1923
Comprehension Difficulties of Ninth Grade Students in the Study of Literature, Contributions to Education No. 189	Irion, Theophil W. H.	Bureau of Publications, Teachers College, Columbia University	1925
The Knowledge of English	Krapp, George Phillip	Henry Holt and Company	1927

**TABLE 9.—BOOKS HELPFUL IN BUILDING HIGH-SCHOOL ENGLISH COURSES—
(Continued)**

Title	Author	Publisher	Year of publication
Modern English, Its Growth and Present Use	Krapp, George Phillip	Charles Scribner's Sons	1909
English Composition as a Social Problem	Leonard, Sterling A.	Houghton Mifflin Company	1917
General Language	Leonard, Sterling A., and Cox, R. F.	Rand McNally & Company	1925
Current Definitions of Levels in English Usage	Leonard, Sterling A., and Moffett, H. Y.	English Journal, Vol. 16, pp. 345-59	May, 1927
Los Angeles City High Schools Course of Study Monographs, English	Los Angeles English Committee	Los Angeles, Calif., City Schools	1923
Report of the Committee on Curriculum Revision for the North Central Association of Secondary Schools and Colleges, Part III of the Proceedings	Lyman, Rollo L.	North Central Association of Secondary Schools and Colleges	1925
Twenty-Sixth Yearbook, The Foundations and Technique of Curriculum Making	National Society for Study of Education	Public School Publishing Company	1927
Social Objectives of School English	Pendleton, C. S.	George Peabody College for Teachers	1924
Organization, Administration, and Course of Study for Junior and Senior High Schools	Roberts, Lakin, Director	State Board of Education, West Virginia	1927
Teaching English in High School	Sharp, R. A.	Houghton Mifflin Company	1924
Unit Studies in Grammar	Shepherd, Edith E.	The Bobbs-Merrill Company	1928
Rating Elementary School Courses of Study	Stratemeyer, Florence B., and Bruner, Herbert B.	Bureau of Publications, Teachers College, Columbia University	1926
English for the High School, Curriculum Bulletin No. 22	St. Louis Committee on High School English	St. Louis Board of Education	1926
Standards for Use in the Reorganization of Secondary School Curricula, Report of Sub-Committee on English	Sub-Committee on English, North Central Association	North Central Association Quarterly, Vol. 1, pp. 445-66	March, 1927
Secondary School Curricula	Uhl, Willis L.	The Macmillan Company	1927
Supervision of High School Subjects	Uhl, Willis L.	D. Appleton and Company	1928

Among those contributing to the above list were: Sophia C. Camenisch, *English Journal*, University of Chicago Press, Chicago, Ill.; Philipine Creclius, Ben Blewett Junior High School, St. Louis, Mo.; Roy Ivan Johnson, Professor of English, Harris Teachers College, St. Louis, Mo.; S. A. Leonard, School of Education, University of Wisconsin, Madison, Wis.; Dudley H. Miles, Evander Childs High School, New York, N. Y.; S. L. Pressey, Ohio State University, Columbus, Ohio; Edith E. Shepherd, Head of English Department, School of Education, University of Chicago, Chicago, Ill.; Dora V. Smith, Assistant Professor of Education, College of Education, University of Minnesota, Minneapolis, Minn.; and Matthew H. Willing, School of Education, University of Wisconsin, Madison, Wis.

**TABLE 10.—BOOKS HELPFUL IN BUILDING HIGH-SCHOOL HEALTH AND
PHYSICAL EDUCATION COURSES**

Title	Author	Publisher	Year of publication
Principles of Physical Education	Williams, Jesse F.	W. B. Saunders Company	1927
New Physical Education	Wood, Thomas D., and Cassidy, R. F.	The Macmillan Company	1927
Sixth Yearbook, The Development of the High School Curriculum	Department of Superintendence	National Education Association	1928
High Schools and Sex Education	Gruenberg, Benjamin C.	Government Printing Office	1922
School Program in Physical Education	Hetherington, Clark Wilson	World Book Company	1922
Physical Welfare of the School Child	Keene, Charles H.	Houghton Mifflin Company	1929
Physical Education for Public Schools; Teaching Manual	Maroney, F. W.	Lyons & Carnahan	1928
Health of Youth	Meredith, Florence	P. Blakiston's Son & Co.	1928
Health and Physical Education for Elementary Schools	Myers, A. F., and Bird, O. C.	Doubleday, Doran & Company, Inc.	1928
Organization and Administration of Playgrounds and Recreation	Nash, Jay B.	A. S. Barnes & Co.	1927
Course of Study in School Health, Physical Education, Grades 9-12	Pennsylvania State Department of Education	Pennsylvania State Department of Education	1923
Games, Contests, and Relays	Staley, S. C.	A. S. Barnes & Co.	1924
Physical Education Activities for High School Girls	University of Michigan, Dept. of Phy. Ed. for Women	Lea & Febiger	1928
Physical Education	Welpton, W. P.	Warwick & York, Inc.	1913
Organization and Administration of Physical Education	Williams, Jesse F.	The Macmillan Company	1922
Health Supervision and Medical Inspection	Wood, Thomas D., and Rowell, H. G.	W. B. Saunders Company	1927

Among those contributing to the above list were: Charles H. Keene, Professor of Hygiene, University of Buffalo, Buffalo, N. Y.; F. W. Maroney, Director, Department of Health Education, Public Schools, Atlantic City, N. J.; and Jay B. Nash, Professor of Physical Education, School of Education, New York University, New York City.

Health and Physical Education

Three specialists in health and physical education contributed the titles of helpful books listed in Table 10. The first two books were mentioned twice, the remaining fourteen once each. This would seem to indicate lack of agreement as to which books are most helpful to local school systems in building courses of study in health and physical education.

Home Economics

Nine specialists in home economics contributed the fifty titles listed in Table 11. Some wrote saying that it was quite impossible to select the six best books, so they submitted longer lists. The first ten books were mentioned from four to three times. The length of the list shows that there is great lack of agreement as to which books are considered most helpful to local home economics course-of-study committees.

TABLE 11.—BOOKS HELPFUL IN BUILDING HIGH-SCHOOL HOME ECONOMICS COURSES

Title	Author	Publisher	Year of Publication
Teaching of Home Economics	Brown, Clara M., and Haley, Alice H.	Houghton Mifflin Company	1928
The Placement of Home Economics Content in Junior and Senior High Schools	Dyer, Annie Robertson	Bureau of Publications, Teachers College, Columbia University	1928
Twenty-Sixth Yearbook, Part II, Foundations of Curriculum Making	National Society for the Study of Education	Public School Publishing Company	1927
Art in Home and Clothing	Trilling, Mabel Barbara, and Williams, Florence Marion	J. B. Lippincott Company	1928
Sixth Yearbook, The Development of the High School Curriculum	Department of Superintendence	National Education Association	1928
The Administration of Home Economics in City Schools	Dyer, Annie Robertson	Bureau of Publications, Teachers College, Columbia University	1928
Textile Fabrics	Dyer, Elizabeth	Houghton Mifflin Company	1923
Everyday Foods	Harris, Jessie W., and Lacey, Elizabeth V.	Houghton Mifflin Company	1927
Junior Home Problems	Kinyon, Kate W., and Hopkins, L. Thomas	Benj. H. Sanborn & Co.	1928
Syllabus of Home Economics for the High Schools of Illinois, University of Illinois Bulletin No. 48	University of Illinois	University of Illinois	1927
Curriculum Construction	Charters, Werrett Wallace	The Macmillan Company	1923
A Survey of Public School Courses in Child Care for Girls	Crabbs, Lelah Mae, and Miller, Mabel Lawrence	Merrill-Palmer School	1927
Fifth Yearbook, The Junior High School Curriculum	Department of Superintendence	National Education Association	1927
The Education of the Consumer	Harap, Henry	The Macmillan Company	1924
The Technique of Curriculum Making	Harap, Henry	The Macmillan Company	1928
Home Economics Research Monograph No. 1	Kinyon, Kate W., and Hopkins, L. Thomas	Public Schools, Denver, Colo.	1925
The House and Its Care	Matthews, Mary Lockwood	Little, Brown and Company	1927
Twenty-Sixth Yearbook, Part I, Curriculum Making: Past and Present	National Society for the Study of Education	Public School Publishing Company	1927
Curriculum-Making in Los Angeles, Supplementary Educational Monographs, No. 20	Bobbitt, Franklin	The University of Chicago	1922
Determining Principles of Curriculum Construction	Bode, Boyd Henry	Educational Administration and Supervision, Vol. 12, pp. 217-28	April, 1926
A Course of Study for the Public Schools of Colorado, Vol. II, Outline for Junior High School Courses	Bradford, Mary C. C., and others	Department of Public Instruction, Denver, Colo.	1926
A Partial Bibliography on Curricula	Briggs, Thomas Henry	Teachers College Record, Vol. 27, pp. 205-23	Nov., 1927
Curriculum Problems, The Modern Teachers' Series	Briggs, Thomas Henry	The Macmillan Company	1926
Clothing Construction	Brown, Clara M., and others	Ginn and Company	1927
Training the Toddler	Cleveland, Elizabeth	J. B. Lippincott Company	1925
Teaching Home Economics	Cooley, Anna Maria, and others	The Macmillan Company	1919
The Senior High School Curriculum, Supplementary Educational Monographs, No. 29	Counts, George Sylvester	The University of Chicago	1926
Our Evolving High School Curriculum	Davis, Calvin Olin	World Book Company	1927
Manual of Home-Making Education for High Schools	Division of Vocational Training	Alabama State Department of Education	1927
Art in Everyday Life	Goldstein, Harriet Irene, and Goldstein, Vetta	The Macmillan Company	1925
Home Economics, Course of Study Monograph No. 12, Grades 7, 8, 9	Denver, Colo., Public Schools	Denver Board of Education	1925
The Philosophy of American Education	Kilpatrick, William Heard	Teachers College Record, Vol. 30, pp. 13-22	Oct., 1928
How Can Household Arts Teaching Be Made More Effective?	Lincoln School, Teachers College	Lincoln School, Teachers College, Columbia University	1923
The Curriculum	McAndrew, William	Journal of the New York State Teachers Association, Vol. 10, pp. 125-30	May, 1923
Food Buying and Our Markets	Monroe, Day, and Stratton, L. M.	M. Barrows & Company	1925

TABLE 11.—BOOKS HELPFUL IN BUILDING HIGH-SCHOOL HOME ECONOMICS COURSES—(Continued)

Title	Author	Publisher	Year of publication
Making a Course of Study, University of Illinois Circular No. 35	Monroe, Walter S.	Bureau of Educational Research, College of Education, University of Illinois	1925
The High School	Monroe, Walter S., and Weber, Oscar F.	Doubleday, Doran & Company, Inc.	1928
The Practice of Teaching in the Secondary Schools	Morrison, Henry Clinton	University of Chicago Press	1926
Child Development and Parental Education in Home Economics	Richardson, Anna Eurette, and Miller, Mabel Lawrence	American Home Economics Association	1928
Preface to the Reconstruction of the American School Curriculum	Rugg, Harold Ordway	Teachers College Record, Vol. 27, pp. 600-16	March, 1926
How to Know Textiles	Small, Cassie Paine	Ginn and Company	1925
Curriculum Revision, How a Particular City May Attack the Problem	Threlkeld, A. L.	Elementary School Journal, Vol. 25, pp. 573-82	April, 1925
Home Economics in American Schools, Supplementary Educational Monographs, No. 14	Trilling, Mabel Barbara, and others	The University of Chicago	1920
A Girl's Problems in Home Economics	Trilling, Mabel Barbara, and Williams, Florence Marion	J. B. Lippincott Company	1926
Secondary School Curricula	Uhl, Willis L.	The Macmillan Company	1927
Achievements in Home Economics Education, Bulletin No. 35	U. S. Bureau of Education	Government Printing Office	1927
Home Economics in the Junior High School, Home Economics Letter No. 3	U. S. Bureau of Education	Government Printing Office	Feb., 1928
The Kind of Home Economics Needed by High School Girls, Home Economics Letter No. 5	U. S. Bureau of Education	Government Printing Office	Sept., 1928
Typical Child Care and Parenthood Education in Home Economics Departments, Bulletin No. 17	U. S. Bureau of Education	Government Printing Office	1927
Food Planning and Preparation	Wellman, Mabel Thacher	J. B. Lippincott Company	1923

Among those contributing to the above list were: Helen W. Atwater, Editor, *Journal of Home Economics*, American Home Economics Association, Washington, D. C.; Beulah I. Coon, Assistant Professor, Home Economics Education, School of Education, University of Chicago, Chicago, Ill.; Florence Fallgatter, Federal Agent, Home Economics Education Service, Federal Board for Vocational Education, Washington, D. C.; Jessie W. Harris, State Supervisor of Home Economics Education, Head, School of Home Economics, University of Tennessee, Knoxville, Tenn.; Adah H. Hess, State Supervisor of Home Economics Education, State Board for Vocational Education, Springfield, Ill.; Kate W. Kinyon, Director of Home Economics, Denver Public Schools, Denver, Colo.; Mabel B. Trilling, University of Chicago, Chicago, Ill.; Emeline S. Whitcomb, Specialist in Home Economics, U. S. Bureau of Education, Washington, D. C.; and Florence E. Winchell, Head of Department of Home Economics, State College for Teachers, Albany, N. Y.

Industrial Arts

The first seven books in Table 12 were mentioned from four to two times by five specialists, who were each requested to name six books. Since this list of books is shorter

than those submitted in a number of other secondary school subject fields, one wonders whether it means greater agreement as to which books are helpful, or whether there is a shortage of books dealing with industrial arts curriculum problems.

TABLE 12.—BOOKS HELPFUL IN BUILDING HIGH-SCHOOL INDUSTRIAL ARTS COURSES

Title	Author	Publisher	Year of publication
Exploring the Manual Arts	Friese, John F.	The Century Co.	1926
Manual Arts in the Junior High School, Bulletin 11, U. S. Bureau of Education	Roberts, Wm. E.	Government Printing Office	1924
Reconstruction of Industrial Arts Courses, Chapters I and II	Snedden, David, and others	Bureau of Publications, Teachers College, Columbia University	1927
Industrial Arts and Prevocational Education in Intermediate and Junior High Schools	Edgerton, A. H.	Bruce Publishing Company	1922
Teaching Manual and Industrial Arts	Griffith, Ira S.	The Manual Arts Press	1924
Woodwork for Secondary Schools	Griffith, Ira S.	The Manual Arts Press	1916
Content and Method of the Industrial Arts	Vaughn, S. J., and Mays, A. B.	The Century Co.	1924
Household Mechanics	Bedell, Earl L.	The Manual Arts Press	1912
History of Manual and Industrial Education up to 1870	Bennett, C. A.	The Manual Arts Press	1926
Manual Arts	Bennett, C. A.	The Manual Arts Press	1917
Mechanical Drawing Problems	Berg, E., and Kronquist, E. F.	The Manual Arts Press	1922
Essentials of Metalworking	Berg, E., and Wing, B. E.	The Manual Arts Press	1927

TABLE 12.—BOOKS HELPFUL IN BUILDING HIGH-SCHOOL INDUSTRIAL ARTS COURSES—(Continued)

Title	Author	Publisher	Year of publication
Curriculum-Making in Los Angeles, Supplementary Educational Monographs, No. 20, Chapters XI and XII	Bobbitt, Franklin	The University of Chicago	June, 1922
Elementary School Curriculum	Bonser, F. G.	The Macmillan Company	1920
Problems in Architectural Drawing	Elwood, Franklin G.	The Manual Arts Press	1924
Manual Arts in the Junior High School	Friese, John F., and others	Board of Education, St. Cloud, Minn.	1925
Problems and Projects in Industrial Arts	La Voy, Kenneth R.	The Manual Arts Press	1924
Teaching Industrial Arts	McMurry, Oscar L.; Eggers, G. W.; and McMurry, C. A.	The Macmillan Company	1923
The Practice of Printing	Polk, Ralph W.	The Manual Arts Press	1926
Uses of the Manual Arts, Industrial Education Circular No. 27	Proffitt, Maris M.	Government Printing Office	April, 1927
Industrial Education, Bureau of Education Bulletin, No. 37	Proffitt, Maris M.	Government Printing Office	1925
Industrial Education in 1924-26, Bureau of Education Bulletin, No. 29	Proffitt, Maris M.	Government Printing Office	1927
Manual Arts, Educational and Vocational	Roberts, S. C.	Richard G. Badger	1924
Individual Instruction Sheets	Selvidge, R. W.	The Manual Arts Press	1926
Industrial Education, Administration and Supervision	Smith, Homer J.	The Century Co.	1927
Essentials of Electrical Work	Willoughby, G. A.	The Manual Arts Press	1927
Elementary Industrial Arts	Winslow, Leon L.	The Macmillan Company	1922

Among those contributing to the above list were: Charles A. Bennett, Editor, *Industrial Education Magazine*, 237 N. Monroe Street, Peoria, Ill.; A. H. Edgerton, Director of Vocational Guidance, University of Wisconsin, Madison, Wis.; John F. Friese, Assistant Professor of Industrial Education, University of Wisconsin, Madison, Wis.; Walter B. Jones, Research Professor of Education, University of Pittsburgh, Pittsburgh, Pa.; and Maris M. Proffitt, Specialist in Industrial Education, U. S. Bureau of Education, Washington, D. C.

Latin

Four specialists in Latin contributed the titles of helpful books listed in Table 13. The first nine books were mentioned two or more times, the rest were each mentioned once, which seems to indicate considerable disagreement as to which books, in the judg-

ment of these specialists, are most helpful to local committees charged with the revision of Latin courses. However, as was previously stated, since the influences which may have resulted in the choice of particular books are not known, the number of times that any one book is mentioned should not be given too much weight.

