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refer to one of them by the term *X*. If they are in a correlation table the one so referred to is that which has its scale upon the horizontal axis. Whenever *X* is used to refer to the variable itself, *x* is used to refer to the difference or deviation of the variable from its mean. See *correlation table, variable*.—Odell, *Educational Statistics*, p. 36f., 156f.

Y, y. In dealing with situations in which two variables are concerned, such as a correlation table, the coefficient and ratio of correlation, the regression equations, and so forth, it is very common to refer to one of them by the term *Y*. If they are in a correlation table the one so referred to is that which has its scale upon the vertical axis. Whenever *Y* is used to refer to the variable itself, *y* is used to refer to the difference or deviation of the variable from its mean. See *correlation table, variable*.—Odell, *Educational Statistics*, p. 36f., 156f.

Yes-no test. This is a variety of the alternative test commonly used in connection with the new examination and upon standardized tests. It consists of a series of questions to each one of which pupils are expected to respond by yes or no.—Odell, *Objective Measurement*, p. 9f.

Z. Abbreviation for mode.

Zero point. The zero point on any given scale is the point which means just not any of the trait or characteristic measured by that scale. In the case of most educational measuring instruments a score of zero does not represent zero ability, or, in other words, a pupil who earns a score of zero cannot be known to be located at the true zero point. This result follows from the fact that the easiest exercises on most tests are difficult enough that a pupil may have some knowledge or ability along the line tested and still not be able to respond correctly to the easiest exercise on the test. If scores on different tests are expressed in terms of a common unit they can, for some purposes at least, be added to and subtracted from one another without the determination of true zero points, but they cannot be multiplied and divided into one another unless such points have been found.—Monroe, *Theory*, p. 101f., 146f., 150.

BULLETIN NO. 41

BUREAU OF EDUCATIONAL RESEARCH
COLLEGE OF EDUCATION

RECONSTRUCTION OF THE
SECONDARY-SCHOOL CURRICULUM:
ITS MEANING AND TRENDS

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PREFACE


Our understanding of current educational problems is usually augmented by an inquiry into recent educational history; in fact, it is frequently impossible to attain a clear comprehension of current problems by merely examining the present. This is especially true in the case of the problems relating to reconstruction of the secondary-school curriculum, our understanding of which is necessarily limited unless we know the course of their development.

The public high school became recognized as the dominant form of secondary school about 1890 and since then has had its greatest development. The first important report of a national committee relative to the secondary school was made in 1893, which marks the beginning of a new epoch in the history of American secondary education. No comprehensive studies of the past thirty-five years are available; hence, it seemed appropriate to undertake a comprehensive study of the secondary-school curriculum over that period. To one who is already familiar with the source materials, this bulletin should be helpful as a synthesis and as a review of certain details. To those not familiar with these source materials, particularly persons immediately concerned with the problems of the secondary school, this bulletin should render greater service by providing a background and setting in which the significance of present problems and practices may be more clearly seen than before.

This study attempts to identify and interpret the trends in the development of the secondary-school curriculum beginning with the Report of the Committee of Ten. It does not undertake to suggest what changes should be made. However, by making clear the trends of the past thirty-five years, it should contribute to the solution of our current problems.

WALTER S. MONROE, *Director*

March 1, 1928



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RECONSTRUCTION OF THE SECONDARY-SCHOOL CURRICULUM: ITS MEANING AND TRENDS

CHAPTER I INTRODUCTION

The problem. A conspicuous phase of the present secondary-school situation is an insistent demand for a reorganization of the curriculum. There appears to be wide-spread dissatisfaction with existing conditions. If one considers only a very recent period, he finds that many changes have been proposed, some of which have attained a sudden popularity. However, if one examines the criticisms of existing conditions and the changes advocated, he encounters difficulty in identifying central trends or a coherent guiding theory of education. Many of the discussions are controversial and most of the proposed changes appear fragmentary. This bulletin represents an attempt to analyze curriculum reconstruction on the secondary level, beginning with the Report of the Committee of Ten of the National Education Association¹ in 1893, for the purpose of identifying the trends in thinking and interpreting the present situation.

Terminology. A casual examination of committee reports, magazine articles, and other writings in the field of secondary education reveals variations in technical vocabulary. The disappearance of some terms and the introduction of others represent corresponding changes in ideas; but in other cases, changes in terminology represent chiefly refinements in thinking. In describing the trends relative to the secondary-school curriculum, it is difficult to avoid using the terminology of the periods considered, but the writers of this bulletin have endeavored to be consistent in their use of terms in so far as conditions permit. When a definition seems necessary in order to make the meaning clear to the reader, it is given at the place where the term is first used in this bulletin. Particular attention is called to the following terms: "learning activity," "learning exercise," "materials of instruction," "controls of conduct" or "abilities," and "objectives," all of which are defined in the discussion of objectives, Chapter III, pages 29-30.

¹The National Education Association of the United States was originally organized as The National Teachers' Association on August 26, 1857, at Philadelphia, Pennsylvania. This name was changed at Cleveland, Ohio, on August 15, 1870, to National Educational Association. The present name, National Education Association, was adopted at the Fiftieth Anniversary Convention held July 10, 1907, at Los Angeles, California, when a new national charter was accepted. For more complete information, see the *Journal of Proceedings and Addresses of the National Education Association*, Vol. 44, 1905, p. 26-40; Anniversary Volume, 1906, p. 19-20; and Vol. 45, 1907, p. 1, 36-38.

Throughout this bulletin the title "National Education Association" is used irrespective of the date of the reference.

"Secondary school" and "curriculum" have such a diversity of use and breadth of meaning that it is necessary to consider them at some length preparatory to defining the problem.

The secondary school. The schools devoted to secondary education are so varied in character, and opinions as to their scope and meaning vary so greatly, that it is impossible to give a simple, complete, and wholly adequate definition.² Probably the secondary school is most commonly thought of as a division of a crudely articulated educational system beginning with the kindergarten or primary grades and extending through the graduate school of the university. In the introduction to his account of the development of secondary schools in the United States, Brown defined "secondary education roughly as education of a higher stage than that of the elementary school and lower than that of institutions authorized to give academic degrees."³ Until recently the elementary school has generally included eight years,⁴ the secondary school four years, and the college four years. Hence, Brown's definition might be restated by saying that the secondary school is the institution that provides the four years of schooling following the eight years of the elementary school and preceding the four years of college.

Although published twenty-five years ago, Brown's definition still describes the secondary school, but the interpretation must be modified. The secondary school, particularly the public high school, is being extended both upward and downward. The prevailing trend in city school systems is to combine the seventh and eighth grades with the ninth to form the junior high school, the remaining three grades forming the senior high school. The upward extension, which includes the thirteenth and fourteenth years, is commonly known as a junior college. In a few cities an attempt is being made to organize grades seven, eight, nine, and ten into a junior high school and the next four years into a senior high school.⁵ Consequently, we cannot describe the secondary school in terms of a definite number of years. Many high schools include only grades nine to twelve, as formerly, but there is an in-

²This situation is not new. For example, the following statement was made in 1914: ". . . there is now no consensus of opinion as to the scope or meaning of secondary education. . . . In our own country the views concerning secondary education as to its purpose, scope, curriculum, method, or organization are of the most diverse character, even among those who are specialists in this very field."

Monroe, Paul. (Edited by). *Principles of Secondary Education*. New York: The Macmillan Company, 1914, p. 1-2.

³Brown, E. E. *The Making of Our Middle Schools*. New York: Longmans, Green, and Company, 1902, p. 1.

⁴In some of the eastern states, the elementary school includes nine grades. In other places, notably the southern states, the elementary school includes only seven grades.

⁵There are several other combinations of school grades at the secondary-school level, but these are the ones most commonly made.

creasing number of junior and senior high schools, which, with the junior college, include grades seven to fourteen.

The secondary school is also thought of in terms of the subjects in which instruction is offered. Until recently, beginning algebra, plane geometry, the first years of foreign languages, the elementary phases of physical and biological sciences, and the history of countries other than the United States were rarely taught below the ninth grade and hence served to distinguish the secondary division from the elementary school. Today, it is much more difficult to describe the secondary school in terms of characteristic subjects. Secondary schools vary greatly with reference to the number and type of subjects offered. The curriculum of the small high school necessarily is limited. In some cases it is very similar to that of the typical secondary school a quarter of a century ago, but in others the curriculum is dominated by "new" subjects designed to fulfill a practical or vocational function. In the larger high schools the curriculum usually includes a long list of subjects, many of which are "new." The downward extension of the high school has added to the complexity of the situation. Subjects that formerly were taught in the ninth grade or above have been moved downward. In some cases a sequence of subjects, such as arithmetic, algebra, and geometry, is being reorganized by shifting the grade placement of topics. Hence, it is apparent that the secondary school cannot be described satisfactorily by an enumeration of subjects.

The secondary school may be considered with respect to its functions, of which two have stood out most prominently. The preparation of students to enter college has always received attention and at times has been thought of as the dominant function. Evidence of this is afforded by the frequent use of the name "preparatory schools." Coordinate with this function and ever growing more prominent, is the preparation of pupils for vocational activities of a non-professional character but on a higher plane than unskilled labor. These two functions are suggested by the names "classical" and "technical," which are sometimes applied to certain public high schools in large cities. In general, these functions appear to be declining in relative prominence. A number of writers are using the term "comprehensive" to indicate that a single high school is intended to fulfill a number of functions.

From another point of view, the type of secondary school designated as the public high school has been described as "Common, free, tax-supported, non-sectarian, and State-controlled."⁶ On the basis of

⁶Cubberley, Ellwood P. *An Introduction to the Study of Education*. Boston: Houghton Mifflin Company, 1925, p. 11.

location and type of community served, public high schools are designated as rural, village, and city. They also vary in size from enrollments of less than fifty pupils to several thousand. The term "small high school" is frequently used as designating a type. Although there is no official definition, it is apparent that the maximum enrollment of a small high school seldom exceeds 100 and sometimes there is a much lower maximum specified. One writer defines a small high school as "one employing four or fewer teachers and enrolling 75 or fewer pupils."⁷ Ferriss describes "the typical small high school" as one staffed by three to five instructors including the principal.⁸ A large high school differs from a small one in more than mere size. It is in reality a very different type of educational institution. For example, it offers a wide range of subjects from which a student may choose those he wishes to pursue, whereas in the small high school there is very little or no opportunity for choice. For some purposes high schools are classified on the basis of the number of years of schooling offered, as one-year and two-year high schools, and so on.

The descriptions given in the preceding paragraphs make clear the impossibility of formulating a simple statement of the characteristics of our secondary schools. For the purpose of this bulletin, the writers have thought of the secondary school primarily in terms of the middle division of our educational system, formerly including grades nine to twelve but now frequently being extended to include also grades seven and eight. They have not included, except incidentally, either the small high school or the very large high school. In general, the writers have had the public high school in mind, but occasional reference has been made to secondary schools not supported by a general property tax.

Development of the curriculum concept. The term "curriculum" has grown into general educational usage within the past thirty-five years and represents an explicit refinement of an idea that has existed from the very beginning of formal education. The Committee of Ten, 1893, did not use "curriculum" in their report, nor does it seem to have been in common use among educators at that time. Instead, they used the terms, "subject," "topic," "subject-matter," "matter," and "course of study." For example, in discussing the report of the Conference on Natural History, the Committee stated: "Inasmuch as both the subject matter and the methods of instruction in natural history are

⁷Rufi, John. "The Small High School," *Teachers College, Columbia University Contributions to Education*, No. 236. New York: Bureau of Publications, Columbia University, 1926, p. 3.