TABLE 13.—BOOKS HELPFUL IN BUILDING HIGH-SCHOOL LATIN COURSES

Title	Author	Publisher	Year of publication
Report of the Classical Investigation The Teaching of Latin	American Classical League Gray, Mason D.	Princeton University Press D. Appleton and Company	1924 Not yet published 1901
The Teaching of Latin and Greek in the Secondary Schools	Bennett, Charles E., and Bristol, George P.	Longmans, Green & Co.	
How to Make a Curriculum, Chapter 18	Bobbitt, Franklin	Houghton Mifflin Company	1924
Curriculum Making in Secondary Schools, Chapter 17	Clement, John A.	Henry Holt and Company	1923
Tentative Syllabus in Ancient Languages (1928 Revision)	Evans, Austin H., Chairman	Univ. of the State of N. Y., State Dept. of Education	1928
Principles of Secondary Education, Chap. XIII	Inglis, Alexander	Houghton Mifflin Company	1918
Psychology of High School Subjects	Judd, Charles Hubbard	Ginn and Company	1915
Latin for Grades IX-XII, Committee Reports, Cur. Bul. No. 43	St. Louis Committee on High School Latin	St. Louis, Mo., Board of Education	1926
Junior High School Education, Chap. X	Davis, Calvin Olin	World Book Company	1924
Latin, Course of Study Monograph, No. 26	Denver, Colo., Public Schools	Denver Board of Education	1928
Sixth Yearbook, The Development of the High School Curriculum	Department of Superintendence	National Education Association	1928
How We Think	Dewey, John	D. C. Heath & Co.	1910
Modern Methods in High School Teaching	Douglass, Harl R.	Houghton Mifflin Company	1926
Latin Course of Study for Senior and Junior High Schools	Edwards, Philip H., Chairman	Baltimore, Md., Dept. of Education	1924
Teaching High School Latin	Game, J. B.	University of Chicago Press	1925
Latin for Today	Gray, Mason D., and Jenkins, Thornton	Ginn and Company	1927

**TABLE 13.—BOOKS HELPFUL IN BUILDING HIGH-SCHOOL LATIN COURSES—
(Continued)**

Title	Author	Publisher	Year of publication
Content and Method in High School Latin, Contributions to Education, No. 19, George Peabody College for Teachers	Grise, F. C.	George Peabody College for Teachers	1924
The Art of Reading Latin	Hale, W. G.	Mentzer, Bush & Company	1887
The Teaching of Latin in Secondary Schools	Hecker, Eugene Arthur	The Shoenhof Book Co.	1910
The Classics in England, France, and Germany, Part III, American Classical League, "Classical Investigation"	Kandel, I. L.	Princeton University Press	1925
Latin—First Year	Magoffin, Ralph Van Deman, and Henry, Margaret V.	Silver, Burdett & Company	1928
Directing Learning in the High School	Monroe, Walter S.	Doubleday, Doran & Company, Inc.	1927
Practice of Teaching in the Secondary Schools	Morrison, Henry C.	University of Chicago Press	1926
First Latin Lessons	Parsons, Charles A., and Little, Charles E.	D. C. Heath & Company	1926
Second Latin Lessons	Parsons, Charles A., and Little, Charles E.	D. C. Heath & Company	1927
Psychology of the Junior High School Pupil	Pechstein, L. A., and McGregor, Annie L.	Houghton Mifflin Company	1924
A Course of Study in Latin for Junior High School Grades—Whole Number 185, No. 8	Perkins, A. S., and others	Massachusetts State Department of Education	1927
Methods with Adolescents	Pringle, Ralph W.	D. C. Heath & Company	1927
Tests and Measurements in High School Instruction	Ruch, G. M., and Stoddard, G. D.	World Book Company	1927
Foreign Languages in Intermediate and High Schools	Stone, Raymond, Chairman	Detroit, Mich., Board of Education	1926
Supervision of High School Subjects, Chapter on Latin	Uhl, Willis L., Editor	D. Appleton and Company	1928
Course of Study Mono. No. 5, Latin, Grades 7, 8, and 9, Junior High School	White, Willmette, Chairman	Denver, Colo., Public Schools	1924

Among those contributing to the above list were: Walter Eugene Foster, Theodore Roosevelt High School, New York City; Wren Jones Grinstead, School of Education, University of Pennsylvania, Philadelphia, Pa.; Miss Schwendler, Acting Head, Department of Latin and Greek, Board of Education, Rochester, N. Y.; and Harold G. Thompson, Supervisor of Ancient Languages, State Department of Education, Albany, N. Y.

Mathematics

The relatively small number of books listed in Table 14 by five specialists would seem to indicate more or less agreement as to which

books, in their judgment, are most helpful in the building of local mathematics courses for secondary schools. The first seven books were mentioned two or more times.

TABLE 14.—BOOKS HELPFUL IN BUILDING HIGH-SCHOOL MATHEMATICS COURSES

Title	Author	Publisher	Year of publication
Report of National Committee on Mathematical Requirements	National Committee on Mathematical Requirements	Houghton Mifflin Company	1927
First Yearbook	National Council of Teachers of Mathematics	Bureau of Publications, Teachers College, Columbia University	1926
Second Yearbook	National Council of Teachers of Mathematics	Bureau of Publications, Teachers College, Columbia University	1927
Third Yearbook	National Council of Teachers of Mathematics	Bureau of Publications, Teachers College, Columbia University	1928
Tentative List of Objectives in Mathematics	Schorling, Raleigh	George Wahr	1925
The Teaching of Junior High School Mathematics	Smith, D. E., and Reeve, W. D.	Ginn and Company	1927
A Tentative Syllabus in Junior High School Mathematics	Wiley, George M.	Univ. of the State of N. Y., State Dept. of Education	1928
Geometry for Junior High Schools	Betz, William	Rochester, N. Y., Board of Education	1918
Essays on Mathematical Education	Carson, G. E. St. L.	Ginn and Company	1913
Mathematics in Junior High Schools	Clark, J. R.	Teachers College Record, Vol. XXVIII, No. 4, pp. 360-373	Dec., 1926
The Mathematics Teacher	Clark, John R., Editor	National Council of Teachers of Mathematics	Eight times a year
Psychology of High School Subjects	Judd, Charles Hubbard	Ginn and Company	1915
Thinking About Thinking	Keyser, C. J.	E. P. Dutton & Company	1926

TABLE 14.—BOOKS HELPFUL IN BUILDING HIGH-SCHOOL MATHEMATICS COURSES—(Continued)

Title	Author	Publisher	Year of publication
The Teaching of Elementary Algebra	Ligda, Paul	Houghton Mifflin Company	1925
The Reorganization of Mathematics in Secondary Schools (Final Report of the Committee)	National Committee on Mathematical Requirements	Houghton Mifflin Company	1927
The Teaching of Algebra, Including Trigonometry	Nunn, T. P.	Longmans, Green & Company	1914
A Course for Teachers of Junior High School Mathematics, Contributions to Education, No. 313	Schaaf, W. L.	Bureau of Publications, Teachers College, Columbia University	1928
The Psychology of Algebra	Thorndike, E. L., and others	The Macmillan Company	1923
Enriched Teaching of Mathematics in the High Schools	Woodring, Maxie, and Sanford, Vera	Bureau of Publications, Teachers College, Columbia University	1928
The Teaching of Mathematics in the Elementary and Secondary Schools	Young, J. W. A.	Longmans, Green & Company	1924

Among those contributing to the above list were: William Betz, Board of Education, Rochester, N. Y.; Guy T. Buswell, School of Education, University of Chicago, Chicago, Ill.; John R. Clark, Lincoln School of Teachers College, Columbia University, New York City; J. A. Foberg, State Normal School, California, Pa.; and Raleigh Schorling, School of Education, University of Michigan, Ann Arbor, Mich.

Modern Foreign Languages

The *Modern Foreign Language Study*, reported in seventeen volumes, makes it extremely difficult to select six books most helpful to local course-of-study committees. Furthermore, when the lists of the six specialists, which are tabulated according to frequency

of mention in Table 15, were submitted, several of the volumes of the *Modern Foreign Language Study* were still in press. Hence, in this table, in particular, the number of times that any one book is mentioned should not be given too much weight. The first ten books were mentioned two or more times.

TABLE 15—BOOKS HELPFUL IN BUILDING HIGH-SCHOOL MODERN FOREIGN LANGUAGES COURSES

Title	Author	Publisher	Year of publication
Methods of Teaching Modern Languages	Handschin, C. H.	World Book Company	1923
The Teaching of Modern Foreign Languages in the United States	Coleman, Algernon	The Macmillan Company	In press
Principles of Language Study	Palmer, Harold E.	World Book Company	1921
Teaching of German in Secondary Schools	Bagster-Collins, E. W.	Columbia University Press	1904
French, Course of Study Mono. No. 15	Denver, Colo., Public Schools	Denver Board of Education	1925
Spanish, Course of Study Mono. No. 11	Denver, Colo., Public Schools	Denver Board of Education	1925
Achievement Tests in the Modern Foreign Languages	Henmon, V. A. C.	The Macmillan Company	1928
The Modern Language Journal	National Federation of Modern Language Teachers	George Bante Publishing Company	Monthly
Spanish in the High Schools	Wilkins, L. A.	Benj. H. Sanborn & Co.	1921
New York Experiments with New-Type Modern Language Tests	Wood, Ben D.	The Macmillan Company	1927
Hispania	American Association of Teachers of Spanish	American Association of Teachers of Spanish	Six times a year
A Graded Spanish Word Book	Buchanan, Milton A.	University of Toronto Press	1928
An Annotated Bibliography of Modern Language Methodology	Buchanan, Milton A., and MacPhee, E. D.	University of Toronto Press	1928
A Laboratory Study of the Reading of Modern Foreign Languages	Buswell, Guy Thomas	The Macmillan Company	1927
Modern Language Instruction in Canada—Part I.	Canadian Committee on Modern Languages	University of Toronto Press	1928
Modern Language Instruction in Canada—Part II.	Canadian Committee on Modern Languages	University of Toronto Press	1928
The French Review	Cornell University	Cornell University	
Fourth Yearbook, The Nation at Work on the Public School Curriculum	Department of Superintendence	National Education Association	1926
Fifth Yearbook, The Junior High School Curriculum	Department of Superintendence	National Education Association	1927
Sixth Yearbook, The Development of the High School Curriculum	Department of Superintendence	National Education Association	1928
German Idiom List	Hauch, Edward F.	The Macmillan Company	1929
Silent Reading, Supplementary Educational Monographs, No. 23	Judd, Charles Hubbard, and Buswell, Guy Thomas	The University of Chicago	1922
Spanish Idiom List	Keniston, Hayward	The Macmillan Company	1929
The Modern Languages Forum	Modern Language Association of Southern California	Modern Language Association of Southern California	Quarterly
German Frequency Word Book	Morgan, B. Q.	The Macmillan Company	1928

TABLE 15—BOOKS HELPFUL IN BUILDING HIGH-SCHOOL MODERN FOREIGN LANGUAGES COURSES—(Continued)

Title	Author	Publisher	Year of publication
French in the Junior and Senior High Schools, Grades 7-12	Oakland, Calif., Public Schools	Oakland Board of Education	1924
Spanish for Junior and Senior High Schools, Grades 7-12	Oakland, Calif., Public Schools	Oakland Board of Education	1926
Training of Teachers of the Modern Foreign Languages (The Modern Foreign Language Study)	Purin, C. M.	The Macmillan Company	1929
Report of the Committee of Twelve	U. S. Bureau of Education, Report of the Commissioner, 1897-8	Government Printing Office	1899
French Frequency Word Book	Vander Beke, George E.	The Macmillan Company	In press
Enrolment in the Foreign Languages in Secondary Schools and Colleges of the United States	Wheeler, C. A., and others	The Macmillan Company	1928

Among those contributing to the above list were: Algernon Coleman, Professor of French, University of Chicago, Chicago, Ill.; E. B. de Sauzé, Director of Foreign Languages, Board of Education, Cleveland, Ohio; Jacob Greenberg, Director of Foreign Languages in Junior High Schools, Board of Education, New York City; Charles H. Handschin, Miami University, Oxford, Ohio; C. M. Purin, Director of Day School, University Extension Division, University of Wisconsin, Madison, Wis.; and George W. H. Shield, Supervisor, Division of Modern Languages, Board of Education, Los Angeles, Calif.

Music

Table 16 is a compilation of the lists of books submitted by seven specialists in music. The first four titles occurred in two or more

of these lists. Several specialists wrote at length of the difficulty of selecting "six really helpful books" dealing with curriculum problems in high-school music.

TABLE 16.—BOOKS HELPFUL IN BUILDING HIGH-SCHOOL MUSIC COURSES

Title	Author	Publisher	Year of publication
High School Music Teaching for Superintendents, Music Supervisors, Grade and High School Teachers	Giddings, Thaddeus P., and Baker, Earl L.	E. L. Baker	1922
High School Course of Study in Music, Jr.-Sr. Divisions, Grades 7-12, Bul. No. 9	Earhart, Will, Chairman	Pittsburgh, Pa., Board of Education	1927
Tests and Measurements in Music	Kwalwasser, Jacob G.	C. C. Birchard & Company	1927
1928 Book of Proceedings of the Music Supervisors' National Conference	Weaver, Paul J., Editor	University of North Carolina	1928
Music Course of Study for Senior High Schools, Grades 10, 11, 12	Anderson, Lucile F.	Long Beach, Calif., City Schools	1927
Principles and Methods of Musical Criticism	Calvocoressi, M. D.	Oxford University Press	1923
Creative Music for Children	Coleman, Satis N.	G. P. Putnam's Sons	1922
Choral Technique and Interpretation	Coward, Henry	H. W. Gray Company	1914
School Music Handbook	Cundiff, Hannah, and Dykema, Peter W.	C. C. Birchard & Company	1923
Music Education in America	Davison, Archibald T.	Harper & Brothers	1926
Fifth Yearbook, The Junior High School Curriculum	Department of Superintendence	National Education Association	1927
Sixth Yearbook, The Development of the High School Curriculum	Department of Superintendence	National Education Association	1928
Influence of Music on Behavior	Diserens, Charles Murdock	Princeton Univ. Press	1926
Music in High Schools and Colleges	Dykema, Peter W., Chairman	National Conference of Music Supervisors	1929
Education Through Music	Farnsworth, Charles H.	American Book Company	1909
How to Study Music	Farnsworth, Charles H.	The Macmillan Company	1920
Essentials in Conducting	Gehrken, Karl	Oliver Ditson Company	1919
Introduction to School Music Teaching	Gehrken, Karl	C. C. Birchard & Company	1919
Harmony for Ear, Eye, and Keyboard	Heacox, Arthur E.	Oliver Ditson Company	1922
Education and the Larger Life	Henderson, C.	Houghton Mifflin Company	1907
Borderland of Music and Psychology	Howes, Frank	Oxford University Press	1927
Music Instruction in Junior and Senior High Schools in Forty Representative Cities	Hughes, Cecil L.	School Review, Vol. XXXV, No. 6	June, 1927
Music in High Schools of the Middle West	Koos, Leonard V.	School Music, Vol. XVIII	Jan., 1917
Instrumental Technique for Orchestra and Band	Maddy, J. E., and Giddings, Thaddeus P.	Willis Music Co.	1927
The Practice of Teaching in the Secondary School	Morrison, Henry Clinton	University of Chicago Press	1926
Introduction to Music Appreciation and History	Moyer, Dorothy T.	Oliver Ditson Company	1923
Principles of Musical Education	Mursell, James D.	The Macmillan Company	1927
Summary of Content of Books of Proceedings of the Music Supervisors' National Conference, 1914-28	Music Supervisors' Journal, Paul J. Weaver, Editor	Music Supervisors' National Conference	Oct., 1928

**TABLE 16.—BOOKS HELPFUL IN BUILDING HIGH-SCHOOL MUSIC COURSES—
(Continued)**

Title	Author	Publisher	Year of publication
Research Council Bul. No. 2, Plan for Granting High School Credits for Applied Music	National Research Council of Music Education	Paul J. Weaver, Chapel Hill, North Carolina	1922
Research Council Bul. No. 4, Report on Junior High Schools	National Research Council of Music Education	Paul J. Weaver, Chapel Hill, North Carolina	1925
Research Council Bul. No. 8, College Entrance Credits and College Courses in Music	National Research Council of Music Education	Paul J. Weaver, Chapel Hill, North Carolina	1928
Principles of Aesthetics	Parker, De Witt	Silver, Burdett & Company	1920
Music: A Science and an Art	Redfield, John	Alfred A. Knopf	1928
Psychology of Musical Talent	Seashore, Carl E.	Silver, Burdett & Company	1919
Philosophy of Music; What Music Can Do for You	Seymour, Harriet	Harper & Brothers	1920

Among those contributing to the above list were: John W. Beattie, Director, Department of Public School Music, Northwestern University School of Music, Evanston, Ill.; Will Earhart, Director of Music, Public Schools, Pittsburgh, Pa.; Jacob Kwalwasser, Professor of Music Education, College of Fine Arts, Syracuse University, Syracuse, N. Y.; Joseph E. Maddy, President and Musical Director, National High School Orchestra Camp Association, Ann Arbor, Mich.; Charles H. Miller, Director, Department of Music, Board of Education, Rochester, N. Y.; Russell V. Morgan, Directing Supervisor, Department of Music, Board of Education, Cleveland, Ohio; and Paul J. Weaver, Director, Department of Music, University of North Carolina, Chapel Hill, N. C.

TABLE 17.—BOOKS HELPFUL IN BUILDING HIGH-SCHOOL SCIENCE COURSES

Title	Author	Publisher	Year of publication
A Digest of Investigations in the Teaching of Science	Curtis, Francis D.	P. Blakiston's Son & Co.	1926
How to Teach General Science	Frank, J. O.	P. Blakiston's Son & Co.	1926
Fifth Yearbook, The Junior High School Curriculum	Department of Superintendence	National Education Association	1927
Sixth Yearbook, The Development of the High School Curriculum	Department of Superintendence	National Education Association	1928
Teaching Science in the Schools	Downing, Elliott R.	University of Chicago Press	1925
Chemistry in Modern Life	Arrhenius, S. A.	D. Van Nostrand Company	1925
The Teaching of Science and the Science Teacher	Brownell, Herbert, and Wade, F. B.	The Century Co.	1925
Elementary Principles of Chemistry, Revised	Brownlee, R. B., and others	Allyn and Bacon	1926
Biology and Human Life	Conklin, E. G.	Science, Vol. 58, pp. 463-69	Nov. 16, 1928
Certain Techniques Used in Developing a Course of Study in Science for the Horace Mann Elementary School, Contributions to Education, No. 276	Craig, Gerald S.	Bureau of Publications, Teachers College, Columbia University	1927
A Synthesis and Evaluation of Subject-Matter Topics in General Science	Curtis, Francis D.	Ginn and Company	1929
The Teaching of General Science	Eikenberry, W. L.	University of Chicago Press	1922
Education of the Consumer	Harap, Henry	The Macmillan Company	1924
Measurable Outcomes of Individual Laboratory Work in the Teaching of Chemistry, Contributions to Education, No. 303	Horton, Ralph E.	Bureau of Publications, Teachers College, Columbia University	1928
New Essentials of Biology	Hunter, George W.	American Book Company	1923
Reorganization of Science Teaching in Secondary Schools, Bureau of Education Bulletin, No. 26	Kingsley, Clarence D., Chairman	Government Printing Office	1920
Foundations of the Universe	Luckiesh, M.	D. Van Nostrand Company	1925
Elements of Physics	Millikan, Robert A., and Gale, H. G.	Ginn and Company	1927
The Nature Almanac	Palmer, E. L., and Pack, Arthur N.	American Nature Association	1927
Everyday Problems in Science	Pieper, C. J., and Beauchamp, M. L.	Scott, Foresman & Company	1925
Objective Measurement in General Science	Powers, Samuel R.	Teachers College Record, Vol. XXIX, pp. 345-49	Jan., 1928
New Biology	Smallwood, M. M.; Reveley, I. L.; and Bailey, G. A.	Allyn and Bacon	1924
The Teaching of Science in Normal Schools and Teachers Colleges, Contributions to Education, No. 287	Van De Voort, Alice M.	Bureau of Publications, Teachers College, Columbia University	1927
Courses of Study in Junior and Senior High Schools, Bulletin No. 7, Science Syllabus	Watkins, Ralph K., Chairman	Missouri State Department of Education	1927

Among those contributing to the above list were: J. L. Coopridger, Head of Science Department, Central High School, Evansville, Ind.; Francis D. Curtis, Associate Professor of the Teaching of Biology and General Science, School of Education, University of Michigan, Ann Arbor, Mich.; Earl R. Glenn, Professor of Physics, New Jersey State Teachers College, Upper Montclair, N. J.; S. R. Powers, Professor of Natural Science, Teachers College, Columbia University, New York City; Ralph K. Watkins, University High School, University of Missouri, Columbia, Mo.; Hanor A. Webb, Professor of Chemistry, George Peabody College for Teachers, Nashville, Tenn.; and Edward E. Wildman, Director, Science Education, Board of Education, Philadelphia, Pa.

Science

The first four books in Table 17 were mentioned from four to three times by seven specialists. The last nineteen were mentioned once. The shortness of the list would seem to indicate more or less agreement among these seven science specialists as to which six books are most helpful to local committees building science courses for the secondary school. The fact that three of the first four books in Table 17 present summaries of research studies probably accounts for their position in the list.

Social Studies

Table 18 is a composite of the separate lists of five specialists in social studies. The first five books were mentioned from three to two times, the rest once, showing that there is little agreement as to the six books most helpful to local course-of-study committees. In fact, most of these specialists wrote that it was quite impossible to select so limited a list.

TABLE 18.—BOOKS HELPFUL IN BUILDING HIGH-SCHOOL SOCIAL STUDIES COURSES

Title	Author	Publisher	Year of publication
Teaching the Social Studies	Dawson, Edgar	The Macmillan Company	1927
Fourth Yearbook, The Nation at Work on the Public School Curriculum, pp. 323-79	Department of Superintendence	National Education Association	1926
Files of "The Historical Outlook"	McKinley, Albert E., Editor	McKinley Publishing Company	Monthly
The Practice of Teaching in Secondary Schools	Morrison, Henry Clinton	University of Chicago Press	1926
Twenty-Second Yearbook, Part II, Social Studies in the Elementary and Secondary Schools	National Society for the Study of Education	Public School Publishing Company	1923
Report of Committee of Seven Minutes, Second Annual Meeting	American History Association	The Macmillan Company	1902
Some Difficulties in Elementary School History, Contributions to Education, No. 212	Association of History Teachers of the Middle States and Maryland	Association of History Teachers of the Middle States and Maryland	1904
The Curriculum	Ayer, Adelaide	Bureau of Publications, Teachers College, Columbia University	1926
How to Make a Curriculum	Bobbitt, Franklin	Houghton Mifflin Company	1918
The Classroom Teacher, Vol. XI	Bobbitt, Franklin	Houghton Mifflin Company	1924
Third Yearbook, Research in Constructing the Elementary School Curriculum, pp. 217-78	The Classroom Teacher	Houghton Mifflin Company	1928
Fifth Yearbook, The Junior High School Curriculum, pp. 213-91	Department of Superintendence	National Education Association	1925
Sixth Yearbook, The Development of the High School Curriculum, pp. 289-309	Department of Superintendence	National Education Association	1927
The Teaching of the Social Studies, Maryland School Bulletin VI, No. 4	Fontaine, E. Clarke	Maryland State Department of Education	Dec., 1924
How to Make Courses of Study in the Social Sciences, University of Illinois Educational Research Circular, No. 46	Herriott, M. E.	University of Illinois	1926
Determination of the Major Social Problems of American Life, Contributions to Education, No. 281	Hockett, John	Bureau of Publications, Teachers College, Columbia University	1927
The Teaching of History in Elementary and Secondary Schools	Johnson, Henry	The Macmillan Company	1915
Teaching American History in the Middle Grades of the Elementary School	Kelty, Mary G.	Ginn and Company	1928
Foundations of Method	Kilpatrick, William Heard	The Macmillan Company	1925
History and the Other Social Studies in the Junior High School	Knowlton, D. C.	Charles Scribner's Sons	1926
Issues in the Social Studies, Social Science Monograph No. 3	Lee, Baldwin	Bureau of Publications, Teachers College, Columbia University, for Lincoln School of Teachers College	1928
Meaning of a Liberal Education	Martin, Everett D.	W. W. Norton & Co., Inc.	1926
The Grade Placement of Curriculum Materials in the Social Studies, Contributions to Education, No. 241	Mathews, C. O.	Bureau of Publications, Teachers College, Columbia University	1926
Children's Social Concepts, Contributions to Education, No. 192	Meltzer, Hyman	Bureau of Publications, Teachers College, Columbia University	1925
Supplementary Educational Monographs, No. 24, Studies in Secondary Education	Morrison, Henry Clinton	The University of Chicago	1923
Twenty-Fifth Yearbook, Part II, Extra-Curricular Activities	National Society for the Study of Education	Public School Publishing Company	1926
Twenty-Sixth Yearbook, Foundations and Technique of Curriculum Making	National Society for the Study of Education	Public School Publishing Company	1927

TABLE 18.—BOOKS HELPFUL IN BUILDING HIGH-SCHOOL SOCIAL STUDIES COURSES—(Continued)

Title	Author	Publisher	Year of publication
Supplementary Educational Monographs, No. 26, Studies in Secondary Education.....	Reavis, William Claude	The University of Chicago	1925
Objective Examination Methods in the Social Studies.....	Ruch, G. M., and others	Scott, Foresman & Company	1926
Tests and Measurements in High School Instruction.....	Ruch, G. M., and Stoddard, G. D.	World Book Company	1927
Curriculum Studies in the Social Sciences and Citizenship.....	Rugg, Earle U.	Colorado State Teachers College	1928
Teaching of History in Junior and Senior High Schools.....	Tryon, R. M.	Ginn and Company	1921

Among those contributing to the above list were: Edgar Dawson, Professor of History and Social Science, Hunter College of the City of New York; Charles E. Finch, Director, Junior High School Grades and Citizenship, Rochester, N. Y.; Howard C. Hill, Head, Department of Social Studies, University of Chicago High School, University of Chicago, Chicago, Ill.; John J. Mahoney, Director, Harvard-Boston University Extension Courses, Boston, Mass.; and Earle U. Rugg, Head, Department of Education, Colorado State Teachers College, Greeley, Colo.

TABLE 19.—ADDRESSES OF PUBLISHERS OF BOOKS LISTED IN TABLES 6-18

Publisher	Address	Publisher	Address
Abbott Educational Company.....	Chicago, Ill.	Alfred A. Knopf.....	New York City
Allyn and Bacon.....	New York City	Lea & Febiger.....	Philadelphia, Pa.
American Association of Teachers of Spanish.....	Stanford University, Calif.	J. B. Lippincott Company.....	Philadelphia, Pa.
American Book Company.....	New York City	Little, Brown & Company.....	Boston, Mass.
American Classical League.....	New York University, New York City	Longmans, Green & Company.....	New York City
American Home Economics Assn.	Washington, D. C.	Lyons & Carnahan.....	Chicago, Ill.
American Nature Association.....	Washington, D. C.	The Macmillan Company.....	New York City
D. Appleton and Company.....	New York City	The Manual Arts Press.....	Peoria, Ill.
Richard G. Badger.....	Boston, Mass.	McGraw-Hill Book Company, Inc.	New York City
E. L. Baker.....	Minneapolis, Minn.	McKinley Publishing Company.....	Philadelphia, Pa.
George Banta Publishing Company,	Menasha, Wis.	Mentzer, Bush & Company.....	New York City
A. S. Barnes & Co.....	New York City	Merrill-Palmer School.....	Detroit, Mich.
M. Barrows & Company.....	Boston, Mass.	Modern Language Journal, National Federation of Modern Language Teachers, George Banta Publishing Company.....	Menasha, Wis.
Bates & Guild.....	Boston, Mass.	Modern Languages Forum, Modern Language Association of Southern California.....	Los Angeles, Calif.
C. C. Birchard & Company.....	Boston, Mass.	National Education Association.....	Washington, D. C.
P. Blakston's Son & Co.....	Philadelphia, Pa.	Thomas Nelson & Sons.....	New York City
The Bobbs-Merrill Company.....	Indianapolis, Ind.	W. W. Norton & Company.....	New York City
Bridgman Publishers.....	Pelham, N. Y.	Open Court Publishing Company.....	Chicago, Ill.
Bruce Publishing Company.....	Milwaukee, Wis.	Oxford University Press.....	New York City
Bureau of Publications, Teachers College, Columbia University.....	New York City	Pacific Press Publishing Association.	Mountain View, Calif.
The Century Co.....	New York City	George Peabody College for Teachers	Nashville, Tenn.
Clark University Press.....	Worcester, Mass.	Pencil Points Press, Inc.....	New York City
The Classroom Teacher, Inc.....	Chicago, Ill.	Pennsylvania State Department of Public Instruction	Harrisburg, Pa.
Colorado State Teachers College.....	Greeley, Colo.	Sir Isaac Pitman & Sons.....	New York City
Columbia University Press.....	Columbia University, New York City	Prang Co.....	New York City
William T. Comstock.....	New York City	Prentice-Hall, Inc.....	New York City
Davis Press, Inc.....	Worcester, Mass.	Princeton University Press.....	Princeton, N. J.
Oliver Ditson Company.....	Boston, Mass.	Public School Publishing Company.	Bloomington, Ill.
Doubleday, Doran & Co., Inc.	Garden City, N. Y.	G. P. Putnam's Sons.....	New York City
E. P. Dutton & Company.....	New York City	Rand McNally & Company.....	Chicago, Ill.
Eastern Commercial Teachers Association	New York City	Ronald Press Company.....	New York City
Educational Administration and Supervision, Warwick & York, Inc.	Baltimore, Md.	Benj. H. Sanborn & Co.....	Boston, Mass.
Elementary School Journal, University of Chicago	Chicago, Ill.	W. B. Saunders Company.....	Philadelphia, Pa.
The English Journal, University of Chicago Press	Chicago, Ill.	School Arts Magazine, Davis Press, Inc.	Worcester, Mass.
Federated Council on Art Education, Royal B. Farnum	Boston, Mass.	School Music, P. C. Hayden.....	Keokuk, Iowa
Ginn and Company.....	Boston, Mass.	School Review, Univ. of Chicago	Chicago, Ill.
Government Printing Office.....	Washington, D. C.	Science Magazine, The Science Press	New York City
H. W. Gray Company.....	New York City	Scott, Foresman & Company.....	Chicago, Ill.
W. B. Greene, Secretary, American Bankers Association	New York City	Charles Scribner's Sons.....	New York City
Gregg Publishing Company.....	New York City	Silver, Burdett & Company.....	New York City
Harcourt, Brace and Company.....	New York City	South-Western Publishing Co.	Cincinnati, Ohio
Harper & Brothers.....	New York City	Teachers College Record, Bureau of Publications, Teachers College, Columbia University	New York City
Harvard University Press.....	Cambridge, Mass.	University of Chicago Press	Chicago, Ill.
D. C. Heath & Co.....	Boston, Mass.	University of Illinois.....	Urbana, Ill.
High School Teacher, High School Teacher Company	Columbus, Ohio	University of North Carolina.....	Chapel Hill, N. C.
His Majesty's Stationery Office.....	London, England	University of Toronto Press.....	Toronto, Ontario, Canada
The Historical Outlook, McKinley Publishing Company	Philadelphia, Pa.	D. Van Nostrand Company.....	New York City
Henry Holt and Company.....	Chicago, Ill.	George Wahr.....	Ann Arbor, Mich.
Houghton Mifflin Company.....	Boston, Mass.	Warwick & York, Inc.....	Baltimore, Md.
Marshall Jones Company.....	Boston, Mass.	Williams & Wilkins Company.....	Baltimore, Md.
Journal of Educational Research, Public School Publishing Co.	Bloomington, Ill.	Willis Music Co.....	Cincinnati, Ohio
		World Book Company.....	Yonkers-on-Hudson, N. Y.

New Courses for Secondary Schools

Revision of high-school courses since 1920—Never before have so much time and thought been given to the development of new high-school courses and the rebuilding of old ones as during the past nine years.

Table 20 lists 1,279 high-school course-of-study bulletins, containing 70,659 pages, published since 1920, which have come to the attention of the Research Division of the National Education Association. This by no means represents all the high-school courses of study published since 1920. A comprehensive list was not attempted.

The distribution of these 1,279 bulletins by title, number, and pages is as follows:

Type of courses	Number of bulletins	Total number of pages
General city.....	133	10,013
General state and county	65	8,544
Agriculture.....	19	1,231
Art.....	39	1,888
Character and guidance	14	976
Commercial education..	101	4,088
English.....	145	8,528
Foreign languages.....	117	4,036
Health and physical education.....	57	3,797
Home economics.....	93	4,708
Industrial arts.....	156	5,227
Mathematics.....	74	2,793
Music.....	34	926
Science.....	106	4,487
Social Studies.....	126	9,417
Grand total.....	1,279	70,659

Of the bulletins dealing with single subjects, which have come to the attention of the Research Division, more have been issued in industrial arts, English, and social studies than in any other secondary school subject fields.

Availability of local courses of study—Most school systems in issuing new courses announce them as "tentative." The expense of publishing these tentative courses is heavy. Frequently only a limited number of extra copies are available for distribution outside the local school system. Some school boards find it necessary to place a nominal charge on these bulletins to cover cost of printing and

mailing; others distribute a limited number free to superintendents of schools and students of education.

Of the bulletins listed in Table 20, it is probable that the number available for distribution is sufficiently small so that requests for them should only be made when there is a real need and then only for those bulletins in which one is particularly interested.

No brief for scissors and paste pot—In printing the list of bulletins in Table 20, no brief is held for the traditional scissors and paste pot method of course-of-study compilation. The purpose of publishing the list is not to offer a ready means of furnishing raw material for attacking the problem of curriculum revision with scissors and paste pot. The list is printed here because it serves other purposes and because it is nowhere else available.

Legitimate uses of a list of course-of-study bulletins—The list of 1,279 bulletins in Table 20 should serve to show:

1. Extent of the effort which the teaching profession is making to modernize the secondary school.

Indirectly these bulletins are tangible evidence of the dissatisfaction which school people have with the traditional high-school courses.

2. What particular school systems are engaged in building secondary school courses of study.

Correspondence between the officers of such school systems should make it possible for each school system to check the results of new departures against the experiences of a number of other systems.

3. Certain tendencies in revising courses of study.

The bulletins listed in Table 20 show that the course of study which brings together under one cover all subjects is giving way to the smaller and more flexible manuals dealing with single subjects. It is interesting to note the wide range of topics included under commercial education and under industrial arts; also that in certain subjects junior and senior high-school courses are printed in the same bulletin.