⁸Ferriss, Emery N. *Secondary Education in Country and Village*. New York: D. Appleton and Company, 1927, p. 18.

much less familiar to ordinary school teachers than the matter and the methods in the languages and mathematics, the Conference believed that descriptive details were necessary in order to give a clear view of the intention of the Conference."⁹ Later, in discussing the report of the Conference on Geography, the Committee used the term "topics" with almost the same meaning as that given to subject-matter and matter in the sentence quoted. Thus, the curriculum was conceived by the Committee of Ten as consisting of the tested products of racial experience to be transmitted to the on-coming generation. This appears to be representative of the general point of view at that time.

The Committee on College Entrance Requirements, reporting in 1899, used the terms "curriculum," "program of studies," and "course of study," which they defined as follows:

(1) *Program of studies*, which includes all of the studies offered in a given school; (2) *curriculum*, which means the group of studies schematically arranged for any pupil or set of pupils; (3) *course of study*, which means the quantity, quality, and method of the work in any given subject of instruction.

Thus the program of studies includes the curriculum and may, indeed, furnish the material for the construction of an indefinite number of curriculums. The course of study is the unit, or element, from which both the program and the curriculum are constructed.¹⁰

For ten years¹¹ or more the word "curriculum" has been widely used in educational writings. Frequently, its meaning has not been apparent, but some writers have given explicit definitions. One of the older and widely used meanings is expressed by Ruediger: "By the curriculum is meant the logical, complete, and unified conception of the studies and exercises of the schools regardless of their administration; . . . by the course of study is meant the arrangement and grouping of these studies and exercises for the purpose of bringing them effectively to the learners."¹² These definitions are not in agreement with those given by the Committee on College Entrance Requirements, but they probably represent the meanings most frequently assigned to these terms.

Several more recent educational writers have assigned somewhat different meanings to "curriculum." The following quotations and

⁹"Report of the Committee of Ten on Secondary School Studies." New York: American Book Company, 1894, p. 28.

¹⁰"Report of the Committee on College Entrance Requirements." Washington: National Education Association, 1899, p. 41-42.

¹¹Bobbitt's book, *The Curriculum*, was published in 1918.

¹²Ruediger, W. C. *The Principles of Education*. Boston: Houghton Mifflin Company, 1910, p. 225. See also:

De Garmo, Charles. *Principles of Secondary Education*, Vol. I. New York: The Macmillan Company, 1913, p. 141f.

Monroe, Paul. *Principles of Secondary Education*. New York: The Macmillan Company, 1914, p. 33, 356f.

Inglis, Alexander. *Principles of Secondary Education*. Boston: Houghton Mifflin Company, 1918, p. 662f.

paraphrased statements give the essence of the concepts of the leading curriculum thinkers of today. Some injustice may have been done in thus extracting and isolating these statements; however, care has been taken to retain each author's exact meaning as understood by the present writers. For a more thorough understanding of these statements, the student should read each in its original context.

"As applied to education, it [the curriculum] is that *series of things which children and youth must do and experience* by way of developing abilities to do the things well that make up the affairs of adult life; and to be in all respects what adults should be."¹³

Elsewhere he says, not to quote exactly yet to retain his meaning, that the curriculum of the school is the series of consciously directed training experiences that the schools use for completing and perfecting the unfoldment of the abilities of the individual.¹⁴

"The curriculum should be selected directly from real life and should be expressed in terms of the activities and the environments of people."¹⁵

"The essence of the curriculum as used in this experiment is the *purposes* of boys and girls in real life. As such it is necessarily as broad as life itself and is not limited to any set of prescribed performances to be engaged in by boys and girls in a particular sequence as is the usual interpretation of the school curriculum. In this sense the curriculum is a living thing, *child experiencing*, no more capable of standardization in the sense of performances nicely prescribed in advance and from above than is any other living, growing thing."¹⁶

"At the outset it must be insisted that the curriculum consists of both ideals and activities on the one hand and their methods of realization and performance on the other hand."¹⁷

In a footnote, Briggs makes the following terse statements, explanatory of the text:

"Hitherto *curriculum* has been used to indicate the entire corpus of educational materials. A *course of study* means the organization of material into a unit for presentation, as 'a course of study for first-year English' or 'a course of study for the ninth grade in civic duties.' Later *curricula* will be used to indicate a coherent grouping of courses of study leading to some larger goal, as 'a music curriculum.'¹⁸

Bonsler assumes a more or less composite point of view in the following:

"If the purpose of the curriculum is to furnish aid in the selection and promotion of experiences of the largest life values, then the curriculum must

¹³Bobbitt, Franklin. *The Curriculum*. Boston: Houghton Mifflin Company, 1918, p. 42. Italics in the original.

¹⁴*Ibid.*, p. 43.

¹⁵Meriam, Junius L. *Child Life and the Curriculum*. Yonkers-on-Hudson, New York: World Book Company, 1920, p. 171. Printed in italics in the original.

¹⁶Collings, Ellsworth. *An Experiment with a Project Curriculum*. New York: The Macmillan Company, 1923, p. vii-viii, (Author's foreword). Italics in the original.

¹⁷Charters, W. W. *Curriculum Construction*. New York: The Macmillan Company, 1923, p. 74.

¹⁸Briggs, Thomas H. *Curriculum Problems*. New York: The Macmillan Company, 1926, p. 23. Italics in the original.

include, not only the essential facts, principles, and processes found useful in the daily conduct of life, but also the activities required."¹⁹

Clement uses the term "subject-matter" to mean the content of the curriculum, which appears to be the facts, principles, and processes that are the products of racial experience, especially as set down in books. A typical statement is:

"Our chief concern, however, is, How effective may these [aims] become in evolving subject matter appropriate to their realization."²⁰

It is apparent that he conceives of the objectives as separate from and preliminary to the curriculum proper when he heads his third chapter "The Correlation between Objectives and Curriculum Making."²¹

The following statements relative to the nature of the curriculum are found in the composite statement of the Committee on Curriculum-Making of the National Society for the Study of Education:

"Curriculum-making includes three technical tasks of major importance: the determination of the ultimate and immediate objectives of education; the experimental discovery of appropriate child activities and other materials of instruction; and the like discovery of the most effective modes of selecting and organizing the activities of the respective grades of the school."²²

"The curriculum should be conceived, therefore, in terms of a succession of experiences and enterprises having a maximum of lifelikeness for the learner."²³

". . . that part of the curriculum should be planned in advance which includes (1) a statement of objectives, (2) a sequence of experiences shown by analysis to be reasonably uniform in value in achieving the objectives, (3) subject matter found to be reasonably uniform as the best means of engaging in the experiences, and (4) statements of immediate outcomes of achievements to be derived from the experiences. That part of the curriculum from which selection of supplementary experiences and materials are to be used as conditions locally suggest, should be planned partly in advance and should be made partly as new materials become available. That part of the curriculum which represents the daily life-situations and interests from which the immediate specific needs of students arise, should be—can only be—made from day to day."²⁴

It is evident from the diversity of these statements that there is little agreement in regard to the concept designated by the term "curriculum." It may mean activities, or problems, or experiences, or ideals and their methods of realization and performance, or more or less formalized statements of the products of racial experience (facts,

¹⁹Bonser, Frederick Gordon. *The Elementary School Curriculum*. New York: The Macmillan Company, 1922, p. 2.

²⁰Clement, John Addison. *Curriculum Making in Secondary Schools*. New York: Henry Holt and Company, 1923, p. 28.

²¹*Ibid.*, p. 27.

²²"The Foundations of Curriculum-Making." *Twenty-Sixth Yearbook of the National Society for the Study of Education*, Part II. Bloomington, Illinois: Public School Publishing Company, 1926, p. 14.

²³*Ibid.*, p. 18.

²⁴*Ibid.*, p. 19-20.

principles, processes), or a composite of any or all of these, with some possible additions. However, it is evident that an attempt is being made to modify the traditional concept of the curriculum as a body of "formal subject-matter (facts, processes, principles) set-out-to-be-learned." When the curriculum is described as consisting of "pupil activities and experiences," emphasis is given to the fact that learning is an active process; when the curriculum is thought of as subject-matter, emphasis is given to the desired outcomes and there is the implication that learning is accomplished by memorizing.

From this survey of the use of the term, it appears that the curriculum may be thought of as consisting of three phases: (1) objectives, (2) materials of instruction, and (3) learning exercises. Objectives are the abilities or types of behavior to be attained; the materials of instruction are the subject-matter of the various courses and the physical materials used, such as apparatus in science laboratories; and learning exercises are requests, usually by a teacher, for the pupil to do something in order that he may learn. This concept of the curriculum, including the meaning of these terms, is expanded in Chapter III.

Restatement of problem. The foregoing exposition of the secondary school and the curriculum makes it possible to restate the problem in terms of the following questions:

1. What have been the trends of thinking since 1893 relative to the objectives of secondary education in the United States?
2. What have been the trends of thinking since 1893 relative to the selection and organization of the materials of instruction of secondary education; assuming, first, a traditional grade grouping and second, a regrouping of grades at the secondary-school level?
3. What have been the trends of thinking since 1893 relative to the learning exercises of secondary education?²⁵
4. What are the present trends of thinking relative to the curriculum of secondary education?

Sources of data. The reports of three national committees of the National Education Association—The Committee of Ten on Secondary School Studies,²⁶ reporting in 1893; The Committee on College Entrance Requirements,²⁷ reporting in 1899; and The Commission on

²⁵Although logically a part of the problem, this aspect of the curriculum will receive no systematic treatment in the following chapters. Most curriculum-makers in the field of secondary education have restricted their efforts to the determination of objectives and materials of instruction, and have left the devising of learning exercises to the teacher.

²⁶"Report of the Committee of Ten on Secondary School Studies." New York: American Book Company, 1894. 249 p.

²⁷"Report of the Committee on College Entrance Requirements." Washington: National Education Association, 1899. 188 p.

the Reorganization of Secondary Education,²⁸ reporting in 1918—have been taken as representative of the advanced thinking relative to secondary education current at the time of their publication. Other sources have been consulted freely, chief among them being: the proceedings of the National Education Association and of various sectional education associations, such as the North Central Association of Colleges and Secondary Schools; educational journals prominent in the field of secondary education, such as the *School Review*; reports of special investigations in the field of secondary education; and the writings of prominent educators, such as Charles W. Eliot.²⁹

In selecting sources, an attempt has been made to distinguish between thinking relating to the elementary school, the secondary school, and the college.³⁰ This is the reason for the somewhat incidental mention of such educational influences as the Herbartian movement and the writings of John Dewey. No attempt has been made to compile a bibliography. The reader interested in going to original sources will find no difficulty in locating them through the references given in the footnotes.

A caution. Educational practice as represented by typical schools always lags behind educational theory. A few schools, usually called "progressive," may be in advance of generally accepted theory, but these are more than balanced by those following traditional practices. Although there will be some reference to educational practice in the following chapters, the writers are concerned primarily with the trends of thinking about the secondary curriculum and its organization since about 1890.