TABLE 20.—HIGH-SCHOOL COURSES OF STUDY PUBLISHED SINCE 1920

Year	Title	No. of pages	Year	Title	No. of pages
GENERAL COURSES IN CITY SCHOOL SYSTEMS			GENERAL COURSES IN CITY SCHOOL SYSTEMS—Cont.		
1921	Amarillo, Texas, Course of Study, Rules and Regulations	39	1928	Elkins Park, Pa., Handbook, Cheltenham Jr.-Sr. H. S.	48
1928	Amarillo, Texas, Teachers' Reference Book and Course of Study, Sr. H. S.	164	1926	Eugene, Ore., The University H. S., Univ. of Ore. Bul., New Series, Vol. 23, No. 6, June, 1926.	48
1926	Ames, Iowa, Sr. H. S. Course of Study and Handbook	*73	1928	Evanston, Ill., Catalog, Evanston Tp. H. S.	67
1928	Anaheim, Calif., Catalog of Anaheim Union H. S.	99	1920	Everett, Wash., Detailed Outline of Courses of Study	*45
1928	Appleton, Wis., Student Handbook, Sr. H. S.	96	1926	Florence, Ariz., H. S. Students' Handbook	38
	Ashtabula Harbor, Ohio, Courses of Study, Jr. and Sr. H. S.	*208	1925	Gainesville, Texas, Sr. H. S. Course of Study	*15
1927	Athens, Ga., Forty-Second Annual Report of the City Schools	62	1928	Glendale, Calif., Handbook of the Glendale Union H. S.	168
1926	Athens, Ohio, A Brief Statement of the Courses Offered in the Sr. H. S.	*41	1927	Goshen, Ind., Announcement of the H. S.	45
1927	Atlantic City, N. J., H. S. Catalog	127	1927	Hackensack, N. J., H. S. Curricula	14
1922	Austin, Texas, Course of Study of the H. S.	87	1925	Hannibal, Mo., Courses of Study, Elem., Jr. and Sr. H. S.	112
1927	Bad Axe, Mich., Announcement and Curriculum, H. S.	21	1924	Highland Park, Mich., Yearbook of H. S.	77
1928	Baltimore, Md., Register, The Forest Park H. S.	60	1928	Honolulu, T. H., Catalog of the Kamehameha Schools	120
	Bellefontaine, Ohio, Description of Courses in H. S.	*9	1928	Horton, Kan., H. S. Handbook	25
1923	Berkeley, Calif., Course of Study of the H. S., Mono. No. 1.	88	1928	Humboldt, Kan., Course of Study, H. S.	23
1926	Berkeley, Calif., Course of Study of the H. S., Mono. No. 1.	106	1925	Johnstown, Pa., The Jr. and Sr. H. S.	39
1928	Biloxi, Miss., Manual and Course of Study, City Schools	79	1921	Kalamazoo, Mich., Course of Study, Book V, Art, Industrial Arts, Household Arts, Manual Training, and Vocational Studies	90
1922	Birmingham, Ala., H. S. Courses of Study and Regulations	48	1921	Kalamazoo, Mich., Course of Study and Manual of Instruction, Gr. 7-12, Book IV	89
1923	Birmingham, Ala., H. S. Courses of Study and Regulations	46	1928	Kalamazoo, Mich., Catalog of Western State H. S., Western State Teachers College Bul. Vol. 24, No. 1.	31
1925	Birmingham, Ala., H. S. Courses of Study and Regulations	48	1921	Kansas City, Mo., Course of Study of the Public H. S.	122
1927	Birmingham, Ala., H. S. Courses of Study and Regulations	53	1923	Kent, Ohio, Roosevelt H. S. Course of Study	*32
1928	Birmingham, Ala., H. S. Courses of Study and Regulations	52	1927	Kent, Ohio, Suggestions and Course of Study, Roosevelt H. S.	*48
1921	Biwabik, Minn., Course of Study for the H. S.	*47	1928	LaGrange, Ill., Fortieth Annual Yearbook, Lyons Tp. H. S.	116
1921	Boston, Mass., Course of Study for the Latin Schools	34	1928	Lancaster, Pa., Handbook of the Stevens H. S. for Girls	84
1921	Boston, Mass., Reorganized Plan of Secondary Instruction, School Document No. 2.	31	1928	Laurel, Miss., Courses of Study for the Public Schools	88
1926	Boston, Mass., Provisional Curricula for General H. S., School Document No. 17.	27	1928	Leonia, N. J., Circular of Information, Curricula, and Courses of Study, H. S.	38
1928	Boston, Mass., Catalog, English H. S.	105	1927	Lexington, Ky., Course of Study of the Jr. and Sr. H. S.	81
1928	Buffalo, N. Y., Handbook, Hutchinson Central H. S.	160	1926	Long Beach, Calif., Students' Manual and Outline of Courses	81
1928	Buffalo, N. Y., Handbook of Information, Lafayette H. S.	144	1928	Los Gatos, Calif., Bulletin of Information and Courses of Study of the Union H. S.	32
1923	Champaign, Ill., H. S. Courses of Study	87	1923	Marshall, Texas, Course of Study, Public Schools	22
1923	Charlotte, N. C., Courses of Study of the Board of School Commissioners, Gr. 1-12.	292	1924	Marshalltown, Iowa, H. S. Manual	56
1925	Charlotte, N. C., Courses of Study, Jr. and Sr. H. S.	110	1928	Monrovia, Calif., Manual and Course of Study, H. S.	46
1926	Charlotte, N. C., Handbook, Central H. S.	92	1928	Mt. Carroll, Ill., Catalog, Frances Shimer H. S.	62
1926	Charlotte, N. C., Supplementary Course of Study, Jr. and Sr. H. S.	80	1928	Mt. Hermon, Mass., Catalog, Mt. Hermon School Bulletin No. 367.	71
1927	Chatham, Ga., The Senior High School	20	1924	Muncie, Ind., Course of Study for the H. S.	47
1927	Cheyenne, Wyo., Organization and Curriculum, H. S.	157	1927	Muncie, Ind., Information Bulletin for the H. S.	38
1927	Chicago, Ill., Catalog and Course of Study, Francis W. Parker H. S.	175	1928	New Orleans, La., Course of Study, H. S.	293
1926	Chico, Calif., Course of Study of the H. S., Coleraine, Minn., H. S. Bul., Independent Sch. Dist. No. 2, Itasca Co.	*27	1922	Newark, N. J., H. S. Manual	164
1927	Columbus, Ga., Annual Report and Course of Study, Public Schools	148	1924	Normal, Ill., The Normal School Quarterly, Series 22, No. 92, The Univ. H. S. Curricula and Courses	22
1924	Concord, N. H., Suggested Courses of Study for Jr. and Sr. H. S.	*29	1924	Nutley, N. J., Nutley Public Schools, Bulletin No. 2.	27
1927	Corsicana, Texas, The Curriculum of the Public Schools, H. S.	266	1925	Nutley, N. J., The Non-Academic Studies	38
1925	Dallas, Texas, Teachers' Handbook and Program of Studies in H. S.	180	1924	Oakland, Calif., Course of Study Series No. 62.	*8
1926	Detroit, Mich., Announcements of Courses Offered at the H. S. of Commerce	32	1926	Ontario, Calif., Circular of Information and Announcement of Courses, Chaffey Union H. S.	111
1924	Douglas, Ariz., H. S. Courses	*26	1923	Owingsville, Ky., Course of Study, H. S.	306
1927	Dubuque, Iowa, Handbook of Departments, Sr. H. S.	34	1928	Owingsville, Ky., Course of Study and Manual of the Public Schools	130
1927	Elberton, Ga., Courses for Public Schools	65	1928	Paterson, N. J., Handbook of Eastside H. S.	95
			1928	Philadelphia, Pa., University H. S., Temple Univ. Bul. Vol. X, No. 10.	55
			1925	Plainview, Texas, Announcement of the Public Schools	75
			1923	Pontiac, Ill., H. S. Yearbook	57

* Mimeographed or typewritten sheets.

TABLE 20.—HIGH-SCHOOL COURSES OF STUDY PUBLISHED SINCE 1920—
(Continued)

Year	Title	No. of pages	Year	Title	No. of pages
GENERAL COURSES IN CITY SCHOOL SYSTEMS—Cont.			GENERAL COURSES IN STATE AND COUNTY SCHOOL SYSTEMS—Cont.		
1926	Portsmouth, Va., Handbook, Woodrow Wilson H. S.	56	1928	Columbus, Kan., Catalog of the Cherokee Co. Community H. S.	81
1928	Pratt, Kan., Handbook of Jr.-Sr. H. S.	79	1921	Connecticut, Organization and Administration of H. S.	37
1925	Pueblo, Colo., Course of Study, Centennial H. S., District No. 1.	15	1925	Florida, Glances from Intermediate and H. S. Departments.	71
1928	Puente, Calif., Manual of the Puente Union H. S.	87	1926	Florida, Suggestions from Intermediate and H. S. Departments.	48
1928	Richford, Vt., Richford H. S. Searchlight, Vol. 9, No. 5.	40	1928	Florida, Standards and Programs of Studies for H. S.	51
1922	Richmond, Va., Courses of Study, John Marshall H. S.	33	1927	Hawaii, H. S. Course of Study.	*160
1927	Rockford, Ill., Handbook, Sr. H. S.	94	1927	Hawaii, H. S. Course of Study Series, Part Two, Section IX, Miscellaneous.	22
	Rutherford, N. J., Sr. H. S., Classical Curriculum.	*16	1920	Idaho, Manual and Course of Study, Gr. 9-12.	155
1926	Sacramento, Calif., H. S. Course of Study.	*90	1923	Idaho, Manual and Course of Study for H. S.	164
1929	St. Louis, Mo., "The Principia," Part III, The Upper School.	44	1926	Idaho, Manual and Course of Study for H. S., Idaho Bul. of Education, Vol. XII, No. 3.	180
1921	Salt Lake City, Utah, Syllabus of Courses of Study, Jr. and Sr. H. S.	54	1923	Indiana, Manual with State Courses of Study for Secondary Schools, Bul. No. 65.	416
1927	San Francisco, Calif., Aims and Subjects, Part-Time H. S.	24	1924	Indiana, H. S. Standards.	58
1928	Santa Monica, Calif., Students' Handbook, Outline of Courses, H. S.	63	1925	Indiana, A Handbook of Instructions.	11
1927	Savannah, Ga., Course of Study, Sr. H. S.	*16	1922	Kansas (State Normal School, Emporia), General Catalog, Roosevelt H. S.	23
1927	Scranton, Pa., Course of Study for Tech. H. S.	97	1926	Kansas, Course of Study for H. S., Part I, Synopsis.	19
1927	Scranton, Pa., Course of Study for Central H. S.	121	1926	Kansas, Course of Study for H. S., Part VII.	40
1927	Seattle, Wash., Courses of Study for H. S.	58	1927	Kentucky, A Study of the Small H. S., with Recommendations for Improvement.	63
1926	Sheridan, Wyo., Outline of Course of Study for H. S.	54	1927	Kentucky, Manual, Programs and Courses of Studies for H. S.	312
1928	South Bend, Ind., "Which?" A Bulletin of Information for H. S.	68	1927	Kentucky, Monograph on H. S.	75
	South Brownsville, Pa., Handbook of H. S.	48	1923	Louisiana, State Course of Study for the H. S.	95
1928	South Orange and Maplewood, N. J., Sr. H. S. Course of Study.	*13	1925	Louisiana, State Course of Study and Manual of Administration.	108
	South Orange and Maplewood, N. J., Announcement of Curriculums and Requirements of Jr. and Sr. H. S.	15	1923	Lucas Co., Ohio, H. S. Course of Study.	*43
1922	Springfield, Mass., Courses of Study, The Vocational School, Sr. H. S., and Jr. Col.	34	1926	Michigan, Manual and Course of Study, Bul. No. 12.	131
1924	Springfield, Mass., Courses of Study, The Vocational School, Sr. H. S., and Jr. Col.	36	1925	Michigan, H. S. Manual and Course of Study.	150
1925	Springfield, Mass., Courses of Study, The Vocational School, Sr. H. S., and Jr. Col.	36	1927	Minnesota, H. S. Curriculum and Syllabi of H. S. Subjects, Bul. No. 1.	44
1923	Springfield, Ohio, Courses of Study and Rules and Regulations, Public Schools.	248	1925	Minnesota, Standards for Graded Elem. and H. S.	67
1928	Tacoma, Wash., Proposed Course of Study, Introductory Pamphlet.	26	1925	Missouri, Courses of Study, Jr. and Sr. H. S., Bul. No. 1.	132
1928	Tonopah, Nev., Curriculum Study.	*35	1923	Nebraska, Courses of Study for Normal Training H. S.	656
1928	Trinidad, Colo., Tentative Course of Study, H. S. Curriculum.	116	1924	Nebraska, Rural and Village H. S.	32
1927	Troy, Ohio, A Brief Statement of the Courses Offered in the H. S.	22	1926	Nebraska, Courses of Study for Normal Training H. S.	654
1927	Tulsa, Okla., Manual of Administration, Central H. S.	193	1926	Nebraska, H. S. Manual.	125
1928	Vernon, Texas, Bulletin, Public Schools.	40	1927	Nebraska, Rural and Village H. S.	67
1923	Virginia, Minn., Courses of Study, Manual No. 5.	41	1922	Nevada, H. S. Course of Study.	126
	Wauwatosa, Wis., Syllabus of Curriculum Material.	*31	1924	Nevada, Supplement to H. S. Course of Study.	23
1927	Wauwatosa, Wis., Syllabus of Curriculum Material, H. S.	*59	1924	New Hampshire, Teaching the Fundamentals in Secondary Schools.	17
1925	Westbrook, Maine, Thirty-Fourth Annual Report of the School Board.	72	1926	North Carolina, Courses of Study for the H. S., Educational Publication, No. 103.	203
1927	Wilkinsburg, Pa., Manual, Public Schools.	44	1928	North Dakota, H. S. Manual.	185
1924	Wilmington, N. C., Course of Study, New Hanover H. S.	74	1925	Ohio, H. S. Standards.	183
			1922	Oregon, Course of Study for the H. S.	141
			1927	Oregon, Course of Study for the H. S.	83
			1925	Pennsylvania, Manual for H. S.	143
			1928	Pennsylvania, Courses of Study for Continuation Schools, Bul. No. 47.	142
			1926	Phillips Co., Colo., H. S. Bulletin.	*39
			1927	Porto Rico, General Course of Study for the H. S. of Porto Rico, Bul. No. 6, Whole No. 82.	168
			1927	South Carolina, H. S. Manual.	179
			1922	South Dakota, H. S. Manual.	142
				Summit Co., Ohio, Course of Study for H. S.	*57
			1922	Tennessee, Manual for the County H. S.	43
1922	Alaska, Manual and Course of Study of the H. S.	116	1925	Texas, H. S. Course of Study.	112
1920	Arkansas, Course of Study for H. S.	*12		Utah, State H. S. Manual.	*40
1924	Arkansas, Course of Study for H. S., Part I, General Outline.	21	1923	Utah, Course of Study for the Secondary Schools, Sr. H. S.	94
1924	Canal Zone, H. S. Course of Study.	75	1923	Vermont, Manual and Courses of Study, Bulletin No. 1.	73
1926	Colorado, A Course of Study for the Public Schools, Vol. III, Outline for Sr. H. S. Courses.	337	1928	Virginia, Manual of Administration for H. S., Bul. Vol. X, No. 4.	136
				Washington, H. S. Manual, Bul. No. 22.	173

* Mimeographed or typewritten sheets.

TABLE 20.—HIGH-SCHOOL COURSES OF STUDY PUBLISHED SINCE 1920—
(Continued)

Year	Title	No. of pages	Year	Title	No. of pages
GENERAL COURSES IN STATE AND COUNTY SCHOOL SYSTEMS—Cont.			ART—Cont.		
1921	West Virginia, Course of Study for Jr. and Sr. H. S.	191	1923	Kansas, Music and Art, Course of Study for H. S., Part X.	18
1926	West Virginia, Organization, Administration, and Course of Study.	301	1927	Kenosha, Wis., Fine Arts, Sr. H. S.	*6
1927	West Virginia, Organization, Administration, and Course of Study, Jr. and Sr. H. S.	417	1922	Lansing, Mich., Course of Study in Fine Arts, Gr. 1-12.	40
1924	Wisconsin, A Manual for the H. S.	195	1928	Lansing, Mich., Course of Study, Fine and Industrial Arts, Pub. Schs.	120
	Wood Co., Ohio, Course of Study, Elem. and H. S.	52	1927	La Salle, Ill., Report on the Art Course of Study.	*13
1927	Wyoming, Course of Study.	*35	1927	Long Beach, Calif., Art Course of Study, H. S.	77
AGRICULTURE			1923	Los Angeles, Calif., Visual Art, H. S. Course of Study Mono. No. 19, June, 1923.	64
1924	Boston, Mass., Agriculture, Automobile, Electricity, Metal Trades, and Woodworking, Course of Study.	26		Lynn, Mass., Freehand Drawing.	*5
	Fresno, Calif., Course of Study in Agriculture, H. S.	*38	1926	Lynn, Mass., Course of Study in Art Education, Sr. H. S.	*31
1926	Fresno, Calif., Course of Study in Agriculture, Gr. 9-12.	*36	1926	Massachusetts, Minimum Essentials in Representation, Design, Handwork.	22
1927	Honolulu, T. H., Ventures in Progressive Education at the Kanehameha Schools—The Sugar Cane Project.	148	1923	Minnesota, Art, H. S. Curriculum and Syllabi of H. S. Subjects, Bul. No. 6.	37
1928	Honolulu, T. H., Syllabus of Courses in Agriculture.	*31	1925	Missouri, Art Syllabus, Courses of Study in Jr. and Sr. H. S., Bul. No. 5.	136
1929	Honolulu, T. H., The Soil and Its Relation to Human Welfare, A Unit in Agricultural Instruction.	*53	1926	Muncie, Ind., Art, Music, and Foreign Language Courses of Study.	28
1928	Indiana, Courses in Agriculture for H. S.	211	1926	New York State, Syllabus for Secondary Schools, Drawing.	39
1923	Los Angeles, Calif., Agriculture, H. S. Course of Study Mono. No. 21, June, 1923.	135	1926	Oakland, Calif., Drawing for Jr. and Sr. H. S. Supt.'s Bul., Course of Study Series, No. 41.	18
1924	Minnesota, Agriculture, The H. S. Curriculum and Syllabi of H. S. Subjects, Bul. No. 8.	115	1923	Pennsylvania, Course of Study in Art Education, Gr. 1-12.	39
1927	Missouri, General Agriculture, Courses of Study in Jr. and Sr. H. S., Bul. No. 8, 1927.	109	1925	Pennsylvania, Course of Study in Art Education, Gr. 1-12.	44
1928	Monroe, Ga., Handbook, Agricultural and Mechanical Schools.	23	1927	Pennsylvania, Course of Study in Art Education, Years 1-12.	47
1927	New York City, H. S. Course of Study in Agriculture.	16	1926	Rockford, Ill., Art Instruction, Tentative Course for Sr. H. S.	14
1925	Pennsylvania, Course of Study in Agriculture, Gr. 7-12.	57	1926	St. Louis, Mo., Art for the H. S., Cur. Bul. No. 35.	262
1927	Pennsylvania, Course of Study in Agriculture, Grades 7-12.	59	1928	San Francisco, Calif., Fine Arts Course of Study in H. S., Cur. Bul. No. 212.	32
1927	Pennsylvania, Vocational Agriculture in Pennsylvania.	36	1928	Tacoma, Wash., Proposed Course of Study in Art, Intermediate and H. S.	10
1926	Texas, Dairying, State Course.	30		Tulsa, Okla., Art Course, Central H. S.	*36
1926	Texas, Vocational Agriculture (General Information).	40	1923	Vermont, Courses of Study in Music and Art, Manual and Courses of Study, Part VI.	30
1927	Texas, Vocational Agriculture.	31	CHARACTER EDUCATION AND GUIDANCE		
1923	Vermont, Course of Study in Agriculture, Gr. 7-12.	37	1928	Boston, Mass., Character Education in Secondary Schools, Report of H. S. Head Masters' Assn., School Document No. 14, 1927.	156
ART			1928	Denver, Colo., A Counseling Program in the Sr. H. S.	*8
1928	Baltimore, Md., Art Course of Study, Sr. H. S.	50	1928	Denver, Colo., Preliminary Report on Home Room Activities in Grade 10B.	15
1922	Binghamton, N. Y., Art Courses for H. S.	*16	1928	Denver, Colo., Preliminary Report on Home Room Activities in Grade 10A.	*18
1924	Boston, Mass., Special Syllabus in Art for H. S.	46	1928	Denver, Colo., Preliminary Report on Home Room Activities in Grade 11B.	*15
	Charleston, W. Va., Course of Study in Art.	*22	1927	Honolulu, T. H., General Plan of a Program of Character Education.	*58
1921	Cleveland, Ohio, Course of Study, Fine and Applied Art, H. S.	7	1923	Los Angeles, Calif., Character and Conduct, H. S. Course of Study Mono. No. 16, June, 1923.	103
1922	Cleveland, Ohio, Course of Study, Fine and Applied Art, H. S.	8	1926	Los Angeles, Calif., H. S. Course of Study in Character and Conduct, Reprint of School Publication No. 60, 1923.	79
1926	Connecticut, Art Education for Elementary and Secondary Schools.	95	1927	New Hampshire, Program of Studies, Character Education.	88
1927	Dallas, Tex., Art—Fine and Applied.	14	1926	Oakland, Calif., Studies in Character Growth.	151
1925	Denver, Colo., Art Course of Study, Mono. No. 14.	236	1927	Oakland, Calif., Handbook for School Counselors.	31
1926	Detroit, Mich., Course of Study in Fine and Applied Arts, H. S.	103	1927	Pennsylvania, General Bulletin on Guidance.	127
1920	Fort Wayne, Ind., Art Course, Public Schools.	71	1926	St. Louis, Mo., Socializing-Integrating Activities for the H. S., Curriculum Bulletin No. 38.	67
1926	Fresno, Calif., Course of Study in Fine and Applied Arts.	*7	1925	Utah, Character Education, Supplement to the Utah State Course of Study for Elem. and H. S.	60
	Harrisburg, Pa., Course of Study in Art, Jr. and Sr. H. S.	*18			
1927	Hawaii, Art, High School Course of Study Series, Part 2, Section IX.	22			
	Honolulu, T. H., Course of Study in Art, Girls' Dept.	*5			