Furthermore, it is their purpose to trace these trends rather than to set forth their own opinions in regard to the reconstruction of the secondary curriculum. However, the writers realize that in their selection and interpretation of the sources cited, judgment has been exercised. Other investigators, by selecting different sources or by making different interpretations of the data, might arrive at somewhat different conclusions.

²⁸"Cardinal Principles of Secondary Education," *U. S. Bureau of Education Bulletin*, 1918, No. 35. Washington: Government Printing Office, 1918. 32 p.

²⁹Throughout the bulletin references are given to particular sources. However, the sources cited represent only a small part of the total volume of material examined.

³⁰When the Committee of Ten made its report in 1893, our educational system was thought of in terms of three major divisions: (1) elementary school, grades one to eight; (2) high school, grades nine to twelve; (3) college and university which included all work beyond the twelfth grade. These institutions, however, had not developed as divisions of a comprehensive system. Some coordination existed between the high school and the college by virtue of the fact that the former fulfilled a preparatory function, but the high school and the elementary school were relatively more independent of each other. Reforms in the elementary school did not significantly affect curriculum development and organization in the secondary school until several years after the Report of the Committee of Ten.

CHAPTER II

THE SECONDARY-SCHOOL SITUATION PRIOR TO 1893

In order to have a proper perspective with which to approach a study of the trends in secondary-school curriculum reconstruction during the thirty-five years intervening between the Report of the Committee of Ten in 1893 and the present, it is necessary to review briefly the development of secondary schools in the United States and to describe the status of the curriculum just prior to 1893. In the present chapter the development of secondary schools is sketched in bold outlines only. The status of the curriculum is described in greater detail.

Development of secondary schools in the United States. The development of secondary schools in the United States is usually divided into three periods, each of which is represented by a distinctive type of school. The first type, commonly designated as the Latin grammar school, began with the establishment of the Boston Latin School in 1636. It continued as the dominant type of secondary school until after the Revolutionary War. The second type, known as the academy, was established in order to provide facilities for a more "liberal" education. During the first half of the eighteenth century there were a number of private schools that offered an opportunity for a "liberal" education, but the popularity of the academy idea dates from about 1749, when Benjamin Franklin proposed the establishment of an academy at Philadelphia.¹

Although the early academies were established as finishing schools—that is, schools in which a student might finish his schooling rather than merely prepare for college—they also served as preparatory schools, especially after the beginning of the nineteenth century and hence tended to become fitting schools. The establishment of the third type of secondary school, the public high school, was due in part to dissatisfaction with the academy as a finishing school. Although the first public high school was established in Boston in 1821, the academy continued to be the dominant type of secondary school until after the Civil War.

The history of secondary education in the United States is in part a record of attempts to provide a finishing school as well as a fitting school; that is, an institution that will prepare for life as well as for college. The desire for a more efficient finishing school twice resulted

¹This academy was established in 1751 and later became the University of Pennsylvania.

in the establishment of a new type of secondary institution. In turn, each was subjected to the powerful influence of higher education to make of it what the Latin grammar school had been, primarily a "fitting" school for the colleges. The academy succumbed and most of its remnants continue in this role today. The public high school faced the same fate and nearly yielded, but rallied and today boldly faces the herculean task of providing a training that will serve the dual function of preparing for life and for college. The most generally accepted point of view is that the two aspects of this function are not necessarily mutually exclusive, and that both may be served as well within a single institution as within independent institutions.²

Concepts which largely determined the nature of the curriculum.

Before attempting to describe the status of the secondary-school curriculum just prior to 1893, it will be helpful to note the prevailing meaning associated with the following: (1) the general function of the secondary school, (2) the learning process, and (3) the outcomes of learning.

(1) Concept of the general function of the secondary school.

The concept of the function of the high school prevailing just prior to the appointment of the Committee of Ten appears to be represented by the following quotations:

"One citizen supports the high school because it is a 'fitting-school' for college; another, because it prepares for business; another, because it is a school where children may become familiar with the elements of the natural sciences in an experimental way; and still another believes in it because of its training in manual labor. The result is that it becomes a difficult question to define the functions of a high school. This much seems clear to me: that the high school, as at present organized, is a provisional arrangement. . . . For the present, the high school is both a 'fitting' and a 'finishing' school, and in most places a school for both sexes."³

"It [the high school] is also preparatory for a higher course; but in a true sense it must be complete in itself, and not arranged especially for the needs of the very few whose education is to extend beyond the high school."⁴

"It is the province of the Western high school to meet, to a reasonably high degree, the requirements for entrance at college and in doing so it is certainly an important duty of principals and teachers of high schools to distinguish, especially in their recitation work, between the pupils fitting for college and those whose education is to be completed in the high school. . . .

"The second and most sacred province of the Western high school is to provide most wisely and unqualifiedly for the full needs of that very large majority of high-school pupils, reaching nearly eighty per cent of all pupils enrolled in the high schools of the country, which is and always will be the

²The changes relative to the objectives of the secondary school which led to acceptance of this point of view are described in the following chapter.

³Becholdt, A. F. "The High School as a Fitting-School," *Journal of Proceedings and Addresses of the National Education Association*, Vol. 29. Washington: National Education Association, 1890, p. 617, 622.

⁴Allen, E. A. H. "Science in Secondary Schools," *Education*, 10: 109, October, 1889.

broadest culture that the effort of the best teachers and the best methods can give them. To do this, school committees, superintendents, principals and teachers must be willing to sacrifice a considerable degree of fascinating popularity which comes first as a bribe to exchange real cultural studies for the so-called practical studies of the utilitarian age in which we are now living."⁵

"The prime purpose of the High School is to prepare those who can go no farther, for the business of life and to open up to those who would go farther the several avenues of scientific and literary culture which they may hereafter desire to follow."⁶

In 1890 the academy was still an important type of secondary school, especially in the eastern and southern sections of the United States. Although it was chiefly recognized as fulfilling a college-preparatory function, it was still considered to have a "finishing" function.

The object of the academy is to bring together the promising and ambitious youth who desire to improve themselves in knowledge, self-reliance, mental, social and religious discipline. The academy aims to give a wider education than can be secured in the more elementary schools; to prepare some of its pupils (the more the better) for colleges and universities; to give chiefly by education in the various branches taught, that power to do things, to organize and lead in worldly enterprises, to create and direct public sentiment, which is needed in every well-ordered community; in short, the work of the academy is to bring forward well-equipped men and women who will be leaders in the work of the world. . . . We want academies for those who have no high school on hand, and who will never go to college, unless they awake in the academy to the desire and possibility of it.⁷

Thus, the secondary schools, especially the public high school, were generally considered as fulfilling a dual function: a "fitting" and a "finishing" function. The attempt to serve both phases of this function was thought to place the secondary school in a compromising situation; but nevertheless, both must be served.

(2) **The prevailing concept of the learning process.** According to the "doctrine of formal discipline," as the theory of learning prevailing before 1890 is commonly designated, the child's mind was considered to consist of certain faculties, such as perception (observation), memory, discrimination, and reasoning, which were trained or disciplined by doing school tasks. This concept of learning was emphasized in connection with mental arithmetic in the elementary school and with Latin and mathematics on the high-school level. The educative value of an exercise was considered to depend largely upon its difficulty.

⁵Austin, H. "The Province of the Western High School," *Journal of Proceedings and Addresses of the National Education Association*, Vol. 30. Washington: National Education Association, 1891, p. 681, 682.

⁶Thirty-Seventh Annual Report of the Board of Education of the City of Chicago, 1890-91." Chicago: Board of Education, 1892, p. 39.

⁷Editorial. "The Value of the Academy," *Education*, 11: 187-88, November, 1890. (Quoted from a letter of C. F. P. Bancroft, headmaster of Phillips Andover Academy.)

The following statements are typical of many that might be quoted.

Education is the development of the individual in and through his environment—or, more clearly for our purpose, education is gaining a knowledge of one's environment and training the faculties to use knowledge wisely and skillfully; it properly includes in the high-school period a training in the consciousness of one's own powers and possibilities. The acquisitions to be made in this period, which is the full dawn of all high possibilities, are view and power—the view, which takes in broad and striking scenes; the power, which may be used successfully in any field of activity. . . .

Thus far the use of studies on the knowledge side has been considered, but the mental power, the development of the mental faculty—that higher purpose of education—must be constantly kept in view. Properly employed, mathematics trains the abstractive and deductive powers; science the perceptive, conceptual and inductive powers; history the ethical and the higher personal emotions; literature the aesthetic and the ethical emotions; all studies exercise memory and imagination more or less; proper school requirements cultivate right emotion and train the will; all physical training, as reading, speaking, music, drawing, exercise, give the mind power over the body and thus train the will.⁸

The same concept of learning was evidenced in discussions of the "newer" subjects which were struggling for recognition in the high-school curriculum. The following statements relative to manual training are representative.

" . . . manual training has a very substantial 'educative value'; it is in fact nothing but mental training in a new mode—a mode in which the hand and eye play rather important parts as the mind's instruments."⁹

"There is a psychological foundation for manual training which should not be overlooked. All educators are now of one mind that the first duty of the teacher is the cultivation of the perceptive powers. No matter what system of philosophy we may profess, we are all agreed that knowledge begins in perception. The tactual and visual perceptions are by far the most important. 'The former of these gives us the direct mode of apprehending things, the latter the largest grasp of external things, of any of the modes of perception.' (Sully, *Outlines of Psychology*.) The progress of perception grows with the increase of the power of visual and tactual discrimination. Now the purpose of manual education is primarily the training of the hand and eye. Hence drawing, as a mode of cultivating visual perception, is made one of its prominent features; and the introduction of tools in connection with wood, iron, and other materials is simply for the purpose of so cultivating the hand as to enable the mind to attain to a larger and more exact knowledge of things as they exist in nature and are used in industrial arts. It would therefore be easy to show that the introduction of manual work into the schools is important because of the effect it would have upon the mind itself. The processes of manual training afford a better means of cultivating the faculties of reason and judgment than many things which now find place in the courses of instruction. Measurements, comparisons, the adjustment of means to ends, the co-

⁸Baker, James H. "The High School as a Finishing-School," *Journal of Proceedings and Addresses of the National Education Association*, Vol. 29. Washington: National Education Association, 1890, p. 634-35.

Baker was principal of the Denver High School and was also chairman of the committee which immediately preceded and paved the way for the Committee of Ten.

⁹Seaver, Edwin P. "Manual Training," *Education*, 11: 501, April, 1891.

operation of mind, hand and eye, all conduce to a broader mental culture than can be gotten from many of the studies which usurp so large a portion of the pupils' time."¹⁰

(3) **Concept of the outcomes of learning.** The concept of the outcomes of learning prevailing about 1890, of which the principal ones were trained faculties, is reflected in the preceding pages. Knowledge (memorized facts), ability to translate passages of Latin, ability to demonstrate a theorem in geometry, and skill in bookkeeping or in manual training were primarily means of attaining these more important objectives.¹¹ The following statement relative to the function of the high school reflects the then current concept of the outcomes of learning:

I. Its chief function is not to teach pupils how to make horse shoes, wood-boxes, or bricks.

II. It is not a business college, turning out its graduates armed for the conflict of life with a copy plate handwriting and so called "business" methods that business men do not use.

III. It is not a normal school, furnishing its pupils with ready-made methods of teaching everything under the canopy.

IV. It is not a college, training the boys and girls to discourse learnedly on psychological and economic questions in which they, and too often their instructors, are as deeply versed as is the "Cassowary on the plains of Timbuctoo."