* Mimeographed or typewritten sheets.

**TABLE 20.—HIGH-SCHOOL COURSES OF STUDY PUBLISHED SINCE 1920—
(Continued)**

Year	Title	No. of pages	Year	Title	No. of pages
COMMERCIAL EDUCATION			COMMERCIAL EDUCATION—Cont.		
1928	Aberdeen, S. D., Course of Study in Commercial Education.....	25	1925	Los Angeles, Calif., H. S. Course of Study, Commercial Studies, School Publication No. 114.....	221
1925	Austin, Tex., Course of Study in Commercial Dept., H. S.....	14	1925	Los Angeles, Calif., H. S. Course of Study, Salesmanship and Advertising, School Publication No. 116.....	48
1925	Baltimore, Md., Course of Study, Commercial Education, Jr. and Sr. H. S.....	209	1926	Maine, Commercial Syllabus, Gr. 7-12.....	20
1925	Bayonne, N. J., Course of Study in Elementary Commercial Problems, Gr. 7-12.....	26	1926	Maryville, Ohio, A Course of Study in Stenography.....	*26
	Beaumont, Tex., Commercial Education, Gr. 7-12.....	*36	1925	Minnesota, H. S. Curriculum and Syllabi of H. S. Subjects, Bul. No. 7, Commercial Education.....	48
1921	Boston, Mass., Course of Study in Clerical Practice, Gr. 7-12.....	51		Muncie, Ind., Bookkeeping and Shorthand.....	*19
1923	Boston, Mass., Course of Study for the H. S. of Commerce.....	13		Muncie, Ind., H. S. Course of Study in Bookkeeping.....	*34
1924	Boston, Mass., Outline in Merchandising and Special Syllabus in Salesmanship.....	87	1926	New Castle, Pa., Syllabus of the Commercial Dept., Sr. H. S.....	18
1926	Boston, Mass., Course of Study in Clerical Practice for Grade IX.....	22	1921	New York City, Syllabus for Day and Evening H. S., Bookkeeping, First Unit.....	32
	Charleston, W. Va., Course of Study in Bookkeeping, H. S.....	*9	1922	New York City, Commercial Courses of Study for H. S., Secretarial, Accounting, Salesmanship, Foreign Trade.....	7
	Charleston, W. Va., H. S. Courses of Study in Commercial Law, Commercial Arithmetic, Penmanship, and Spelling.....	*7	1923	New York City, English and Business.....	109
	Charleston, W. Va., Penmanship Course of Study, Gr. 7-12.....	*4	1923	New York City, Syllabus for Day and Evening Schools, Accounting, Second Unit.....	27
1928	Cleveland, Ohio, Pages from a Study of Clerical Duties.....	*35	1925	New York State, Syllabus in Commercial Subjects for Four-Year H. S.....	159
1928	Cleveland, Ohio, Tentative Course of Study in Elementary Accounting, Grades 11 and 12, Bulletin No. 1, Bureau of Educational Research, July 2, 1928.....	182	1926	New York State, Syllabus in Commercial Subjects, Gr. 9-12.....	159
1925	Dallas, Tex., Commercial Subjects.....	9	1928	New York State, Syllabus in Commercial Subjects.....	160
1925	Denver, Colo., Commerce, Course of Study Monograph No. 8, Sr. H. S.....	155	1925	Oakland, Calif., Business Penmanship for Jr. and Sr. H. S., Supt.'s Bul., Course of Study Series, No. 74.....	16
1926	Dubuque, Iowa, Tentative Course of Study, Dept. of Commerce, Sr. H. S.....	*36	1928	Oakland, Calif., Commercial Law for High 11th and 12th Grades.....	110
1926	Elizabeth, N. J., Course of Study in Business Education, Jr. and Sr. H. S.....	*8	1924	Oklahoma, Course of Study for Commercial Subjects and Manual Training.....	40
	El Paso County, Colo., Bookkeeping Outline. Enid, Okla., H. S. Courses of Study in Commercial Subjects.....	*4	1926	Oregon, A Course of Study for Commercial Departments.....	15
	Fornd, Okla., H. S. Commercial Course of Study.....	*18	1925	Pennsylvania, Courses of Study in Commercial Education, Gr. 7-12.....	167
	Fort Madison, Iowa, Typewriting and Shorthand.....	*10	1925	Philadelphia, Pa., Course of Study in Bookkeeping.....	24
	Fresno, Calif., Course of Study in Commercial Dept.....	*6	1925	Philadelphia, Pa., Course of Study in Business Economics.....	8
1926	Fresno, Calif., Shorthand.....	*7	1925	Philadelphia, Pa., Course of Study in Commercial and Economic Geography.....	11
1927	Harrisburg, Pa., Course of Study in Commercial Subjects, Gr. 8-12.....	*14	1925	Philadelphia, Pa., Course of Study in Commercial Arithmetic.....	8
1928	Hawaii, H. S. Course of Study, Part Two, Section 1, Commercial Course.....	*12	1925	Philadelphia, Pa., Course of Study in Commercial Law.....	10
	Holland, Mich., H. S. Course of Study, Commercial Dept.....	86	1925	Philadelphia, Pa., Course of Study in Elements of Business.....	9
	Honolulu, T. H., Commercial Course, Girls' Dept.....	7	1925	Philadelphia, Pa., Course of Study in Jr. Business Training.....	10
1927	Houston, Tex., Course of Study in Commercial Arithmetic, Tenth Grade, Sr. H. S.....	*7	1925	Philadelphia, Pa., Course of Study in Sr. Office Practice.....	7
	Indiana, Tentative Outline of Course in Shorthand for Secondary Schools.....	*6	1925	Philadelphia, Pa., Course of Study in Shorthand.....	10
1928	Indiana, Tentative Course of Study in Beginning Typewriting for Secondary Schools, State Dept. Bul. No. 100-G-1d.....	*43	1925	Philadelphia, Pa., Course of Study in Typewriting.....	10
1928	Indiana, Tentative Course of Study in Bookkeeping for Secondary Schools, State Dept. Bul. No. 100-G-1c.....	*39		Pittsburgh, Pa., H. S. Course of Study in Shorthand.....	100
1928	Indiana, Tentative Course of Study in Junior Business Practice for Secondary Schools, State Dept. Bul. No. G-1b.....	*38	1921	Pittsburgh, Pa., Retail Selling Course in H. S.....	54
1927	Kansas, Course of Study for H. S., Part VIII, Commercial Subjects.....	*21	1927	Portland, Maine, Commercial Arithmetic, Bookkeeping, Accounting.....	20
1922	Lansing, Mich., Course of Study, Commercial Education, Gr. 7-12.....	31	1926	Princeton, N. J., Business Training, Gr. 9-12.....	*10
1925	Lansing, Mich., Course of Study, Commercial Education, Gr. 7-12.....	41		Rockford, Ill., H. S. Course of Study in Bookkeeping.....	*15
1927	La Salle, Ill., H. S. Course of Study in Shorthand and Typewriting.....	63		Rockford, Ill., H. S. Course of Study in Salesmanship.....	*3
1923	Los Angeles, Calif., Commercial Studies, H. S. Course of Study Mono. No. 28, June, 1923.....	*6		Rockford, Ill., H. S. Course of Study in Stenography and Typewriting.....	*7
		71	1926	St. Louis, Mo., Accounting for the H. S., Cur. Bul. No. 36.....	55
			1926	St. Louis, Mo., Business Organization for the H. S., Cur. Bul. No. 39.....	23
			1926	St. Louis, Mo., Commercial Law for the H. S., Cur. Bul. No. 40.....	113
			1926	St. Louis, Mo., Salesmanship and Advertising for the H. S., Cur. Bul. No. 47.....	51

* Mimeographed or typewritten sheets.

TABLE 20.—HIGH-SCHOOL COURSES OF STUDY PUBLISHED SINCE 1920—
(Continued)

Year	Title	No. of pages	Year	Title	No. of pages
COMMERCIAL EDUCATION—Cont.			ENGLISH—Cont.		
1926	St. Louis, Mo., Stenography and Typewriting for the H. S., Cur. Bul. No. 37.....	95	1924	Connecticut, A Course of Study in English Composition and Literature, Gr. 7-12.....	78
1928	San Francisco, Calif., H. S. Commercial Course of Study, Cur. Bul. No. 201.....	40	1924	Cresco, Iowa, Course of Study in English.....	*20
1928	Sioux City, Iowa, Tentative Commercial Education Outline, Jr. and Sr. H. S.....	*102	1927	Cuyahoga Co., Ohio, Jr. and Sr. H. S. Course of Study in English.....	178
1928	Tacoma, Wash., Proposed Course of Study in Commerce, Intermediate and H. S.....	19	1927	Dallas, Tex., English Courses of Study.....	79
1928	Tacoma, Wash., Proposed Course of Study in Penmanship, Intermediate and H. S.....	7	1927	Delaware, Grammar Review for Seniors.....	*9
1928	Texas, The Teaching of Commercial Subjects. Tulsa, Okla., Course of Study in Commercial Law, Central H. S.....	*96	1925	Denver, Colo., English, Sr. H. S., Course of Study Monograph No. 10.....	237
	Tulsa, Okla., Course of Study in Salesmanship and Business Efficiency, Central H. S.....	*48	1928	Denver, Colo., Outline for Business English, Sr. H. S.....	*7
	Tulsa, Okla., Office Appliances, Instructions for Students, Central H. S.....	*13	1928	Denver, Colo., Outline for Proposed Experimental Classes in English 3.....	21
	Tulsa, Okla., Outline of Course in Filing and Indexing, Central H. S.....	*5	1928	Detroit, Mich., H. S. Handbook in English.....	36
1925	Tulsa, Okla., Tentative Course of Study, Commercial Work, Jr. and Sr. H. S.....	*4	1926	Downers Grove, Ill., English Course of Study, H. S.....	*12
1928	Tulsa, Okla., Outline of Course in Typewriting, Central H. S.....	*71	1926	Dubuque, Iowa, Tentative Course of Study in English, Sr. H. S.....	*26
	Union City, Tenn., Typewriting.....	*5	1925	Elizabeth, N. J., Outline of English, Jr. and Sr. H. S.....	25
1923	Vermont, Manual and Courses of Study for H. S., Whole Bul. No. 1, 1923, Part VI, Commercial Subjects.....	*6	1925	Elizabeth, N. J., Spelling List, Gr. 7-12.....	15
1924	Virginia, State H. S. Course of Study, Commercial Training, Bul. Vol. VII, No. 1, Supplement No. 3, July, 1924.....	19	1925	El Paso Co., Colo., H. S. English.....	*14
1926	Wilmington, Del., Bookkeeping.....	29	1928	Enid, Okla., H. S. Course of Study in English.....	*12
1926	Wilmington, Del., Business English.....	*3	1928	Eureka, Kan., H. S. Collateral Reading Course of Study.....	*30
1926	Wilmington, Del., Commercial Arithmetic.....	*3	1924	Florida, The Teaching of H. S. English, Florida School Bul., Vol. 1, No. 1.....	78
1926	Wilmington, Del., Commercial Geography.....	*3	1929	Fordson, Mich., English Course of Study, Sr. H. S.....	*34
1926	Wilmington, Del., Commercial Law Course.....	*5		Fort Madison, Iowa, Course of Study, English, Sr. H. S.....	*8
1926	Wilmington, Del., Typewriting.....	*3		Fort Madison, Iowa, English.....	*19
	Winnetka, Ill., Commercial Courses of Study.....	*17	1926	Fresno, Calif., Course of Study in Sr. H. S. English.....	*62
ENGLISH				Gary, Ind., English, Gr. 7-12.....	*70
1927	Aberdeen, S. D., Course of Study in English.....	*86		Gary, Ind., H. S. Composition.....	*12
1923	Ashtabula Co., Ohio, The English Course for H. S.....	32		Gary, Ind., H. S. Literature Outline.....	*24
1925	Austin, Tex., Course of Study in H. S. English.....	62	1925	Greeley (St. Tchrs. Col.), Colo., Revised Course of Study in English, Gr. 7-12.....	*19
1924	Baltimore, Md., English Course of Study for Jr. and Sr. H. S.....	252		Hagerman, N. M., English.....	*20
	Batavia, Ill., The English Curriculum of the Batavia H. S.....	*6	1928	Hamtramck, Mich., Creative Teaching in the Field of Spelling, Creative Supervision Mono. No. 1.....	*107
1924	Bayonne, N. J., Course of Study in English, Gr. 7-12.....	141		Harrisburg, Pa., English Courses of Study, Gr. 7-12.....	*12
	Beardstown, Ill., H. S. English.....	*20	1927	Hawaii, H. S. Course of Study Series, Part Two, Section II, English.....	62
	Beaumont, Tex., English.....	*55		Helena, Ark., Outline of English, Gr. 7-12.....	*6
	Bend, Ore., Course of Study in English, H. S.....	*79	1927	Honolulu, T. H., English, Gr. 7-12.....	*19
	Biabec, Ariz., Course of Study in English, Gr. 7-12.....	*41		Houston, Tex., Requirements in Supplementary Readings in English for Grades 8-11.....	*19
1924	Boston, Mass., Course of Study in English for Cooperative Classes in Day H. S.....	24	1928	Houston, Tex., Course of Study in English, H. S.....	*34
1923	Bridgeport, Conn., Course of Study in English for H. S.....	43	1928	Houston, Tex., Unit Teaching in H. S. English.....	*26
	Bryan City, Tex., English Course of Study for the H. S.....	*6	1927	Hutchinson, Kan., English Course of Study, Jr. and Sr. H. S.....	*101
1924	California, A Suggested Outline for a Four-Year Course in English, Bulletin No. 29.....	28	1926	Iowa City, Iowa, Courses in English for Sr. H. S., Univ. of Iowa Ext. Bul. No. 140, College of Education Series No. 23.....	168
	Canandaigua, N. Y., Public Speaking.....	*6	1925	Janesville, Wis., Jr.-Sr. H. S., English Course of Study.....	274
	Casper, Wyo., Syllabus of the H. S. Course in English.....	*45	1927	Kansas, State Dept. of Education, Course of Study for H. S., Part II, English.....	109
	Centralla, Kan., Outline of Courses in H. S. English.....	*9	1927	Knoxville, Iowa, Course of Study in H. S. English.....	*32
1928	Charleston, W. Va., English Course of Study, H. S.....	*170		Lakewood, N. J., Course of Study in English, Sr. H. S.....	*10
1920	Chicago, Ill., H. S. English Syllabus.....	47	1922	Lansing, Mich., Course of Study in English, Gr. 1-12.....	107
1927	Chicago, Ill., Course of Study in English, The Drama, Bulletin No. 55.....	*37	1926	Lansing, Mich., Course of Study in English for the Public Schools.....	160
1921	Cleveland, Ohio, Course of Study in English, Jr. and Sr. H. S.....	66	1927	La Salle, Ill., H. S. Course of Study in English.....	*40
1928	Cleveland, Ohio, Courses of Study in English, Sr. H. S.....	*33	1927	Long Beach, Calif., English Course of Study, Sr. H. S.....	373
1928	Cleveland Heights, Ohio, Sr. H. S. Course of Study in English.....	*98	1923	Los Angeles, Calif., Course of Study Mono. No. 32, English for "Z" Pupils, School Publication No. 99.....	187
	Columbiana Co., Ohio, English.....	*10	1923	Los Angeles, Calif., Course of Study Mono. No. 21, Library Instruction, H. S., School Publication No. 77.....	16

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**TABLE 20.—HIGH-SCHOOL COURSES OF STUDY PUBLISHED SINCE 1920—
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Year	Title	No. of pages	Year	Title	No. of pages
ENGLISH—Cont.			ENGLISH—Cont.		
1923	Los Angeles, Calif., English, Course of Study Mono. No. 22, School Publication No. 78, H. S.	202	1923	Salt Lake City, Utah, Course of Study in English	102
1926	Los Angeles, Calif., English for Sr. H. S., Reprint of Supt.'s Bul., Course of Study Series, No. 65, August, 1923.	54	1924	San Antonio, Tex., Related English, Planing Mill.	*6
1926	Lynn, Mass., English, H. S.	*32	1925	San Antonio, Tex., Related English for Machinists.	*5
1924	Lynn, Mass., Outline, English Course	*16	1928	San Francisco, Calif., English for Special Groups, H. S., Cur. Bul. No. 211.	40
1921	Madison, Wis., Tentative Course of Study in English	*82	1928	San Francisco, Calif., H. S. Course of Study in English, Cur. Bul. No. 209.	66
1921	Maryland, The Teaching of H. S. English, Md. School Bul. Vol. III, No. 3.	148	1925	Sandpoint, Idaho, Outline of English Course.	*7
1925	Michigan, Word Study and Spelling.	29	1926	Sioux City, Iowa, Tentative English Course, Gr. 9-12.	*90
1922	Minneapolis, Minn., The H. S. Course in English.	24	1927	Sioux City, Iowa, Tentative English Course, Gr. 9-12.	*98
1923	Minneapolis, Minn., Course of Study in English.	35	1928	Somerville, Mass., Course of Study in English.	*8
1922	Minnesota, The H. S. Curriculum and Syllabi of H. S. Subjects, Bul. No. 2, H. S. English.	99	1928	Somerville, Mass., English, Gr. 7-12.	*6
1925	Missouri, English Syllabus, Gr. 7-12, Mimeo. Bul. No. 3.	*117	1928	Tacoma, Wash., Proposed Course of Study in English, Intermediate and H. S.	34
1927	Missouri, Courses of Study in Jr. and Sr. H. S., Bul. No. 9, English.	65	1928	Tacoma, Wash., Proposed Course of Study in English, Book Lists, Intermediate and H. S.	37
1928	Missouri, Courses of Study in Jr. and Sr. H. S., Bul. No. 13, Speech.	65	1926	Texas, The Teaching of H. S. English.	102
1925	Montana, Course of Study in English for Montana H. S.	88	1922	Trenton, N. J., Tentative English Syllabus, Sr. H. S.	*73
1926	Mt. Clemens, Mich., Course of Study, English Dept., H. S.	*29	1922	Trenton, N. J., Tentative Course of Study, English, Secondary Grades.	208
1925	Muncie, Ind., H. S. Course of Study in English	*29	1926	Tucson, Ariz., Course of Study Revision in English, H. S.	*26
1925	New Brunswick, N. J., Tentative Course of Study in English, Jr. and Sr. H. S.	*25	1927	Tulsa, Okla., English IV, Plans and Requirements, Central H. S.	42
1926	New Castle, Pa., Syllabus of the English Dept., Sr. H. S.	20	1927	Tulsa, Okla., English VI, Plans and Requirements, Central H. S.	53
1926	New Hampshire, Program of Studies Recommended for the Public Schools, Gr. 9-12, Part II, English.	34	1928	Tulsa, Okla., English III and College Preparatory III, Plans and Requirements, Central H. S.	30
1926	New Jersey, Course of Study in English, Part 2, Four-Year H. S.	168	1928	Tulsa, Okla., English V and College Preparatory V, Plans and Requirements, Central H. S.	21
1922	New York City, Syllabus for H. S., English.	70	1924	Vermont, English, Gr. 7-12, Bul. No. 1, Part II.	64
1923	New York State, Syllabus for Secondary Schools, English Language and Literature	30	1928	Vermont, English, H. S. Course of Study, Bul. No. 1, Part XI.	64
1924	Nutley, N. J., Course of Study in English.	15	1924	Virginia, English, State Course of Study, H. S., Bul. State Dept. of Ed., Vol. VII, No. 1, Supplement No. 1.	92
1924	Oakland, Calif., English for Sr. H. S.	53	1924	Virginia, Minn., Courses of Study, Manual No. 12, Public Speaking.	7
1923	Oklahoma, Course of Study in English.	70	1928	Washington, D. C., Course of Study in English, Sr. H. S.	*40
1927	Oregon, Elective English Courses.	21	1925	Washington, D. C., English Studies, School Document No. 31, Gr. 7-12.	35
1927	Oregon, English Course of Study for the H. S.	40	1926	Wilmington, Del., Business English.	*4
1927	Osage, Iowa, Course of Study in English.	*5	1928	Winnetka, Ill., English Dept., Curriculum and Objectives, H. S.	*8
1923	Palestine, Texas, English, Gr. 7-12.	*51	FOREIGN LANGUAGES—GENERAL		
1923	Pennsylvania, Course of Study in English, Gr. 7-12.	60	1925	Austin, Texas, H. S. Course of Study in Foreign Languages.	16
1924	Pennsylvania, Course of Study in English, Gr. 7-12, Bul. No. 40.	59	1928	Burbank, Calif., Dept. of Modern Languages—Course of Study.	*9
1927	Pennsylvania, Course of Study in English, Gr. 7-12, Bul. No. 40.	63	1922	Chicago, Ill., Modern and Ancient Languages, H. S.	18
1928	Perry, Iowa, Minimum Essentials in H. S. English for Dalls Co.	*10	1928	Cleveland Heights, Ohio, Sr. H. S. Course of Study, Modern Language.	*29
1927	Philadelphia, Pa., Syllabus in English.	*11	1925	Dallas, Texas, Foreign Languages.	14
1927	Philippine Islands, Literature for Secondary Trade Schools.	*40	1927	Dallas, Texas, Foreign Languages.	21
1927	Philippine Islands, Revised Course of Study in Literature for Academic H. S. and Normal Schools.	*40	1926	Detroit, Mich., Foreign Languages in Intermediate and H. S.	96
1927	Philippine Islands, Secondary Course in English Composition.	56	1926	Dubuque, Iowa, Tentative Course of Study, Dept. of Foreign Languages.	24
1928	Philippine Islands, Course of Study in Literature for Agri. and Rural H. S.	*37	1928	Enid, Okla., H. S. Courses of Study in Foreign Languages.	*11
1928	Philippine Islands, Revised Course of Study in Literature for Academic H. S. and Normal Schools.	54	1928	Hagerman, N. M., Foreign Languages.	*9
1927	Pittsburgh, Pa., H. S. Course of Study in English, Gr. 10-12.	176	1927	Harrisburg, Pa., Courses of Study in Foreign Languages, Gr. 8-12.	*10
1927	Portland, Me., English Course of Study.	18	1928	Hawaii, Foreign Languages, H. S. Course of Study Series, Part 2, Section III.	30
1922	Portland, Ore., Course of Study in English for H. S.	31	1928	Indiana, Tentative Course of Study in Foreign Languages for Secondary Schools	432
1923	Porto Rico, Course of Study in English.	18			
1926	Princeton, N. J., English.	*20			
1926	Quannah, Tex., H. S. English Course.	*11			
1926	St. Louis, Mo., English for the H. S., Cur. Bul. No. 22.	*8			
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* Mimeographed or typewritten sheets.

**TABLE 20.—HIGH-SCHOOL COURSES OF STUDY PUBLISHED SINCE 1920—
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Year	Title	No. of pages	Year	Title	No. of pages
FOREIGN LANGUAGES—GENERAL— Cont.			FOREIGN LANGUAGES—FRENCH—Cont.		
1924	Johnstown, Pa., H. S. Course of Study in Modern Languages, French and Spanish	*11	1928	Fordson, Mich., Course of Study in French, Gr. 9-12.....	*10
1926	Kansas, Foreign Languages, Course of Study for the H. S.....	38	1924	Fresno, Calif., Course of Study in French, Gr. 7-12.....	*8
1922	Lansing, Mich., Foreign Languages, Gr. 7-12.	47	1926	Fresno, Calif., Course of Study in French, Gr. 7-12.....	*6
1927	Lansing, Mich., Courses of Study in Foreign Languages, Gr. 8-12.....	45		La Salle, Ill., Report on the French Course of Study.....	*5
1927	Los Angeles, Calif., A Jr. and Sr. H. S. Course of Study, Modern Foreign Languages, Bul. No. 1, Sept., 1927.....	*5		Lynn, Mass., French.....	*6
1926	Lynn, Mass., Foreign Languages.....	*8	1924	Madison, Iowa, French.....	*8
1924	Madison, Wis., Tentative Course of Study in Modern Languages.....	*19		Maine, The French Syllabus, Gr. 7-12.....	*17
1926	Muncie, Ind., Art, Music, and Foreign Lan- guage Courses of Study.....	28	1921	Maryland, The Teaching of H. S. French.....	6
1926	New Castle, Pa., Syllabus of the Math. Dept., Spanish Dept., and French Dept., Sr. H. S.....	11	1921	Maryland, The Teaching of H. S. French, Md. School Bul. Vol. III, No. 6, Sept., 1921.....	34
1924	New Jersey, The Teaching of Foreign Lan- guages in the H. S., Education Bul. Vol. II, No. 4, December, 1924.....	158	1926	New Castle, Pa., Syllabus of the French Dept., Sr. H. S.....	11
1927	New York City, Informational Syllabus and Reading Lists in Modern Languages.....	62	1924	Newton, Mass., H. S. French Course.....	*7
	New York State Modern Foreign Language Syllabus.....	9	1923	Oakland, Calif., French for Jr. and Sr. H. S.....	19
1928	New York State, Tentative Syllabus in Ancient Languages—Latin and Greek.....	94	1924	Oakland, Calif., French in the Jr. and Sr. H. S.	28
1924	Oklahoma, Course of Study for Foreign Lan- guages, Music, and Public Speaking.....	32	1923	Philadelphia, Pa., Course of Study in French.	20
1923	Pennsylvania, Courses of Study in Foreign Languages.....	80	1926	Princeton, N. J., French, Gr. 9-12.....	*9
1925	Pennsylvania, Courses of Study in Foreign Languages.....	80		Rockford, Ill., Outline of the French Course of Study.....	*17
1927	Pennsylvania, Courses of Study in Foreign Languages.....	80	1926	St. Louis, Mo., French for Grades 9-12, Cur. Bul. 45.....	55
1926	Porto Rico, Course of Study in Latin and French.....	*6	1925	Somerville, Mass., Course of Study in French, Gr. 7-12.....	*6
1926	Richmond, Ind., Course of Study in Foreign Languages, Gr. 7-12.....	*15	FOREIGN LANGUAGES—GERMAN		
1926	Richmond, Ind., Syllabus, Dept. of Foreign Language.....	*35	1923	Philadelphia, Pa., Course of Study in German.	20
1928	San Francisco, Calif., Course of Study in Foreign Languages, H. S., Cur. Bul. No. 202.....	79	1926	St. Louis, Mo., German for Gr. 9-12, Cur. Bul. 46.....	59
1928	Sioux City, Iowa, Tentative Foreign Lan- guage Curriculum, Jr. and Sr. H. S.....	75	FOREIGN LANGUAGES—LATIN		
1928	Tacoma, Wash., Proposed Course of Study in Foreign Language, Intermediate and H. S.....	20	1924	Baltimore, Md., Latin Course of Study for Sr. and Jr. H. S.....	58
1927	Texas, The Teaching of Spanish, German, and French.....	81	1928	Burbank, Calif., Course of Study in Latin.....	*7
1925	Trenton, N. J., Tentative Course of Study, Modern Languages, Jr. and Sr. H. S., June, 1925.....	*26	1925	Cleveland Heights, Ohio, Jr.-Sr. H. S., Latin Course of Study.....	32
1923	Vermont, Courses of Study in Modern Languages, Gr. 7-12.....	77	1925	Denver, Colo., Tentative Course of Study in Latin.....	*77
1928	Vermont, Courses of Study in Latin and Greek, Manual and Courses of Study, Part IX.....	47	1928	Denver, Colo., Latin, Course of Study Mono. No. 26.....	72
1928	Vermont, Courses of Study in Modern Languages, Part VIII of Manual and Courses of Study.....	73	1928	Fordson, Mich., Outline of Course of Study in Latin.....	8
1924	Virginia, Foreign Languages, H. S. Course of Study, Bul. St. Bd. of Ed., Vol. VII, No. 1, Supplement No. 7, July, 1924.....	35	1926	Fort Madison, Iowa, Latin.....	*5
1928	Virginia, Foreign Languages, H. S. Course of Study, Reprint of Bul., St. Bd. of Ed., Vol. VII, No. 1, Supplement No. 7, July, 1924.....	35	1924	Fresno, Calif., Course of Study in Latin.....	*6
1928	Winnetka, Ill., The Objectives and Courses of Study of the Foreign Language Dept. Wyoming, Modern Languages.....	*16	1924	Illinois, Latin in H. S., Univ. of Ill. Bul., Vol. XXII, No. 12, Nov. 17, 1924.....	28
FOREIGN LANGUAGES—FRENCH			1925	Lansing, Mich., Course of Study in Latin, Gr. 8-12.....	*24
1925	Baltimore, Md., French Course of Study, Jr. and Sr. H. S.....	61	1927	La Salle, Ill., H. S. Course of Study in Latin.....	*8
1924	Beaumont, Texas, French.....	*19	1923	Los Angeles, Calif., H. S. Latin, Course of Study Mono. No. 13, June, 1923.....	48
1928	Boston, Mass., Course of Study in French.....	25	1924	Madison, Wis., Tentative Course of Study in Latin.....	*12
1928	Charleston, W. Va., Sr. H. S. Course of Study for the French Dept.....	*21	1924	Maine, Summary of the Latin Syllabus.....	*8
1925	Denver, Colo., French—Course of Study Mono. No. 15.....	276	1921	Maryland, The Teaching of H. S. Latin, Md. School Bul. Vol. III, No. 5, Sept., 1921.....	32
			1926	New Castle, Pa., Syllabus of the Latin Dept., Sr. H. S.....	16
			1924	Newton, Mass., H. S. Course of Study in Latin.....	*5
			1927	New York State, A Survey of Achievement in First Half Year of Latin.....	48
			1928	New York State, A Survey of Achievement in Second Half of First Year Latin.....	24
			1923	Philadelphia, Pa., Course of Study in Latin.....	19
				Pittsburgh, Pa., H. S. Course of Study in Latin (Supplement).....	35
			1927	Pittsburgh, Pa., H. S. Course of Study in Latin, Jr.-Sr. H. S.....	58
			1926	Princeton, N. J., Latin, Gr. 8-12.....	*8
				Rockford, Ill., Course of Study for Latin I and II.....	*5
				Rockford, Ill., Course of Study for Latin III and IV.....	*4
			1926	St. Louis, Mo., Latin for Grades 9-12, Cur. Bul. No. 43.....	61

* Mimeographed or typewritten sheets.