That school only is a *high* school in the true sense of the word which furnishes its pupils with high ideals. The development of the intellectual powers, the receptivity of the mind to new and far-reaching truths, likewise make easily possible the acceptance of moral truths. These truths it is the duty of the teacher to emphasize and render vital in the mind of the pupil. The man who scoffs at sacred things, content with his year's work if he can show intellectual progress in his pupils and who has no concern for their moral welfare, has no place in the school-room.¹²

Status of the curriculum just prior to 1893. Efforts to serve a dual function and to make the subjects and their organization conform to the prevailing concepts of the nature of learning and its outcomes had led the high schools into a chaotic condition of which educators were becoming decidedly conscious. In consequence, they were beginning to feel the situation to be intolerable. Latin, Greek, algebra and geometry were subjects of long standing. A technique of teaching had been worked out for them, and it was generally considered that their mastery was accompanied by the training of the student's faculties. Hence, these subjects were considered to possess a high educative value. However, other subjects had been introduced in response

¹⁰MacAlister, James. "Manual Training," *Education*, 11: 430-31, March, 1891.

¹¹"The process of education implies the accumulation of information and the training of the faculties: if harmoniously conducted, the result is the cultured man."

Thorpe, Francis N. "The Study of Current Topics as a Feature of School, Academic and College Education," *Education*, 11: 170, November, 1890.

¹²Cabeen, C. W. "The Place of the Public High School," *Education*, 10: 537-40, May, 1890.

TABLE I.—SUBJECT OFFERINGS IN THE HIGH SCHOOLS OF THIRTY NORTH-CENTRAL CITIES, 1886-90^a

Subjects	Time in Years											Total		
	¼	½	¾	1	1¼	1½	1¾	2	2½	3	4		X ^b	O ^c
Commercial.....		9	4	9	1									31
English.....		26	19	19	31	1								138
Foreign Language.....														
(Other than Latin).....														
Latin.....		2	2	6	1									21
Mathematics.....	1	15	14	11	30									84
Science.....	5	52	56	33	30	1								104
Social Studies.....	1	45	21	17	16	2								189
Miscellaneous.....	1	10	3	4	3									111
Total.....	8	159	119	99	141	1	16	12	2	11	1	8	6	701

^aThe data for this table were taken from:

Stout, John Elbert, "The Development of High-School Curricula in the North Central States from 1860 to 1918," *Supplementary Educational Monographs*, No. 15, Chicago: University of Chicago, 1921, p. 277-79.

^bX means subject offered but time not specified.

^cO means subject offered but character of subject-matter not specified.

to the desire for a finishing school. Even in colonial times, instruction was given in French, Italian, Portuguese, Spanish, geography, history, natural philosophy, astronomy, surveying, navigation, bookkeeping, and other vocational subjects.¹³ Stout¹⁴ shows that during the period from 1860 to 1890 a surprisingly large number of subjects were introduced in public high schools. Such

TABLE II.—NUMBER OF DIFFERENT SUBJECTS IN EACH FIELD OF STUDY IN THE HIGH SCHOOLS OF THIRTY NORTH-CENTRAL CITIES, 1886-90^a

Field	Number of Subjects
Commercial.....	6
English.....	18
Foreign Languages (Other than Latin)...	3
Latin.....	6
Mathematics.....	7
Science.....	11
Social Studies.....	14
Miscellaneous.....	6
Total.....	71

^aThe data for this table were taken from:

Stout, John Elbert. "The Development of High-School Curricula in the North Central States from 1860 to 1918," *Supplementary Educational Monographs*, No. 15. Chicago: University of Chicago, 1921, p. 277-79.

titles as elocution, American literature, physical geography, civil government, commercial arithmetic, commercial law, mental philosophy (psychology), drawing, manual training, and domestic science¹⁵ reflect a popular demand during that period for instruction in "practical" subjects. However, there appears to have been little uniformity in either the content of these "new" subjects or the amount of time devoted to them.

Table I presents a tabulation of the subjects offered in the high schools of thirty representative North-Central cities during the period 1886-90. A large proportion of the subjects were "short courses." Of the 583 subjects for which the time allowance is stated, 167 or 29 per cent were taught for a

third of a year or less; 286 or 49 per cent a half year or less; 385 or 66 per cent two-thirds of a year or less; and only 198 or 35 per cent were allotted a year or more. This is a condition against which the Committee of Ten seriously protested.¹⁶

Table II shows that the total number of subjects offered in the high schools of these thirty cities was large (seventy-one), although distributed over comparatively few fields. The subjects in some of the fields, notably English and the social studies, had been so multiplied that there was a large degree of overlapping. It was in these two fields and in science that the greatest proportion of subjects with a short time allowance was found. Only one subject, algebra, was offered by all thirty schools. Botany was a close second, all but one school offer-

¹³Seybolt, Robert Francis. "Source Studies in American Colonial Education, The Private School," *University of Illinois Bulletin*, Vol. 23, No. 4, Bureau of Educational Research Bulletin No. 28. Urbana: University of Illinois, 1925. 109 p.

¹⁴Stout, John E. "The Development of High-School Curricula in the North Central States from 1860 to 1918," *Supplementary Educational Monographs*, No. 15. Chicago: University of Chicago, 1921. 322 p.

¹⁵*Ibid.*, p. 71-74.

¹⁶See p. 56.

TABLE III.—COURSES OFFERED BY THE HIGH SCHOOLS OF THIRTY-FIVE NORTH-CENTRAL CITIES, 1886-90^a

Name of Course	Number of Schools	Name of Course	Number of Schools
Academic.....	1	General Science.....	1
Ancient Classical.....	1	German.....	3
Business.....	1	German-English.....	1
Commercial.....	1	Latin.....	5
Commercial-English.....	1	Latin-English.....	1
Classical.....	5	Latin-German.....	3
English.....	9	Modern Classical.....	3
French-English.....	1	Normal.....	1
General.....	3	Preparatory-English.....	1
General-Literary.....	1	Regular.....	1

^aThese data were taken from Stout. *Op. cit.*, p. 47-48.

ing it. At the other extreme were fifteen subjects offered by only one school of the thirty, and many other subjects offered by only two, three, or four schools. All thirty schools offered something in each of four fields: English, mathematics, science, and social studies. In the other fields, the proportion varied from 83 per cent offering Latin down to 47 per cent offering subjects classed as miscellaneous.

An examination of the statistics of the various subjects of study reported by the United States Commissioner of Education for the school year 1889-90 indicates that in the public secondary schools, Latin and algebra were the only subjects taken by more than 30 per cent of all pupils enrolled, and Greek and French were the only ones pursued by less than 10 per cent. In private schools, Latin and algebra were again the only ones taken by more than 30 per cent, while Greek and chemistry were taken by less than 10 per cent. In general, foreign languages were taught to a less extent in the western division than in the other divisions of the United States. Otherwise, sectional variations in both public and private schools were comparatively negligible.

Organization of subjects into courses. Table III presents a tabulation of the courses into which subjects were organized in the high schools of thirty-five cities.¹⁷ One is impressed with the miscellaneous character of the courses, there being twenty different titles. Other data show that only fifteen of the thirty-five schools offered more than one course. Of these, only one offered as many as four courses, and only two offered as many as five. Stout¹⁸ calls attention to the fact that by 1890 the terminology used to designate courses had become much less meaningful than had formerly been the case. "Department" had given way to "course"; "classical course" and "English course"

¹⁷This is a slightly different group from the one for which subject data were presented in Table II, although it includes most of the thirty cities of the first group.

¹⁸Stout. *Op. cit.*, p. 249.

had ceased to be used exclusively to designate courses intended to prepare for higher institutions and for life.

Some causes of the chaotic condition of the curriculum. Stout is of the opinion that a major cause of the chaotic state of high-school subjects and courses was the effort of the high schools to meet the needs of the various classes of children enrolled. He also points out that college-preparatory courses were undergoing marked change—Greek ceasing to be a constant and many other subjects being added. No doubt this was largely due to the liberalizing of college-entrance requirements, although changes in both unquestionably were reciprocally related. Broome shows that the increase in subjects required for admission was markedly accelerated after 1870.¹⁹ In consequence, the variation from college to college constantly became more pronounced. However, Table IV shows that it was marked as early as 1870. Although the data are confined to one of the newer fields, the same sort of variation can be found in the old established subjects, such as Latin.

For the most part, the high schools had attempted to work out their destinies without assistance from higher institutions. Prior to 1890, a few colleges and universities, such as Columbia College, Harvard University, and the state universities of Michigan, Minnesota, Indiana, and California, had initiated schemes of inspecting and accrediting high schools, and were holding annual conferences between groups of colleges and high schools. Associations of secondary schools and colleges were beginning to be organized—the New England Association of Colleges and Secondary (Preparatory) Schools being formed in 1884, and the Association of Colleges and Secondary Schools of the Middle States and Maryland being organized in 1887 as the College Association of Pennsylvania. These represent the beginning of organized attempts to promote harmony between colleges and secondary schools. Previously, the influence of the colleges had been exerted in the main through independent formulation of entrance requirements.

By the nineties, the chaotic condition of the high-school curriculum and of college-entrance requirements, the lack of articulation between the high schools and colleges, and the attempt of the high schools to serve two functions, resulted in a situation ripe for some action to bring order out of chaos.²⁰

¹⁹Broome, Edwin Cornelius. "A Historical and Critical Discussion of College Admission Requirements," *Columbia University Contributions to Philosophy, Psychology and Education*, Vol. 11, Nos. 3-4, 1903, p. 61f.

²⁰Stout's investigation shows that the chaotic condition of the secondary-school curriculum about 1890 was not markedly different from that of preceding periods. In fact, there were some tendencies toward greater stability than at any previous time, particularly in the amount of time devoted to various fields and the number of schools having subject offerings

TABLE IV.—HISTORICAL AND GEOGRAPHICAL SUBJECTS REQUIRED FOR ADMISSION TO COLLEGE IN 1870^a

Institution	Subjects	Institution	Subjects
Columbia....	Geography, Ancient and Modern	Michigan	Roman and Greek History U. S. History, to close of Revolution
Cornell.....	Roman and Greek History Geography	.....	Ancient and Modern Geography Physical Geography
Harvard.....	History of Greece and Rome Ancient and Modern Geography Elements of Physical Geography	Princeton Yale	Geography, Ancient and Modern Geography

^aData for this table taken from Broome. *Op. cit.*, p. 53.

Criticisms of secondary education prior to 1893.²¹ Naturally, this chaotic condition led to many criticisms of the secondary school, particularly the public high school. Several statements already made indicate that there was some dissatisfaction with secondary education, but an examination of the proceedings of educational associations and the files of educational periodicals reveals many vociferous critics. Many of the statements bear close resemblance to much of what we hear on every side today. William T. Harris, then United States Commissioner of Education, is quoted as having said: "It has been agreed on all hands that the most defective part of the education in this country is that of secondary schools."²² J. Remsen Bishop²³ identified two groups of those who wished to be constructive critics of secondary education. The first was composed of those who had what he termed the "independent high-school idea." Their watchwords were: "The best equipment for living," and "The greatest good to the greatest number." They stood for a broad course which should "lay the foundation—supply the rudimentary data—of the greatest practicable number of liberal studies, defining liberal studies as those which 'regard rather intellectual improvement than the necessity of subsistence'." They believed that eventually the colleges would accept their gradu-

in certain fields. Some subjects, particularly mental philosophy, moral philosophy, classical antiquities, ancient geography, and all higher mathematics except trigonometry, had practically disappeared by 1890. On the other hand, the number of subjects and courses was steadily increasing and the terminology applied to subjects and courses was becoming ever less meaningful.

²¹In considering criticisms of secondary education one must ever keep in mind that there was little uniformity in practice, and hence many of the criticisms were not generally applicable. Furthermore, different critics saw the schools from different points of view and as a result practices that were laudatory in the eyes of some were severely condemned by others.

²²Lynch, Charles P. "Is it True that the Most Defective Part of Education in This Country is in the Secondary Schools?" *Journal of Proceedings and Addresses of the National Education Association*, Vol. 33. Washington: National Education Association, 1894, p. 745-51. Apparently this refers to a letter of transmittal which accompanied the first 30,000 copies of the "Report of the Committee of Ten" which were printed by the U. S. Bureau of Education.

²³Bishop, J. Remsen. "The Future of the American High School," *School Review*, 3: 287-93, May, 1895.

Although this appeared in 1895, it was just as applicable in 1890.

ates. The second group was composed of those who had what he termed the "trans-oceanic idea." Their watchwords were: "A few things thoroughly," and "Coordination of the high school with the college." However, the "few things" proved to be the traditional college-preparatory subjects or those which were being rapidly introduced as such.

The chief criticism of the objectives of secondary education was relative to the lack of preparation for life and citizenship. It was frequently maintained that the high school was too much of a fitting school. In a somewhat more fundamental way it was occasionally pointed out that there was a lack of purpose on the part of the secondary schools. The following quotations are illustrative.

"If he [an elementary school pupil] looks forward to the high school in that city, he finds himself contemplating a four years' course in an institution modeled on the plan of the university-fitting school of a generation ago;—four years of cramming in Latin and mathematics, with a little dabbling in science and a mild flirtation with English literature, under a faithful group of teachers who honestly believe the present educational methods a mischievous falling away from 'the good old times.' So, in a city of 60,000, requiring the most rigorous training of at least 5,000 boys, by the best methods, to the age of fifteen, with a generous high school course, adapted to the needs of at least three classes of students, a few hundred boys stagger on to the age of twelve, possibly a hundred and fifty begin the high school course, half of them falling out, and not a hundred receive the education adequate to a real career in any department of life. Meanwhile, a serene school committee of 'eminent citizens,' advised by the superintendent, publishes to the world the fact that the schools of their budding metropolis are 'as near perfection as can be attained'; congratulating themselves that the half dozen boys graduated from the upper story become the 'honor students' in the same narrow course of study at the university. This is neither a fancy sketch nor a portrait of a solitary place. It represents a condition of affairs that exists, today, in the majority of towns and cities of five thousand and upwards in the United States."²⁴

In commenting on this editorial, Frank E. Plummer said:

"No one surpasses me in enthusiastic confidence in the American high school. Yet I do not believe it has fulfilled its mission. That the high school of the present does not secure proper and sufficient results in its efforts to develop the typical American citizen is evidenced by the growing and widespread feeling which has settled into a determination to effect radical changes in certain directions. . . .

"They [the assertions of the editorial] mirror the feeling of unrest which seems to pervade the general public—an unrest which calls, loudly and imperatively, for a readjustment of the high school, that the needs of the present and the future may be more fully conserved."²⁵

"Michigan school men have been so lost in the idea of a great educational ladder, 'with one end in the gutter and the other in the university,' that they have failed to realize the fact that the masses can climb but the first few

²⁴Editorial, *Education*, 11: 638-39, June, 1891.

²⁵Plummer, Frank E. "The Future High School," *Journal of Proceedings and Addresses of the National Education Association*, Vol. 30. Washington: National Education Association, 1891, p. 622-23.

rounds, and that a landing should be provided for them. They consider the high schools as but feeders to the University, and that every scholar must take one of the University preparatory courses, whether he is ever to attend the University or not."²⁶

A number of critics called attention to the lack of articulation of the high school with the other units of the educational system.

"The weak points in the public-school system seem to be the transitions—transition from the grammar to the high school, and transition from the high school to the college. Undoubtedly many pupils drop out at the end of the grammar-school course and fail to carry their education further, only, or at least principally, because of the length of the step from the school they have been attending to the high school. . . .

"If the high school could thus be brought closer to the college, a more perfect differentiation of their respective functions would be attainable. In the first place such subjects as psychology, logic, the philosophy of ethics, would be recognized as necessarily belonging to the college, and they would be dropped from the high-school course. Less obvious but not less important would be another change, which would inevitably occur, in high-school aims and methods rather than in the scheme of studies. The high-school teacher would see more clearly just what he is called upon to do, just what kind of instruction he should give, just how far he should seek to carry his pupils. And it is just here that some powerful checking influence is needed in our high-school methods. We are in great danger, in getting beyond our pupils, of resorting too much to college methods; of *exhausting*, or rather of trying and pretending to exhaust the subject. If both teacher and pupil see the college plainly before them there will be less of this vain, and worse than vain, attempt to cover the whole subject and finish it up. It will be easier for each to content himself with such an introduction to various fields as is proper to the high-school age, each having constantly before the mind the fact that just ahead is a school—the college—in which the same studies are pursued further, deeper, higher."²⁷

Criticism of secondary education was by no means confined to those officially connected with our schools. Some of the most severe criticisms were made by laymen. Their interest in secondary education may be inferred from the alacrity with which the Report of the Committee of Ten was seized upon by the press of the nation. In a bibliography²⁸ on this subject published in 1894, references are made to articles (frequently editorials) in the following non-educational periodicals: *Outlook*, *Dial*, *Harper's Weekly*, and *Atlantic Monthly*. The following defensive statements reflect criticism that had been leveled at the school by laymen.

The *Boston Herald* scholarships of some months ago, have called widespread attention to a fact that has been patent to men and women of observation for many years, viz., that public school graduates of these latter days

²⁶MacKibbin, Stuart. "Preparation for Citizenship in Michigan," *Education*, 10: 411-12, March, 1890.

²⁷Dougherty, N. C. Discussion of an address by Charles W. Eliot, "The Gap Between the Elementary Schools and the Colleges," *Journal of Proceedings and Addresses of the National Education Association*, Vol. 29. Washington: National Education Association, 1890, p. 533-34.

²⁸"References on the Report of the Committee of Ten, and on the Policy of the State toward Education," *School Review*, 2: 558-61, November, 1894.

appear to have profited but little by their years of study of the English language. . . .

When parents learn that *they* are the teachers of their children, and that Miss Normal Graduate is only an efficient assistant provided by the state, complaints of the insufficiency of the schools will not be so frequent.²⁹

Concluding statement. The secondary-school situation in the United States just prior to the report made by the Committee of Ten may be summarized in the following brief fashion.

1. Although the academy was still an important factor, the public high school was firmly established, succeeding the Latin grammar school and the academy as the dominant type of secondary school.

2. A serious conflict existed between the "fitting" and "finishing" functions, placing the high school in a compromising position in the effort to serve both.

3. The concept of learning conformed to the doctrine of formal discipline; a child's mind consisted of faculties which were trained or disciplined by doing school tasks.

4. A decidedly chaotic condition existed with reference to the subjects offered and their organization into courses (departments or curricula), a condition brought about chiefly by the effort to serve the dual function of secondary education and to make the work compatible with the accepted theory of learning and its outcomes, aggravated by the variegated character of college-entrance requirements.

5. The secondary school was receiving vigorous criticism from both educators and laymen. The most significant criticisms were leveled at the purposes of the secondary school, and through them directed at the subject offerings.

²⁹Chase, Frank. "English in the Schools," *Education*, 11: 123-24, October, 1890.

CHAPTER III

CURRICULUM RECONSTRUCTION: OBJECTIVES

The curriculum concept amplified. In Chapter I, the conclusion was reached that the curriculum should be thought of as consisting of three phases: (1) objectives, (2) materials of instruction, and (3) learning exercises. This concept of the curriculum implies certain educational principles. It is a generally accepted psychological principle that a person learns only as a result of his own activity: physical, mental, and emotional. All activity is educative, but frequently education is not its primary function. In order to designate activity whose primary function is educative, "learning" is added as a qualifying term. Hence, any activity whose primary function is the education of the participant is a "learning activity."

Although some learning activities originate with the learner and constitute attempts to realize his own purposes, most of them are responses to requests made by the teacher. A request, explicit or implicit, to do something is called an exercise. In order to differentiate exercises whose primary function is educative from those having some other purpose, particularly the measurement of achievement, "learning" is added as a qualifying term. Hence, any request whose primary function is the education of the doer is a "learning exercise." Learning activities are responses to learning exercises.

Many learning exercises are requests to respond to or to do something with certain materials,¹ which, because of their use for the purposes of instruction, may well be called "materials of instruction." They are of three general classes: first, verbal statements of facts, principles, arguments, descriptions, and the like; second, physical objects that a pupil observes, usually by seeing;² and third, physical materials that the pupil manipulates, such as those in the laboratory or shop.

Learning activity produces changes in the participant: he acquires new habits, new principles, new attitudes, and the like. These products or outcomes of learning are called abilities or achievements. Since, however, they function as determinants of future behavior, they are frequently designated as "controls of conduct." Three types are desig-

¹Some learning exercises, such as many thought questions, simply request the learner to do something with information already in his possession and cannot be said to involve materials of instruction.

²This class includes such materials as slides, moving pictures, and phonograph records which are used to furnish observational materials. In some respects these are more closely related to verbal statements than to the class of observable materials.

nated by the terms "specific habits," "knowledge," and "general patterns of conduct."³

The outcomes of learning which are set up as the aims or goals of education or of a division of the educational system are commonly termed "objectives." Thus, one may refer to the objectives of the high school, of junior-high-school mathematics, or of a lesson in English literature. Those educational goals which are stated in terms of controls of conduct are designated as "control objectives," a term used because it is more meaningful than the more commonly used equivalent, "immediate objectives." The latter has acquired numerous peculiarities of usage which have vitiated its value where exactness of meaning is desirable. Educational goals stated in terms of the behavior or conduct of educated persons or groups are designated as "conduct objectives," a term used because of its meaningful character as compared with its more frequently used equivalent, "ultimate objectives." Educational goals, whether conduct objectives or control objectives, thought of in broad, general terms, are designated as "general objectives" as a means of distinguishing them from goals of a more detailed nature which are called "specific objectives."

With this discussion as a background, the description of the curriculum as consisting of objectives, both control and conduct, materials of instruction, and learning exercises, is somewhat more meaningful. Although both control and conduct objectives are included, the former occupy the more prominent position in the curriculum. They are more direct determiners of materials of instruction and learning exercises. On the other hand, conduct objectives are more fundamental to curriculum thinking. They must be clearly conceived in order that a proper selection of control objectives may be made. As has already been pointed out in Chapter I, learning exercises, although an essential part of the curriculum, have been dealt with only incidentally by most curriculum-makers, being left in the main to be devised by textbook writers and especially by teachers as a phase of their daily teaching tasks.