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Year	Title	No. of pages	Year	Title	No. of pages
FOREIGN LANGUAGES—LATIN—Cont.			HEALTH AND PHYSICAL EDUCATION—Cont.		
1928	San Francisco, Calif., H. S. Course of Study in Latin, Gr. 9-12, Cur. Bul. No. 204...	27	1924	Massachusetts, Physical Education in the Public Schools.....	64
	Seattle, Wash., Outline for Courses in Latin.....	*9	1925	Missouri, Physical Education, Bul. No. 2, Gr. 7-12.....	212
1927	Tennessee, Course of Study in Latin.....	*8	1925	Missouri, Physical Education Syllabus, Part II.....	73
	Texas, The Teaching of Latin.....	81	1927	Missouri, Physical Education, Courses of Study in Jr. and Sr. H. S., Part I, Revised Edition.....	238
	West Virginia, Tentative Outline for a Course of Study in Latin.....	7	1927	Nebraska, Courses of Study for Normal Training H. S., Bul. E., Physiology and Hygiene.....	68
1926	Wilmington, Del., Latin Course of Study....	*6	1926	New Castle, Pa., Syllabus of the Physical Education Dept.....	8
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1927	Austin, Texas, H. S. Course of Study in Spanish.....	*6	1924	New Jersey, Physical Training Bul. for H. S., Division of School Inspection No. 28.....	47
	Beaumont, Texas, Spanish.....	*14	1924	New Jersey, Suggestions for a Health Program, Gr. 7-12.....	118
1924	Boston, Mass., Courses of Study in Spanish, Gr. 7-12.....	26	1928	Newton, Iowa, Boys' Physical Education Course of Study, Gr. 7-12.....	*47
1928	Denver, Colo., Course of Study in Spanish, Sr. H. S.....	37	1926	North Carolina, Physical Education in the H. S., Educational Publication No. 104, Division of School Inspection No. 28.....	58
1928	Fordson, Mich., Outline of Course of Study in Spanish, Gr. 9-12.....	*8	1925	Oakland, Calif., Physical Education for Sr. H. S., Supt.'s Bul., Course of Study Series, No. 72.....	145
1923	Fresno, Calif., Course of Study in Spanish, Gr. 7-12.....	*5	1928	Oakland, Calif., Hygiene for Boys in Sr. H. S., Supt.'s Bul. No. 118.....	*49
1926	Fresno, Calif., Course of Study in Spanish, Gr. 7-12.....	*11	1928	Oakland, Calif., Hygiene for Girls in Sr. H. S., Supt.'s Bul. No. 117.....	*38
1925	Lansing, Mich., Spanish.....	*7	1923	Pennsylvania, Course of Study in School Health, Hygiene and Physiology, Gr. 9-12.....	148
1926	New Castle, Pa., Syllabus of the Spanish Dept., Sr. H. S.....	11	1923	Pennsylvania, Course of Study in School Health, Physical Education, Gr. 9-12.....	140
1923	Oakland, Calif., Spanish for Jr. and Sr. H. S.	16	1925	Pennsylvania, Course of Study in Physical Education.....	168
1926	Oakland, Calif., Spanish for Jr. and Sr. H. S.	30	1927	Pennsylvania, Course of Study in School Health, Hygiene and Physiology, Gr. 9-12.....	149
1923	Philadelphia, Pa., Course of Study in Spanish.	19	1927	Philippine Islands, Physiology, Hygiene, and Sanitation.....	*14
	Rockford, Ill., First Year Spanish.....	*3	1926	Princeton, N. J., Physical Education.....	*5
1926	St. Louis, Mo., Spanish for Grades 9-12, Cur. Bul. 44.....	63	1926	Rockford, Ill., Outline of Course of Study in Physiology.....	*5
	Union City, Tenn., Spanish and French.....	*8	1926	St. Louis, Mo., Health for the H. S., Cur. Bul. No. 33.....	89
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1927	Alabama, Tentative Course of Study in Physical Education, Jr. and Sr. H. S.....	53	1927	Springfield, Mass., Physical Education for Boys, Gr. 7-12.....	*34
1920	Boston, Mass., A Course of Study in Physical Education, Gr. 9-12.....	34	1927	Springfield, Mass., Physical Education for Girls, Gr. 7-12.....	*57
1924	Boston, Mass., Physical Education, Jr. and Sr. H. S., Bul. 147, No. 1.....	64	1928	Tacoma, Wash., Proposed Course of Study in Physical Education and Health, Intermediate and H. S.....	41
	Burbank, Calif., Physical Education.....	*13	1924	Texas, The Teaching of Physiology.....	19
	Charleston, W. Va., Health and Physical Education.....	17	1924	Virginia, Physical Education, Gr. 8-11.....	112
	Charleston, W. Va., H. S. Course of Study in Physical Education for Girls.....	*11	1926	Virginia, State Course of Study, Physical Education, H. S.....	113
	Chicago, Ill., Tentative Course of Study in Physical Education for Girls.....	*120	1926	Winnipeg, Ill., Physiology and Hygiene for Boys, H. S.....	*9
1925	Dallas, Texas, Physical Training and R. O. T. C.....	10	1924	Wisconsin, Individual Athletic Activities.....	86
1927	Dallas, Texas, Physical Training and R. O. T. C.....	10	HOME ECONOMICS		
1927	Denver, Colo., Physical Education Course of Study for Sr. H. S.....	*120		Aberdeen, S. D., Course of Study in Household Arts.....	*69
1926	Detroit, Mich., Athletic Manual, H. S.....	54		Alabama, Course of Study in General Home Economics.....	*10
1928	Detroit, Mich., Athletic Manual, H. S.....	96	1922	Alabama, Manual of Home-Making Education.....	77
1928	Detroit, Mich., Tentative Handbook in Health Education for Boys, H. S.....	117	1927	Alabama, Manual of Home-Making Education for H. S.....	46
	Dothan, Ala., A Course of Study in Physical Education, Gr. 7-12.....	*21	1924	Arkansas, Course of Study in Home Economics.....	162
	Enid, Okla., Course of Study in Health.....	*8	1927	Ashtabula Co., Ohio, Outline for Home Economics, H. S.....	*10
1926	Florida, Health and Physical Education.....	144	1925	Austin, Texas, Course of Study in Home Economics, H. S.....	62
	Fordson, Mich., Course of Study in Health, Jr. and Sr. H. S.....	*12	1925	Baltimore, Md., Home Economics Course of Study for Elem. and H. S.....	168
	Harrisburg, Pa., Hygiene and Physical Education, Gr. 7-12.....	*16			
	Honolulu, T. H., Health Education.....	*19			
1928	Indiana, Tentative Course of Study in Health Education for Secondary Schools.....	*81			
1927	Kenosha, Wis., Physical Education for Boys.....	30			
1922	Lansing, Mich., Course of Study in Physical Education and Hygiene, Gr. 1-12.....	107			
1927	La Salle, Ill., Reports on Courses of Study in Physiology, Gymnasium, Physical Education, and Hygiene.....	*7			
1923	Los Angeles, Calif., Corrective Physical Education, H. S. Course of Study, Mono. No. 21, June, 1923.....	14			
1924	Madison, Wis., Tentative Course of Study in Physical Education.....	*13			
1928	Maine, Course of Study in Health and Physical Education, Elem. and H. S.....	153			

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	Beaumont, Texas, Course of Study in Home Economics, Gr. 7-12.....	*18	1925	Montclair, N. J., Tentative Course of Study in Household Arts.....	*10
	Burbank, Calif., Home Economics.....	*8		Muncie, Ind., Tentative Outline of Elementary Home Economics.....	*58
	Charleston, W. Va., Home Economics Course of Study, H. S. No. 1, Gr. 7-12.....	*53	1925	New Brunswick, N. J., Tentative Course of Study in Home Economics, Jr. and Sr. H. S.	*12
1925	Dallas, Texas, Home Economics Course of Study.....	7		New Hampshire, Program of Studies Recommended for the Public Schools, Gr. 9-12, Part VI, Home Economics.....	34
1927	Dallas, Texas, Home Economics Course of Study.....	16	1926	New York City, Course of Study in Food Study, Household Management, and Laundry, H. S.	59
1925	Denver, Colo., Home Economics, Course of Study Mono. No. 13.....	139	1921	New York City, Syllabus on Clothing and Textiles.....	55
1925	Denver, Colo., Home Economics, Res. Mono. No. 1, Gr. 7-12.....	71	1925	New York State, Syllabus for Homemaking and Home Economics, Univ. of the State of N. Y. Bul. No. 805.....	77
1926	Dubuque, Iowa, Tentative Course of Study, Dept. of Home Economics, Sr. H. S.	*26	1924	Oakland, Calif., Home Economics, Clothing, Jr. and Sr. H. S.	23
1924	Duluth, Minn., Course of Study in Elementary Dietetics and Meal Planning, Gr. 10.....	18	1925	Oakland, Calif., Home Economics, Foods, Jr. and Sr. H. S.	41
1925	Duluth, Minn., Course of Study in Advanced Dressmaking, Gr. 10.....	*9	1925	Ohio, Course of Study for H. S. in Vocational Home Economics Education.....	110
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	Holland, Mich., Home Economics Courses of Study, Jr. and Sr. H. S.	8	1923	Porto Rico, Course of Study in Home Economics.....	12
	Holland, Mich., Homecraft Lessons, H. S.	20		Rockford, Ill., Tentative Course of Study in Household Arts.....	*36
	Honolulu, T. H., Home Economics, Girls' Dept.....	*22	1926	St. Louis, Mo., Home Economics for the H. S. Cur. Bul. No. 41.....	117
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	Indiana, Home Economics, State Course of Study for Secondary Schools.....	51	1928	San Francisco, Calif., Household Arts, H. S. Cur. Bul. No. 205.....	47
1928	Kanana, Course of Study for H. S., Part IX, Home Economics.....	123		Somerville, Mass., Household Arts Course, Gr. 7-12.....	*7
1922	Lansing, Mich., Course of Study in Home Economics, Gr. 5-12.....	58	1926	Somerville, Mass., Course of Study in Cookery Gr. 7-12.....	*9
1927	Lansing, Mich., Courses of Study in Home Economics, Gr. 6-12.....	159	1928	South Bend, Ind., Household Arts Course of Study for Jr. and Sr. H. S.	140
1927	La Salle, Ill., Report on the Course of Study, Domestic Science, H. S.	*5	1925	Tallahassee, Fla., Tenth-Grade Home Economics.....	*6
1923	Los Angeles, Calif., Home Economics, Course of Study Mono. No. 14, School Publication No. 54.....	120		Tennessee, A Two-Year Course of Study in Home Economics for County H. S.	41
	Lynn, Mass., Household Arts, Gr. 7-12.....	*40	1926	Tennessee, Course of Study in Home Economics.....	45
1925	Madison, Wis., Tentative Course of Study in Cookery.....	*12	1923	Texas, Applied Design and Clothing.....	40
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	Maryville, Ohio, A Course of Study in Dietetics.....	*21	1923	Texas, Household Management.....	21
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1929	Massachusetts, Basic Courses of Study in Home Economics for Sr. H. S. Part I, Food in Relation to the Health and Happiness of the Home.....	*41	1923	Texas, Vocational Home Economics in Texas.....	79
1929	Massachusetts, Basic Courses of Study in Home Economics for Sr. H. S. Part II, Clothing Education.....	*36	1924	Texas, Laboratory Manual of Home Nursing.....	32
1929	Massachusetts, Basic Courses of Study in Home Economics for Sr. H. S. Part III, Home Management.....	*13	1925	Texas, Home Nursing.....	20
1929	Massachusetts, Basic Courses of Study in Home Economics for Sr. H. S. Part IV, Nutrition.....	*11	1926	Texas, Equipment for Teaching Homemaking.....	87
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1926	Missouri, Courses of Study in Jr. and Sr. H. S., Home Economics Syllabus, Bul. No. 6.....	137	1927	Texas, Home Economics Education.....	41
1925	Monessen, Pa., Vocational Household Arts.....	*8		Tulsa, Okla., Food Manual, Home Economics Dept., Sr. H. S.	6
			1923	Vermont, Course of Study in Home Economics, Gr. 7-12.....	54
			1928	Vermont, Manual and Courses of Study for H. S., Whole Bul. No. 1, Part V, Home Economics.....	85
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			1926	West Allis, Wis., Suggestive and Experimental Curriculum in Home Economics, Clothing, Jr. and Sr. H. S.	*22
				Winnetka, Ill., Outline of Courses in Dept. of Home Economics, H. S.	*19
			1920	Wisconsin, Suggestions for Teaching Homemaking in the Grades and H. S.	39
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* Mimeographed or typewritten sheets.

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1928	Bayonne, N. J., Course, Vocational School.....	12	1925	Erie, Pa., Details of Unit Trade Course in Auto Mechanics.....	*13
	Beaumont, Texas, General Industrial Training.....	*7	1925	Erie, Pa., Details of Unit Trade Course in Cabinet Making.....	*9
1923	Berkeley, Calif., Industrial Education, Course of Study Mono. No. 8.....	143	1925	Erie, Pa., Machine Shop Work.....	*2
1923	Berkeley, Calif., Vocational and Non-Vocational Industrial Education.....	58	1925	Erie, Pa., Pattern-making.....	*34
1924	Boston, Mass., Agriculture, Automobile, Electricity, Metal Trades, and Woodworking.....	26	1925	Erie, Pa., Tailors' Unit Trade Course.....	*5
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	Burbank, Calif., Auto Mechanics.....	*10	1925	Erie, Pa., Unit Trade Course in Plumbing.....	*6
	Burbank, Calif., Drafting.....	*7	1922	Florida, State Plan for Vocational Education.....	38
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	California, A Study of Vocational Conditions in the City of Fresno.....	260	1927	Fort Madison, Iowa, Industrial Arts.....	*11
1927	California, The California Plan of Vocational Education, Bul. No. C-1, Vocational Education and the Secondary School.....	20		Fresno, Calif., Smith-Hughes Shop Courses.....	*28
1924	Columbus, Ohio, Course of Study in Mechanical Drawing.....	23		Hamtramck, Mich., Auto Mechanics.....	*5
1923	Connecticut, Suggestions for a Program in Educational Guidance, Gr. 9-12.....	41		Hamtramck, Mich., Machine Shop.....	*6
1927	Connecticut, Trade and Vocational Education, Voc. Bul. No. 1, Series 1927-28.....	62		Hamtramck, Mich., Machine Shop.....	*8
1925	Dallas, Texas, Manual Training.....	16		Hamtramck, Mich., Printing.....	*34
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1928	Denver, Colo., Industrial Arts, Jr. and Sr. H. S. Res. Mono. No. 4.....	82		Hamtramck, Mich., Trade Auto Mechanics, Bulletin No. 10.....	*18
1921	Detroit, Mich., Standards and Conventions for Mech. Drawing, H. S.....	44		Harrisburg, Pa., Practical Arts Curriculum, Auto Mechanics.....	*8
1922	Detroit, Mich., Course of Study in Automobile Mechanics.....	20		Harrisburg, Pa., Practical Arts Curriculum, Cabinet Making.....	*9
1922	Detroit, Mich., Course of Study in Electrical Work for Intermediate and H. S.....	12		Harrisburg, Pa., Practical Arts Curriculum, Drafting.....	*7
1922	Detroit, Mich., Course of Study in Machine Shop Practice.....	23		Harrisburg, Pa., Practical Arts Curriculum, Electricity.....	*9
1922	Detroit, Mich., Mechanical Drawing, Lesson Sheets Three, for H. S.....	26		Harrisburg, Pa., Practical Arts Curriculum, Foundry.....	*7
1923	Detroit, Mich., Mechanical Drawing, Lesson Sheets Two, for Intermediate and H. S.....	24	1928	Harrisburg, Pa., Practical Arts Curriculum, Machine Shop.....	*9
1923	Detroit, Mich., Mechanical Drawing, Lesson Sheets Three.....	31		Harrisburg, Pa., Practical Arts Curriculum, Patternmaking.....	*8
1923	Detroit, Mich., Mechanical Drawing, Lesson Sheets Four.....	41		Harrisburg, Pa., Practical Arts Curriculum, Printing.....	*8
1923	Detroit, Mich., Mechanical Drawing, Lesson Sheets Five.....	24		Holland, Mich., Course of Study in Printing, Sr. H. S.....	2
1924	Detroit, Mich., Architectural Standards and Conventions.....	40		Honolulu, T. H., Electricity, Printing Trades, and Intro. to Auto Mech.....	*19
1924	Detroit, Mich., Auto Mechanics Lesson Sheets, A Method for Teaching the Detroit Course.....	104	1922	Houston, Texas, Manual Training and Voc. Ed. for Evening School.....	*38
1924	Detroit, Mich., Mechanical Drawing, Lesson Sheets One, for Intermediate and H. S.....	51	1927	Kansas, Plans for Vocational Education in Kansas, Bul. No. 7.....	46
1925	Detroit, Mich., Mechanical Drawing, Lesson Sheets One, for Intermediate and H. S.....	51		La Crosse, Wis., Educational Guidance, Gr. 8-12.....	*39
1925	Detroit, Mich., Mechanical Drawing, Standards and Conventions.....	44	1922	Lansing, Mich., Course of Study in Industrial Education, Gr. 10-12.....	36
1925	Detroit, Mich., Specifications for Architectural Drawing, Courses I, II, III, and IV.....	59	1924	Lansing, Mich., Course of Study in Industrial Education Gr. 10-12.....	38
1926	Detroit, Mich., Mechanical Drawing, Standards and Conventions.....	44	1927	Lansing, Mich., Course of Study in Industrial Education, Gr. 10-12.....	72
1927	Detroit, Mich., Mechanical Drawing, Lesson Sheets Three, for H. S.....	31	1927	La Salle, Ill., Courses of Study in Mechanical Drawing, Architectural Drawing, and Bench Work.....	*8
1924	Duluth, Minn., Course of Study for Foundry, Gr. 10.....	11		Little Rock, Ark., Sheet Metal Drafting.....	11
1924	Duluth, Minn., Course of Study for Machine Shop, Gr. 11.....	10	1923	Los Angeles, Calif., Auto Electrics, H. S., Course of Study Monographs, No. 15, School Publication No. 68.....	61
1924	Duluth, Minn., Course of Study for Mechanical Drawing, Gr. 11, 12.....	22	1923	Los Angeles, Calif., Cabinet Making, Course of Study Monographs, No. 29, School Publication No. 84.....	52
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1925	Duluth, Minn., Course of Study for Auto Mechanics, Gr. 12.....	14	1923	Los Angeles, Calif., Machine Shop Practice, H. S., Course of Study Monographs, No. 24, School Publication No. 79.....	128
1925	Duluth, Minn., Course of Study for Electricity, Gr. 10, 11.....	25	1923	Los Angeles, Calif., Printing, H. S., Course of Study Monographs, No. 25, School Publication No. 64.....	106
	Eau Claire, Wis., Electricity, as Offered at the Eau Claire H. S.....	*15	1926	Los Angeles, Calif., Course of Study in Related Drawing for Vocational Auto Shop Students, School Publication No. 135.....	16