The central problems of curriculum-making. Inasmuch as most curriculum-makers in the field of secondary education have dealt with learning exercises in an incidental way only, the central problems of curriculum-making have to do with the first two phases of the curriculum: objectives and materials of instruction. Each of these affords the basis for a group of related problems. For example, the question,

³Monroe, Walter S. *Directing Learning in the High School*. Garden City, New York: Doubleday, Page and Company, 1927, p. 30-31.

What should be the objectives of secondary education? leads to such problems as: What are the proper general functions of the secondary school? For what children should the curriculum be planned? What phases of life should be included by the conduct objectives? Should differentiation be made in objectives for different groups of children? The question, What should be the materials of instruction of secondary education and how should they be organized? requires that attention be given to such problems as: What materials of instruction are best adapted to a realization of accepted objectives of secondary education? How will the selection of materials be affected by the administrative organization of the schools? What is the proper grade-placement and sequence of selected materials of instruction? What differences in materials of instruction are desirable for different ability groups?

Each of these lists of subordinate questions might be extended, but those stated indicate how the numerous smaller problems of curriculum-making center around the two problems: What should be the objectives of secondary education? and, What should be the materials of instruction of secondary education and how should they be organized?⁴

The problems of the following chapters. The statement of the problem given in Chapter I has three major divisions: the first deals with the trends of the past thirty-five years relative to objectives, the second with the trends relative to the selection and organization of materials of instruction, and the third with present trends relative to both objectives and materials of instruction. In order to present an adequate discussion of the very complex problem and at the same time to avoid confusion, an analytical form of treatment is necessary. The following titles of this and the succeeding chapters give a general view of the way in which this discussion is organized.

Chapter III. Curriculum Reconstruction: Objectives

Chapter IV. Curriculum Reconstruction: Selection and Organization of Materials of Instruction, Assuming a Four-Year High School

Chapter V. Curriculum Reconstruction: Selection and Organization of Materials of Instruction, Assuming a Junior-Senior High School

Chapter VI. Curriculum Reconstruction: Selection and Organization of Materials of Instruction so as to Secure Adaptation to Individual Differences

⁴On logical grounds, it is apparent that this latter problem is essentially two. However, the two are so inextricably intermingled and interdependent that an arbitrary distinction leads one into serious confusion. This is especially true because of the complicating influence of such factors as the administrative organization of the educational system and provision for individual differences.

A final chapter summarizes the trends discussed in the chapters just outlined and indicates trends that are apparent in thinking about the secondary-school curriculum today.

This chapter: the development of the objectives of secondary education since 1893. Aside from an almost incidental mention of the general function of the secondary school, the Committee of Ten did not recognize objectives; they did not use the term. The Commission on the Reorganization of Secondary Education⁵ thirty-five years later made their report primarily a statement of objectives; they made constant use of the term. During this interval of thirty-five years, a very complex development occurred: the group of children for whom the secondary school was planned was greatly expanded, the "fitting" and "finishing" functions became oriented to each other, the importance of objectives was given recognition, explicit distinctions were made between ultimate and immediate objectives, the scope of conduct for which the school was designed to contribute preparation was extended, the concept of controls of conduct was changed, and within the secondary school a differentiation of objectives with respect to individual differences was made. These several phases of secondary-school development are naturally interrelated in the most complex manner. One can scarcely be considered without introducing the others. However, each is considered in turn in the following pages of this chapter.

Extension of the group of children for whom the secondary school is planned. Although the Committee of Ten explicitly rejected the principle that the dominant purpose of the secondary school is to prepare its students for college, they thought of the secondary school as being designed for "that small proportion of all the children in the country—a proportion small in number, but very important to the welfare of the nation—who show themselves able to profit by an education prolonged to the eighteenth year, and whose parents are able to support them while they remain so long at school."⁵

The Committee on College Entrance Requirements considered the secondary school primarily from the point of view of the college-preparatory function, but they seem to have thought of secondary education as being designed for a larger and less select group of children than did the Committee of Ten. "We must bear in mind that the vast majority of our pupils—those for whom the course should be planned—will not continue their education beyond the high school."⁶ "A very

⁵"Report of the Committee of Ten on Secondary School Studies." New York: American Book Company, 1894, p. 51.

⁶"Report of the Committee on College Entrance Requirements." Washington: National Education Association, 1899, p. 91.

large majority of the pupils who attend our secondary schools are of the middle class, a very respectable minority are of the poorer class, and only a small fraction are from the homes of the rich."⁷ One other "straw" pointing in the same direction is the following statement:

In pleading for uniformity in college-entrance requirements, there are a few vital facts which cannot be ignored: First, the triple function of the public high school, viz., to equip pupils for the business of life, to give a proper training to those who will teach in the common schools, and to prepare for college.⁸

The Commission on the Reorganization of Secondary Education stated that they favored "such reorganization that secondary education may be defined as applying to all pupils of approximately 12 to 18 years of age."⁹ This point of view is also reflected by other statements: "Since a large proportion of pupils leave school in each of the successive years, each subject should be so organized that the first year of work will be of definite value to those who go no further; and this principle should be applied to the work of each year."¹⁰ Furthermore, the Commission would have "suitable instruction" provided for "all pupils who are in any respect so mature that they would derive more benefit from the secondary school than from the elementary school."¹¹

These statements make it clear that in 1918 this group of leading thinkers in the field of secondary education definitely rejected the principle that the secondary school should be planned for a highly select group of children. They would have the curriculum planned for *all* pupils of secondary-school age rather than for the select group "who show themselves able to profit by an education prolonged to the eighteenth year, and whose parents are able to support them while they remain so long at school."

By 1918, this principle, which represents a revolutionary change in thinking about secondary education, had been accepted, at least in theory, by many local communities and was reflected in the more advanced educational practice. The trend since this date has been toward a more general acceptance and application of this principle in planning our program of secondary education. However, recent studies of the secondary-school population have revealed that the children attending high school still form a select group. In reporting a careful study of the high-school population in four representative cities, Counts says:

⁷*Op. cit.*, p. 41.

⁸*Ibid.*, p. 8. A quotation from a semi-official report of the chairman of the Committee on College Entrance Requirements in the *School Review* of June, 1896. Accepted and approved by the Committee.

⁹"Cardinal Principles of Secondary Education," *U. S. Bureau of Education Bulletin*, 1918, No. 35. Washington: Government Printing Office, 1918, p. 11.

¹⁰*Ibid.*, p. 17.

¹¹*Ibid.*, p. 19. Printed in italics in the original.

"In the light of the facts revealed in this study, it is clear that we are very far from the realization of this ideal [the universalization of education] in our own country, at least in so far as secondary education is concerned. . . . In a very large measure participation in the privileges of a secondary education is contingent on social and economic status."¹² This situation may be explained as the inevitable lag of practice behind theory, but it appears that those who plan our secondary schools are not thinking as yet in terms of "all the children of all the people." Occasionally the desirability of completely universalizing secondary education is frankly questioned. In most cases this has been prompted by the burden of taxation for public high schools, but other factors have contributed.

Subordination of the "fitting" function. In Chapter II it was shown that prior to 1893 most of the thinking about the objectives of the secondary school related to the conflict between the "finishing" and "fitting" functions. The Committee of Ten explicitly advocated the "finishing" function: "The secondary schools of the United States, taken as a whole, do not exist for the purpose of preparing boys and girls for colleges. . . . Their main function is to prepare for the duties of life. . . . The preparation of a few pupils for college or scientific school should in the ordinary secondary school be the incidental, and not the principal object."¹³ Furthermore, the Committee supported the proposition that when secondary-school courses were arranged in accord with the principles laid down by them, "the colleges and scientific schools should be accessible to all boys and girls who have completed creditably the secondary school course."¹⁴ The Committee of Ten also accepted the principle, "that every subject which is 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, no matter what the probable destination of the pupil may be, or at what point his education is to cease."¹⁵

In spite of these explicit pronouncements in favor of the "finishing" function of the secondary school, the Report appears to have encouraged domination by the colleges and scientific schools. This reaction was probably due to the fact that the Report designated the content of certain subjects and recommended four "school programmes." Furthermore, the personnel of the Committee and of the

¹²Counts, G. S. "The Selective Character of American Secondary Education," *Supplementary Educational Monographs*, No. 19. Chicago: University of Chicago, 1922, p. 149.

¹³"Report of the Committee of Ten on Secondary School Studies." New York: American Book Company, 1894, p. 51-52.

¹⁴*Ibid.*, p. 52.

¹⁵*Ibid.*, p. 17.

several conferences, the sponsorship of the National Education Association, and the publication of the report by the Federal Bureau of Education tended to make the recommendations authoritative. Since both the Committee of Ten and the several conferences were dominated by members from colleges, their recommendations had the approval of higher institutions, which were glad to utilize the Report as a means of promoting uniformity in secondary schools.

The influence of the Committee of Ten was supplemented by the recommendations of the Committee on College Entrance Requirements of the National Education Association,¹⁶ appointed in 1895 and reporting in 1899. With the assistance of committees of specialists, this committee outlined ideal and practical "courses of study" which constituted "so many national norms, or units, out of which any school may make up as rich a program of studies as its means and facilities permit; a program, moreover, which may be made to yield several curriculums, or, possibly, almost as many curriculums as there are students, each curriculum perhaps being better than the others, from an individual point of view."¹⁷ By defining "national norms, or units," in Latin, Greek, French, German, history, mathematics, and biological and physical science, all of which were already accepted college-preparatory subjects, the Committee on College Entrance Requirements assisted the high schools in fulfilling a "fitting" function. On the other hand, it gave little consideration to the "finishing" function. Of course, the Committee was not appointed to consider the latter, but even so, such a close relationship exists between the two functions (as was clearly recognized by the Committee of Ten) that it seems impossible to consider the one adequately without at least defining the accepted status of the other.

Broadly speaking, the period from about 1890 until about the end of the first decade of the twentieth century marked an ascendancy of the "fitting" function of public high schools. In other words, during this period the domination of secondary education by the colleges reached its high-water mark. However, the high schools were growing rapidly. Large numbers of pupils who had little or no intention of going on to college were attending the high schools, and tended to increase greatly the enrollment in the newer, more "practical" courses

¹⁶Cooperating committees of three members each were appointed by each of the four sectional associations: New England Association of Colleges and Preparatory Schools, Association of Colleges and Preparatory Schools of the Middle States and Maryland, North Central Association of Colleges and Secondary Schools, and Association of Colleges and Secondary Schools of the Southern States. Cooperating committees were also appointed by the Philological Association, Science Department of the National Education Association, the American Historical Association, the Modern Language Association, and the American Mathematical Society.

¹⁷"Report of the Committee on College Entrance Requirements." Washington: National Education Association, 1899, p. 43.

and to give them standing. A larger number of graduates of the high schools were going on to college, but many found entrance denied them because they had taken some of the "newer" subjects instead of those specified as prerequisites for admission to college.

By about 1910 the increase in the number of public high schools had placed them in a position to be independent of the colleges to a much greater degree than before. They were slowly awakening to a consciousness of their power and were becoming restive under the restraint of the colleges which they had previously accepted willingly, almost with avidity. On the other hand, the colleges, recognizing their dependence upon preparatory institutions, began to accede to the proposals of the high schools. A number of colleges, especially those occupying positions of leadership, such as Harvard and the University of Chicago, were coming to a different and more tolerant understanding of the high schools and were beginning to encourage them to redefine their purposes. The following statement epitomizes the position of the high schools with reference to the colleges in 1910. It was issued under date of May 7, 1910, by the High School Teachers Association of New York City.