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	Lynn, Mass., Industrial Arts.....	*45	1927	Pennsylvania, All-Day Vocational Trade or Industrial Schools and Depts., Bul. 7....	101
	Maine, Vocational Education in Maine.....	42	1927	Pennsylvania, Part-Time Cooperative Industrial Education, Bul. 1.....	58
1925	Menominee, Mich., Manual Education Course of Study, Gr. 7-12.....	*47	1924	Porto Rico, Mechanical Drawing.....	*32
1924	Menominee, Wis. (Stout Institute), Pattern-making, Bul. No. 111.....	25		Rockford, Ill., Course of Study in Automotive Shop.....	*16
1922	Michigan, Outline Course in Building Construction.....	8		Rockford, Ill., Course of Study II, Mathematics for Building Trades.....	*2
1922	Michigan, Outline Elementary Course in Electrical Applications in the Home....	8		Rockford, Ill., Courses for Machinists, Half-Time Cooperative Classes.....	*5
1923	Michigan, Outline Course in Elementary Auto Mechanics.....	16	1926	St. Louis, Mo., Manual Arts for the H. S., Cur. Bul. No. 42.....	221
1923	Michigan, Outline Course in Household Mechanics.....	8	1924	St. Paul, Minn., The Manual Training Dept. San Antonio, Texas, Machine Drawing.....	53
1924	Michigan, Outline Course in Elementary Woodwork.....	8	1925	San Antonio, Texas, Mill Woodwork.....	*10
1925	Michigan, Outline Course in Elementary Mechanical Drawing.....	8	1928	San Antonio, Texas, Mill Woodwork.....	*11
1923	Minnesota, Suggestive Syllabus in General Industrial Training, Bul. No. 9.....	47		San Francisco, Calif., Industrial Arts, H. S., Cur. Bul. No. 206.....	27
1922	Missouri, Course in Machine Shop Mathematics.....	*9		Scotia, N. Y., Vocational Guidance Syllabus, Gr. 7-12.....	*23
1922	Missouri, Information Relating to Unit-Trade Classes in Auto-Mechanics' Trades.....	*5	1928	Sioux City, Iowa, Tentative Curriculums for Manual Education Shops, Jr. and Sr. H. S.....	*102
1922	Missouri, Outline of Plans for Vocational Education.....	47	1922	Springfield, Mass., Courses of Study for the Vocational School and the Jr. Col.....	34
1926	Missouri, Courses of Study in Jr. and Sr. H. S., Bul. No. 4, Industrial Subjects....	50	1928	Tacoma, Wash., Proposed Course of Study in Practical Arts, Boys, Intermediate and H. S.....	26
	Muncie, Ind., Manual Arts and Vocational Courses.....	*42	1928	Tacoma, Wash., Proposed Course of Study in Practical Arts, Girls, Intermediate and H. S.....	21
1925	New York State, The Unit Instruction Sheet, Vocational Education.....	*10	1922	Texas, Trade and Industrial Education.....	112
1922	Oakland, Calif., Auto Repair in the Vocational Continuation School.....	5	1923	Texas, Manual Training and Mechanical Drawing in Accredited H. S.....	77
1922	Oakland, Calif., Cabinet Work for Continuation Classes.....	5	1925	Texas, Industrial Training in Rural Schools.....	31
1922	Oakland, Calif., Drawing for Continuation Classes.....	6	1926	Texas, Mechanical Drawing in Accredited Schools.....	37
1922	Oakland, Calif., Electrical Work for Continuation Classes.....	6	1926	Texas, Vocational Education in Texas.....	39
1922	Oakland, Calif., Forging for Continuation Classes.....	6	1927	Texas, Industrial Training in Rural Schools.....	35
1922	Oakland, Calif., Machine Shop for Continuation Classes.....	6	1927	Texas, State Plans for Vocational Education.....	86
1922	Oakland, Calif., Machine Shop for Smith-Hughes Classes, Supt.'s Bul. No. 29....	7	1927	Texas, Trade and Industrial Education.....	45
1922	Oakland, Calif., Oxygen-Acetylene Welding and Cutting for Continuation Classes....	3	1924	Toledo, Ohio, Course of Study in Industrial Arts, Gr. 7-12.....	*58
1922	Oakland, Calif., Pattern Making and Cabinet Work, Supt.'s Bul. No. 9.....	7	1924	Trenton, N. J., Course of Study in Manual Arts, Gr. 7-12.....	*56
1922	Oakland, Calif., Related Drawing for Smith-Hughes Classes, Supt.'s Bul. No. 28....	7	1926	Tucson, Ariz., Vocations for Freshman Boys.....	*11
1922	Oakland, California, Shop Mathematics and Elementary Mechanics for Continuation Classes.....	5	1926	Tucson, Ariz., Vocations for Freshman Girls.....	*10
1923	Oakland, Calif., Mechanical Drawing for H. S., Supt.'s Bul. No. 50.....	*18		Virginia, Minn., Automobile Repairing, Course of Study Manual No. 20.....	36
1928	Oakland, Calif., A Course of Study in Wood Pattern Making for H. S., Smith-Hughes Type.....	*18	1921	Waterbury, Conn., Survey of Vocational Courses.....	27
1928	Oakland, Calif., Machine Shop for Smith-Hughes Classes.....	*26		Winnetka, Ill., Course of Study, Dept. of Manual Education.....	*9
1928	Oakland, Calif., Printing for Classes of Vocational Education Type, Course of Study Series No. 115.....	78	MATHEMATICS		
1922	Ohio, The Teaching of Mechanical Drawing in the Public Schools, Colleges, and Universities of Ohio.....	47	1925	Austin, Texas, H. S. Course of Study in Mathematics.....	23
	Paterson, N. J., The Cooperative Apprentice Course, Eastside H. S.....	8	1924	Baltimore, Md., Mathematics Course of Study for Sr. and Jr. H. S.....	169
1926	Paterson, N. J., Bulletin of the Paterson Vocational School, Day and Evening Classes.....	10	1924	Bayonne, N. J., Course of Study in Mathematics, Gr. 7-12.....	54
1928	Paterson, N. J., Bulletin of Classes, Evening Vocational School.....	*10		Beaumont, Texas, Mathematics, Gr. 7-12....	*17
1924	Pennsylvania, Administration and Courses of Study, All-Day Vocational Trade or Industrial Schools and Depts., Bul. No. 7	*89	1925	Bend, Ore., Course in Algebra I, II, and III.....	*3
				Bend, Ore., Course in Plane Geometry.....	*3
			1925	Boston, Mass., Course of Study in Mathematics.....	19
			1927	Boston, Mass., Course of Study in Mathematics for the Industrial Curriculum in H. S.....	22
				Charleston, W. Va., H. S. Course of Study, Mathematics.....	*16
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			1928	Cleveland Heights, Ohio, Mathematics, Sr. H. S. Course of Study.....	108
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1925	Denver, Colo., Mathematics Course of Study.	*51	1926	Princeton, N. J., Mathematics.	*5
1927	Denver, Colo., Mathematics, Course of Study Mono. No. 25.	48	1926	Richmond, Ind., Mathematics Course of Study, Gr. 7-12.	*21
1928	Denver, Colo., Special Report on Geometry, Sr. H. S.	*20		Rockford, Ill., Mathematics in Half-Time Cooperative Classes.	*11
	Enid, Okla., H. S. Courses of Study in Mathematics.	*10		Rockford, Ill., Outline of the Course of Study in Algebra.	*23
1924	Florida, The Teaching of H. S. Mathematics, Florida School Bul. Vol. I, No. 2, Sept., 1924.	38	1926	St. Louis, Mo., Mathematics for the H. S., Cur. Bul. No. 23.	140
1926	Fresno, Calif., Course of Study in Mathematics, Gr. 7-12.	99	1926	St. Louis, Mo., Sr. Mathematics for the H. S., Cur. Bul. No. 24.	63
	Hagerman, N. M., Mathematics Course of Study, Mono. No. 4.	*11	1924	San Antonio, Texas, Mathematics Related to Mill Trade.	*4
	Harriburg, Pa., Course of Study in Mathematics, Gr. 7-12.	*32	1928	San Francisco, Calif., Mathematics Course of Study, H. S.	32
1927	Hawaii, Mathematics, H. S. Course of Study Series, Part Two, Section IV.	42	1922	Sioux City, Iowa, Mathematics Course of Study, Gr. 7-12.	*23
1927	Houston, Texas, Course of Study in Ninth Grade Plane Geometry, Sr. H. S.	24	1926	Sioux City, Iowa, Tentative Mathematics Course, Gr. 7-11.	*41
1928	Indiana, Tentative Course of Study in Mathematics for Secondary Schools.	176	1927	Sioux City, Iowa, Tentative Mathematics Course, Gr. 7-11.	*120
1923	Kansas, Mathematics, Part III, Course of Study for H. S.	19	1928	South Bend, Ind., Course of Study in Mathematics for Sr. H. S.	29
1927	Knoxville, Iowa, H. S. Mathematics.	*7	1928	Tacoma, Wash., Proposed Course of Study in Mathematics, Intermediate and H. S.	9
	Lakewood, N. J., Plan of Work for Normal, Slow, and Fast Classes in Mathematics.	*8	1926	Union City, Tenn., Course of Study in Mathematics.	*7
1927	Lansing, Mich., Course of Study in Mathematics, Gr. 1-12.	51	1924	Vermont, Course of Study in Mathematics, Gr. 7-12.	48
1927	La Salle, Ill., Reports on H. S. Course of Study in Mathematics.	*25	1928	Vermont, Course of Study in Mathematics, H. S. Manual and Courses of Study, Part X.	48
1923	Los Angeles, Calif., Supplementary Problems in Algebra, H. S. Course of Study Mono. No. 27, June, 1923.	37	1924	Virginia, State Course of Study in Mathematics, Gr. 8-12.	25
1926	Los Angeles, Calif., H. S. Course of Study, Algebra, Trigonometry, Plane and Solid Geometry.	12	1926	Wilmington, Del., Mathematics.	*5
1926	Lynn, Mass., Outline of Mathematics Course.	*12		Winnetka, Ill., Mathematics Objectives and Courses.	*14
1924	Maine, Mathematics Syllabus, Gr. 7-12.	*11	MUSIC		
1925	Maryland, The Teaching of H. S. Mathematics, Md. School Bul., Vol. VII, No. 2.	40	1924	Amherst, Mass., H. S. Course in Piano.	7
1928	Maryland, Course of Study for an Eight-Weeks' Review of Arithmetic for Fourth Year H. S. Classes, Md. School Bul. Vol. IX, No. 7, May, 1928.	32		Charleston, W. Va., H. S. Course of Study in Music Education.	*6
	Maryville, Ohio, A Course of Study for Plane Geometry.	*32	1925	Dallas, Texas, Music and Art Courses of Study.	10
1924	Minnesota, Syllabus of the H. S. Course in Mathematics.	53	1927	Dallas, Texas, Music Courses of Study.	14
1928	Missouri, Mathematics, Courses of Study in Jr. and Sr. H. S., Bul. No. 12.	60	1927	Fresno, Calif., Course of Study in Music, Gr. 7-12.	*24
1926	Muncie, Ind., Mathematics and Science Courses of Study, H. S.	36	1927	Fresno, Calif., Course of Study in Music, Sr. H. S.	*8
1925	New Brunswick, N. J., Tentative Course of Study, Mathematics for Sr. and Jr. H. S.	*26		Harrisburg, Pa., Course of Study in Music, Gr. 7-12.	*13
1926	New Castle, Pa., Syllabus of the Mathematics, Spanish, and French Depts., Sr. H. S.	11	1924	Honolulu, T. H., Music.	*7
	New York State, Syllabus in Algebra.	11		Iowa, Courses of Study in Music for the Public Schools, Univ. of Iowa Ext. Bul. No. 98.	35
1926	New York State, Syllabus in Solid Geometry and Plane Geometry.	11	1923	Kansas, Music and Art, Course of Study for H. S., Part X.	18
1927	New York State, Syllabus in Plane Geometry.	12	1926	Kansas, Music and Art Course of Study.	19
1928	Newton, Iowa, Course of Study in Mathematics, Gr. 7-12.	*53		Lansing, Mich., Course of Study in Music, Gr. 1-12.	35
1925	Oakland, Calif., Mathematics as a Related Subject for Smith-Hughes Work, Supt.'s Bul. No. 51.	*9	1927	Long Beach, Calif., Music Course of Study, Sr. H. S.	43
1925	Oakland, Calif., Mathematics for Sr. H. S., Course of Study Series No. 77.	45	1923	Long Beach, Calif., Supplement to the Courses of Study in Music.	79
1923	Oklahoma, Course of Study for Mathematics, Gr. 7-12.	71	1923	Los Angeles, Calif., H. S. Music, Course of Study Mono. No. 18, June, 1923.	68
1923	Pennsylvania, Course of Study in Mathematics, Gr. 7-12.	39	1925	Michigan, State Music Contests.	20
1924	Pennsylvania, Course of Study in Mathematics, Gr. 7-12.	39	1923	Missouri, Music Syllabus, Courses of Study in Jr. and Sr. H. S., Bul. No. 3.	45
1927	Pennsylvania, Course of Study in Mathematics, Years 7-12.	40	1926	Muncie, Ind., Art, Music, and Foreign Language Courses of Study.	28
1923	Philadelphia, Pa., Course of Study in Mathematics.	15		New York State, Applied Music for Pupils of Secondary Schools.	14
1928	Philippine Islands, Course in Arithmetic Methods.	*21	1924	New York State, Music Syllabus.	13
1928	Pittsburgh, Pa., H. S. Course of Study in Mathematics, Jr.-Sr. Division, Bul. No. 17.	214	1927	Oregon, Course of Study in Music.	14
			1923	Pennsylvania, Course of Study in Music, Elem. and H. S.	39
			1924	Pennsylvania, Course of Study in Music, Elem. and H. S.	41
			1927	Pennsylvania, Course of Study in Music.	43
			1927	Pennsylvania, Pennsylvania in Music, Educational Mono. Vol. I, No. 1.	27

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1927	Pittsburgh, Pa., H. S. Course of Study in Music, Jr.-Sr. Division.....	44	1923	Kansas, Course of Study for H. S., Part V—Science.....	67
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1924	Madison, Wis., Tentative Course of Study in Community Civics, Part II.	*12	1928	Porto Rico, A Revised Course of Study for H. S. Geography.	16
1927	Maine, Syllabus for the Social Sciences, Gr. 7-12.	*32	1924	Rhode Island, Outline of a Brief Course in the History of Rhode Island.	*12
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- Can the Nation Afford to Educate Its Children?* Vol. I, No. 2, March, 1923. 72 p. Price per copy, 25 cents. (Out of print.)
- Teachers' Salaries and Salary Trends in 1923.* Vol. I, No. 3, May, 1923. 116 p. Price per single copy, \$1.00.
- Five Questions for American Education Week.* Vol. I, No. 4, September, 1923. 56 p. (Out of print.)
- Facts on the Public School Curriculum.* Vol. I, No. 5, November, 1923. 48 p. (Out of print.)
- Current Facts on City School Costs.* Vol. II, Nos. 1 and 2, January and March, 1924. 64 p. (Out of print.)
- Teachers' Retirement Allowances.* Vol. II, No. 3, May, 1924. 32 p. Price per copy, 25 cents. (Out of print.)
- Facts on the Public School for American Education Week.* Vol. II, No. 4, September, 1924. 40 p. (Out of print.)
- The Problem of Teacher Tenure.* Vol. II, No. 5, November, 1924. 40 p. Price per copy, 25 cents.
- Public School Salaries in 1924-1925.* Vol. III, Nos. 1 and 2, January and March, 1925. 72 p. Price per copy, 50 cents.
- Taking Stock of the Schools.* Vol. III, No. 3, May, 1925. 32 p. (Out of print.)
- Keeping Pace With the Advancing Curriculum.* Vol. III, Nos. 4 and 5, September and November, 1925. 96 p. (Out of print.)
- The Ability of the States to Support Education.* Vol. IV, Nos. 1 and 2, January and March, 1926. 96 p. Price per copy, 50 cents.
- Efficient Teaching and Retirement Legislation.* Vol. IV, No. 3, May, 1926. 72 p. Price per copy, 25 cents.
- A Handbook of Major Educational Issues.* Vol. IV, No. 4, September, 1926. 72 p. (Out of print.)
- Major Issues in School Finance—Part I.* Vol. IV, No. 5, November, 1926. 32 p. Price per copy, 25 cents.
- Major Issues in School Finance—Part II.* Vol. V, No. 1, January, 1927. 64 p. Price per copy, 25 cents.
- Salaries in City School Systems, 1926-27.* Vol. V, No. 2, March, 1927. 64 p. Price per copy, 25 cents.
- The Scheduling of Teachers' Salaries.* Vol. V, No. 3, May, 1927. 64 p. Price per copy, 25 cents.
- The Advance of the American School System.* Vol. V, No. 4, September, 1927. 32 p. Price per copy, 25 cents.
- School Records and Reports.* Vol. V, No. 5, November, 1927. 132 p. Price per copy, 50 cents.
- Creating a Curriculum for Adolescent Youth.* Vol. VI, No. 1, January, 1928. 80 p. Price per copy, 25 cents.
- The Principal Studies His Job.* Vol. VI, No. 2, March, 1928. 68 p. Price per copy, 25 cents.
- The Advance of the Teacher Retirement Movement.* Vol. VI, No. 3, May, 1928. 56 p. Price per copy, 25 cents.
- Practices Affecting Teacher Personnel.* Vol. VI, No. 4, September, 1928. 52 p. Price per copy, 25 cents.
- Can the Nation Afford to Educate Its Children?* Vol. VI, No. 5, November, 1928. 48 p. Price per copy, 25 cents.
- Can the States Afford to Educate Their Children?* Vol. VII, No. 1, January, 1929. 44 p. Price per copy, 25 cents.
- The Principal and Progressive Movements in Education.* Vol. VII, No. 2, March, 1929. 60 p. Price per copy, 25 cents.
- Salary Scales in City School Systems 1928-29.* Vol. VII, No. 3, May, 1929. Price per copy, 25 cents.



WHEN WE IMPORTED the factory, science became busier and busier with discovery and invention. With resultant inventions we took hold of all the tools they gave us—steam, gas, electricity—and applied them to our national resources. Our standards of living and comfort have risen with our joyous application of every discovery.

We cannot deny that friction has grown up in this rush of development—conflicts between capital and labor, conflicts between groups of capital, invasions of the right to equal opportunity. But I believe we are in these latter years witnessing a silent revolution in many of these phases. The industrial system is fitting itself better into the social instincts of our people. There is a wider recognition of the practical process of assuring equal opportunity to men.

The result of all these fundamental currents has been the upbuilding of an enormous system of production and distribution which is constantly improving through the advance of technical understanding and increasing skill, supported by yearly perfection of public education, incessant scientific research and invention, and freedom from all but the minimum of interference with individual activities.

Our economic system is not perfect, but whatever our national weaknesses may be, they do not lie in a lack of vitality or courage. If we can maintain the moral fiber of our people and their individual initiative, if we can maintain equality of opportunity for our youth, if we maintain the strength of our government, we shall make even greater progress in the next century.—*Herbert Hoover, Foreword, A Century of Industrial Progress, Doubleday Doran.*

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