We believe that the interests of the forty thousand boys and girls who annually attend the nineteen high schools of this city cannot be wisely and fully served under present college-entrance requirements. Our experience seems to prove the existence of a wide discrepancy between "preparation for life" and "preparation for college" as defined by college-entrance requirements.

The attempt to prepare the student for college under the present requirements and at the same time to teach him such other subjects as are needed for life is unsatisfactory. Under these conditions the student often has too much to do. The quality of all his work is likely to suffer. The additional subjects are slighted because they do not count for admission to college. In such a course it is impossible for the student to give these subjects as much time and energy as social conditions demand.¹⁸

On July 6, 1910, the Department of Secondary Education of the National Education Association adopted a resolution recommending a liberalizing of college-entrance requirements. This led to the appointment of the Committee of Nine on the Articulation of High School and College which reported to the Department at the meetings of July 11, 1911, July 9, 1912, and July 9, 10, and 11, 1913. From this committee sprang the Commission on the Reorganization of Secondary Education¹⁹ which took the point of view that they must consider all education (informal as well as formal) before formal education in general and secondary education in particular could be understood intelligently. They

¹⁸"Report of the Committee of Nine on the Articulation of High School and College," *Journal of Proceedings and Addresses of the National Education Association*, Vol. 49. Washington: National Education Association, 1911, p. 564.

¹⁹The chairman of the original Committee of Nine, Clarence D. Kingsley, was made chairman of the Commission.

postulated that there are three major factors to be considered: (1) changes in society, (2) changes in the secondary-school population, and (3) changes in educational thinking. From this foundation they formulated a statement of the goal of a democracy and of the function of education in general, enumerated seven objectives of all education, defined the role of secondary education in achieving these objectives in relation to the preceding and succeeding divisions of the educational system, and finally attempted to outline the nature of the administrative organization and curriculum of the high school which would be most effective in contributing to a realization of the objectives formulated.

The contributions of the Commission on the Reorganization of Secondary Education. The contributions of the Commission on the Reorganization of Secondary Education to an amicable settlement of the struggle between the "finishing" and "fitting" functions of the public high school may be summarized as follows:

1. The Commission defined the relation of secondary education to the other divisions of the educational system, saying that "the secondary school should admit all pupils who would derive greater benefit from the secondary than from the elementary school" and that "higher institutions of learning" should admit all "those whose needs are no longer met by the secondary school and are disposed to continue their education."

2. Subjects should be taught in the secondary school with direct reference to the probable vocational future of the pupils. For example, chemistry should be taught differently for agriculture, home economics, commercial, and college-preparatory students.

3. Curricula should be organized and named along vocational lines, e.g., home economics, industrial, commercial, and so forth, rather than in terms such as the Committee of Ten used.

4. Thus, the primary function of the high school is that of a "finishing" school with the "fitting" function secondary and incidental.

This is essentially a return to the fundamental position of the Committee of Ten, that "the secondary schools of the United States, taken as a whole, do not exist for the purpose of preparing boys and girls for colleges. . . . Their main function is to prepare for the duties of life. . . . The preparation of a few pupils for college or scientific school should in the ordinary secondary school be the incidental, and not the principal, object."

However, the two differed as to the proper means of attaining the end sought. The Committee of Ten held that the essential of sec-

ondary education was vigorous mental training which would prepare the mind to operate with equal efficiency in all adult activities. The Commission on the Reorganization of Secondary Education stood for extreme differentiation of the curriculum with reference to the probable vocational future of the pupils. Or, to state these two positions somewhat differently, the Committee of Ten held that: That education which fits best for college is also best for life; the Commission on Reorganization of Secondary Education held that: That education which will best develop an individual as a member of democratic society should be accepted by institutions of higher learning as satisfactory preparation for entrance.

Recognition of the importance of objectives. As the group of children for whom the secondary school was planned grew to include all children of secondary-school age and the "fitting" function came to take a subordinate position, educators recognized an urgent need to formulate more definite goals of secondary education. This increase in the recognition of the importance of objectives has been an important trend in our thinking about the objectives of the secondary school. Outside of statements relating to the general purpose of the secondary school, the Report of the Committee of Ten contains only incidental reference to objectives. In fact, the faculty psychology in terms of which the Committee and the members of the several conferences did their thinking eliminated much of the need for considering conduct objectives. The "trained faculties," which were accepted as the control objectives, were considered as general controls of conduct which, if acquired, would function in all activities of out-of-school life.

The "Cardinal Principles of Secondary Education" by the Commission on the Reorganization of Secondary Education in 1918 stands out in sharp contrast to the Report of the Committee of Ten. The former is primarily a statement of objectives, because the Commission regarded the formulation of objectives as fundamental. "No curriculum in the secondary school can be regarded as satisfactory unless it gives due attention to each of the objectives of education outlined herein."²⁰ "The objectives must determine the organization [of the curriculum] or else the organization will determine the objectives."²¹

It is significant that within a period of twenty-five years the leading thinkers about secondary education became conscious of the fundamental importance of determining objectives as a prerequisite step in selecting and organizing materials of instruction. The work of

²⁰"Cardinal Principles of Secondary Education," *U. S. Bureau of Education Bulletin*, 1918, No. 35. Washington: Government Printing Office, 1918, p. 20.

²¹*Ibid.*, p.27.

the Committee of Ten centered largely around the question: What topics, or parts, of the several subjects may reasonably be covered during the four years of the high school? They approached the task of curriculum construction from the point of view of the subject-matter specialist. Their interpretation of the question just stated might be expressed: What topics should be included in order to have a systematized and logical treatment of the subject? Some of the conferences, especially the one on "history, civil government, and political economy," appear to have given some consideration to the "practical" value of the subject-matter, but their point of view was primarily that of the subject-matter specialist. Twenty-five years later another group of leaders in secondary education approached the task of curriculum construction from a fundamentally different point of view. In effect, they accepted the principle that the purpose of secondary education should be recognized as the basic criterion in the selection of materials of instruction.

Explicit distinction between conduct and control objectives. Since 1893, and especially since the ascendancy of the "finishing" function, significant changes have been made in the concept of the objectives of secondary education. Among these changes is the tendency to distinguish between ultimate (conduct) objectives and immediate (control) objectives. This distinction was made by Herbart²² as early as 1835 and may be found in older writings. Thorndike pointed it out more than twenty years ago.

These aims of education in general—good will to men, useful and happy lives, and noble enjoyment—are the ultimate aims of school education in particular. . . .

The special proximate aims of school life from twelve to eighteen are commonly taken to be physical health and skill; knowledge of the simpler general laws of nature and human life and of opinions of the wisest and best; more effective use of the expressive arts; interests in the arts and sciences, and in human life both as directly experienced and as portrayed in literature; powers of self-control, accuracy, steadiness and logical thought, technical and executive abilities, cooperation and leadership; habits of self-restraint, honor, courage, justice, sympathy and reverence; and the ideals proper to youth.²³

The term "ultimate objectives" suggests goals to be attained at some time subsequent to the period of secondary education. "Immediate objectives" suggests those to be attained during this period. This

²²Herbart, John Frederick. (Translated and annotated by Lange, Alexis F. and De Garmo, Charles) *Outlines of Educational Doctrine*. New York: The Macmillan Company, 1901, p. 44-45.

This was originally published in 1835, with a second edition in 1841, as *Umriss pädagogischer Vorlesungen*, usually translated *Outline of Pedagogical Lectures*.

²³Thorndike, E. L. *The Principles of Teaching*. New York: A. G. Seiler, 1906, p. 3-4. S. C. Parker, in *Methods of Teaching in High Schools*, first published in 1915, emphasized this distinction.

interpretation appears to be rather generally accepted, but other differences are sometimes recognized. Probably the most helpful contrast is the one in which ultimate objectives are thought of as consisting of specifications of the out-of-school conduct or behavior of educated persons or groups of educated persons, and immediate objectives are considered to represent abilities or controls of conduct. According to this interpretation, the distinction is made on the basis of certain objectives being means for the realization of others, rather than on the basis of remoteness or nearness. It is of course true that no sharp line of demarcation can be drawn between the two types of objectives. If a description of conduct is made sufficiently detailed, it specifies abilities and hence is virtually a statement of immediate objectives. On the other hand, descriptions of abilities made in sufficiently general terms, tend to become ultimate objectives rather than immediate ones.

This interpretation of the terms "immediate objectives" and "ultimate objectives" is not generally recognized, but there is evidence that its recognition is growing. The present tendency toward very detailed and definite objectives is essentially an endeavor to specify the particular abilities to be engendered.²⁴ Since we appear to be moving toward this interpretation of the two types of objectives, the present writers are inclined to substitute "conduct objectives" and "control objectives" for the terms "immediate objectives" and "ultimate objectives."

Extension of the scope of conduct for which the secondary school should assume responsibility. Faculty psychology, in terms of which the Committee of Ten did their thinking, eliminated the necessity for an analysis of out-of-school conduct. "Trained faculties" were considered to constitute efficient equipment for all duties. Consequently, references to the scope of conduct are vague. In one place²⁵ the Report states that the "main function" of the secondary school is "to prepare for the duties of life," but there is no explanation of what the phrase, "duties of life," was intended to include. In summarizing the report of the Conference on History, Civil Government, and Political Economy, the Committee called attention to the Conference's "belief in the efficiency of these studies in training the judgment, and in preparing children for intellectual enjoyments in after years, and for the exercise at maturity of a salutary influence upon national affairs."²⁶ Vo-

²⁴The application of job-analysis techniques in determining the duties to be performed in a given field represents attempts to determine what items of conduct should be specified as ultimate objectives.

²⁵"Report of the Committee of Ten on Secondary School Studies." New York: American Book Company, 1894, p. 31.

²⁶*Ibid.*, p. 28.

cational activities, at least those classified as "professions," appear to have been recognized. Hence it is possible to identify three rubrics of adult conduct: leisure-time activities, citizenship, and occupations. These, however, were not clearly defined.

The Committee on College Entrance Requirements also did their thinking in terms of faculty psychology, tintured with Herbartianism, which *ipso facto* almost precluded their giving much consideration to analysis of out-of-school conduct. However, they did recognize the "later work of life," which seems to have meant work of a vocational nature, for they hastened to add "social and civil duties."²⁷ Elsewhere, in stating the case for economics, they remarked that "all citizens are called upon to take sides in the discussion and decision of important economic questions."²⁸ In discussing the prerequisites for technical schools, they recognized the contributions of high-school training for "professional careers."²⁹ They also placed value upon modern foreign languages as a foundation for "an accomplishment that may become useful in business and travel."³⁰ Thus, one may identify the same three rubrics of adult activities as those previously abstracted from the report of the Committee of Ten (leisure time, citizenship, and occupations) with the addition of an even more vaguely defined rubric, social activities.

In the second paragraph of the report of the Commission on the Reorganization of Secondary Education, attention is called to "three dominant phases of life" which demand a greater "degree of intelligence and efficiency on the part of every citizen" than can be secured through elementary education alone. The Commission continued by calling attention to the decrease in the education afforded by "social agencies other than the school" and the consequent necessity of recognizing other phases of life in thinking about the function of secondary education. The exposition of objectives is given in terms of seven rubrics of activities: (1) health, (2) command of fundamental processes, (3) worthy home-membership, (4) vocation, (5) citizenship, (6) worthy use of leisure, (7) ethical character.³¹

Although the report of the Commission on the Reorganization of Secondary Education represents a significant change from the thinking done by the Committee of Ten, recognition of the various phases of life was not new. In 1859, Herbert Spencer, writing on the topic,

²⁷"Report of the Committee on College Entrance Requirements." Washington: National Education Association, 1899, p. 155.

²⁸*Ibid.*, p. 40.

²⁹*Ibid.*, p. 25.

³⁰*Ibid.*, p. 80.

³¹"Cardinal Principles of Secondary Education," *U. S. Bureau of Education Bulletin*, 1918, No. 35. Washington: Government Printing Office, 1918, p. 10-11.

"What knowledge is of most worth?" enumerated the following groups of activities:

1. Those activities which directly minister to self-preservation;
2. Those activities which, by securing the necessities of life, indirectly minister to self-preservation;
3. Those activities which have for their end the rearing and discipline of offspring;
4. Those activities which are involved in the maintenance of proper social and political relations;
5. Those miscellaneous activities which make up the leisure part of life, devoted to the gratification of the tastes and feelings.³²

However, the point of view represented by this analysis does not appear to have particularly influenced educational thought until sometime after 1900. Franklin Bobbitt of the University of Chicago, was one of the first of our present authorities to apply it.³³ His most recent analysis represents a refinement of the statement by the Commission on the Reorganization of Secondary Education, and is designated as the "major fields of human experience."

1. Language activities; social intercommunication
2. Health activities
3. Citizenship activities
4. General social activities—meeting and mingling with others
5. Spare-time activities, amusements, recreations
6. Keeping one's self mentally fit—analogue to the health activities of keeping one's self physically fit
7. Religious activities
8. Parental activities, the upbringing of children, the maintenance of a proper home life
9. Unspecialized or non-vocational practical activities
10. The labors of one's calling³⁴

The North Central Association has adopted a similar, although much briefer analysis:

1. Health and physical fitness
2. Leisure time
3. Social relationships such as civic, domestic, community, and the like
4. Vocation³⁵

³²Spencer, Herbert. *Education, Intellectual, Moral and Physical*. New York: D. Appleton and Company, 1869, p. 13-14.

³³Bobbitt, Franklin. *The Curriculum*. Boston: Houghton Mifflin Company, 1918. 295 p. He made an analysis several years before the appearance of this book.

³⁴Bobbitt, Franklin. *How to Make a Curriculum*. Boston: Houghton Mifflin Company, 1924, p. 8-9.

³⁵"Report of the Committee on Standards for Use in the Reorganization of Secondary School Curricula," *The North Central Association Quarterly*, 1: 433, 438-44, March, 1927.

The extension of the scope of conduct for which the secondary school should assume responsibility, may be indicated by a brief résumé of the recognition accorded each of the seven phases of extra-school life noted by the Commission on the Reorganization of Secondary Education. At the time of the Committee of Ten *health* was given practically no recognition as a phase of out-of-school life to which secondary education should specifically contribute. Today, it has come to occupy a place of great prominence in our educational thinking. *Command of fundamental processes* is emphasized no more—perhaps less—than in 1893, but it has been reinterpreted. Today, we think of it chiefly in terms of the English language, while previously it was thought of in terms of Latin and algebra. *Worthy home-membership* may be said to be one of the phases of out-of-school life of which educationists are coming to be painfully conscious but about which they have done little, either by way of effective thinking or of practice. Probably the near future will see significant developments in this direction. *Vocation* has received marked reinterpretation and increased emphasis within recent years. At the time of the Committee of Ten, recognition of vocational preparation was limited in the main to commercial courses and to those having a preprofessional function. Since then, recognition of vocational objectives on the secondary-school level has grown until in 1918 the Commission on the Reorganization of Secondary Education strongly recommended that curricula be differentiated on a strictly vocational basis. *Citizenship* has always been recognized and accepted as a phase of life for which the secondary school should provide specific preparation. At the time of the Committee of Ten, the pronounced attitude was that the best citizen is the one who has the most knowledge and can use it most effectively, without much specification as to the kind of knowledge. The following statement appears to represent the attitude at that time:

The ultimity of the public school system is the propagation of worthy citizenship. National character is supremely modified by national culture. The people who think most and think best are going to make the history of the next era.³⁶

Later, the study of the machinery of government was emphasized as a means for attaining desirable citizenship behavior. Today social-political attitudes are being emphasized. In the main, the change with reference to citizenship has been in the means of attaining suitable

³⁶Giles, Edith. "Elective Study in the High School," *Education*, 14: 160, November, 1893.

conduct and not in the concept of the objective itself. *Worthy use of leisure*, although vaguely recognized in 1893, was not consciously striven for in the secondary school. Since then, it has been given much incidental attention, chiefly in connection with extra-curricular activities. Like worthy home-membership, this is an aspect of life that has attained prominence in educational talk, but about which little effective thinking has been done. *Ethical character* has always been recognized as a quality to be engendered by secondary education, but a clear definition of the term has been lacking. Recently, recognition appears to be somewhat more explicit; and attempts are being made to specify the conduct that belongs under the caption of "ethical character."

Changes in the concept of controls of conduct. The concept of controls of conduct held by the Committee of Ten was in terms of faculty psychology. The more important outcomes of the pupil's participation in learning activities were believed to be trained faculties, such as observation, memory, imagination, expression, inductive reasoning, deductive reasoning, judgment, and "sense of accuracy." In several places the report mentions "accurate knowledge," "mastered facts," and "information," but it is apparent that trained faculties were considered to be the principal outcomes and hence the principal control objectives.

At the time the Committee of Ten made its report, however, a movement was under way which later resulted in a different concept of the outcomes of learning and hence in a different concept of control objectives. Herbartian psychology was being introduced into the United States through the writings of Charles De Garmo, Charles McMurry, Frank McMurry, and others.³⁷ Herbart advanced the hypothesis that the outcomes of learning, and hence the controls of conduct, were ideas or knowledge. "In place of this [faculty psychology] Herbart substituted the conception that the soul is a unity, not endowed with intuitive or inborn faculties, but a blank at birth, possessing but one power,—that of entering into relation with its environment through the nervous system. . . . Through the expansion of the one original power the teacher has to develop *knowledge* from experiences and *sympathy* from intercourse [contact with society]."³⁸ Hanus quotes Herbart: "Thus to present the whole treasure of accumulated research in a concentrated form to the youthful generation is the highest service

³⁷These theoretical writings were supplemented by reports of several experiments which were interpreted as proving faculty psychology to be fallacious.

³⁸Monroe, Paul. *A Textbook in the History of Education*. New York: The Macmillan Company, 1905, p. 626-27.

which mankind at any period of its existence can render to its successors."³⁹ A recent writer describes Herbart's theory as follows: "The individual grows and matures through the acquisition of an ideational content, assimilated through a constantly more richly apperceived experience, instead of through the maturing development and modification of a complex set of capacities, abilities, and tendencies to respond to situations."⁴⁰

In *The Art of Study*, published in 1900, B. A. Hinsdale included a chapter with the title, "Is Knowledge or Mental Development the End of Teaching?" He quotes Compayré as saying: "There are those who wish above all to develop the intelligence; and there are others who are preoccupied with furnishing the mind with a stock of positive knowledge." He follows with the statement, "Both views are firmly rooted in language and mental habit."⁴¹

Shortly after 1900 Thorndike began to advocate his S-R bond theory, according to which the outcomes of learning consist of a multitude of bonds, each one being a connection between a particular stimulus (S) and a response (R). "Learning is connecting, and man is the great learner primarily because he forms so many connections. The processes [learning] operating in a man of average capacity to learn, and under the conditions of modern civilized life, soon change the man into a wonderfully elaborate and intricate system of connections. There are millions of them. . . . A volume could well be written showing in detail just what bonds certain exercises in arithmetic, spelling, German, philosophy, and the like, certain customs and laws, certain moral and religious teaching, and certain occupations and amusements, tend to form in men of given original natures."⁴²

In certain respects, this concept of the outcomes of learning is the opposite of that furnished by faculty psychology. According to the latter, the significant outcomes of learning are a few trained faculties; according to Thorndike's S-R bond theory, they consist of several millions of connections, each one of which is a bond between a particular situation or stimulus and a particular response.⁴³ Hence, as is frequently the case, the rejection of one point of view was followed by the opposite extreme.

³⁹Hanus, Paul H. *Educational Aims and Educational Values*. New York: The Macmillan Company, 1899, p. 34.

⁴⁰Kandel, I. L. (Editor). *Twenty-Five Years of American Education*. New York: The Macmillan Company, 1924, p. 97.

⁴¹Hinsdale, B. A. *The Art of Study*. New York: American Book Company, 1900, p. 31.

⁴²Thorndike, E. L. *Educational Psychology*. Briefer Course. New York: Teachers College, Columbia University, 1914, p. 173-74.

⁴³It is perhaps not fair to Thorndike to say that he conceives of the outcomes of learning entirely in terms of S-R bonds. In some places he uses terms that imply the opposite, but his S-R bond theory stands out so prominently in his own writing and has been so much emphasized by his followers that his influence upon thinking about control objectives has been much the same as it would have been if his hypothesis had limited the outcomes of learning to S-R bonds.

Turning from expositions of psychological theories to discussions of the objectives of secondary education, one finds that few, if any, of the writers have thought exclusively in terms of either Herbartian psychology or Thorndike's S-R bonds. Even some of the leading Herbartians appear to have included trained faculties, or at least something very similar to them, in their concept of the outcomes of learning. The following statements by De Garmo exhibit traces of faculty psychology: "Not only should the student gain a clear insight into the intellectual achievements of the race, but he should also acquire the *power* to use effectively the ideas thus gained."⁴⁴ "In all genuine education, mental discipline, like culture itself, is a necessary concomitant."⁴⁵ ". . . translation in language and the solving of examples in mathematics . . . have been—perhaps still are—the greatest instruments in the hands of the schoolmaster for effecting mental discipline."⁴⁶

Some writers, notably Bagley, have taken an eclectic position and have recognized three types of outcomes: specific habits, which conform very closely to Thorndike's S-R bonds; knowledge (ideas, concepts, and principles), which reflects Herbartian influence; general patterns of conduct, which fulfill a function similar to that assigned to trained faculties.⁴⁷ This eclectic hypothesis appears to be implicit in most of our present thinking of control objectives; but different writers vary in the emphasis placed upon the three rubrics of outcomes, especially when dealing with problems of secondary education.

Differentiation of objectives within the secondary school with respect to individual differences. So long as secondary education was intended for "that small proportion of all children in the country . . . who show themselves able to profit by an education prolonged to the eighteenth year, and whose parents are able to support them while they remain so long in school," so long as the scope of conduct for which education should prepare was included by the unanalyzed phrase "duties of life" for which "trained faculties" constituted the best preparation; there was no particular felt need of differentiating secondary education in order to train directly for variations in conduct. In so far as possible, our secondary schools were intended to produce

⁴⁴De Garmo, Charles. *Principles of Secondary Education*, Vol. II. New York: The Macmillan Company, 1908, p. 73. Italics not in original.

⁴⁵*Ibid.*, p. 158.

⁴⁶*Ibid.*, p. 174.

⁴⁷There is some evidence of Bagley's position in *The Educative Process*, 1905, but these rubrics of outcomes are more explicitly recognized in his *Educational Values*, published in 1911. He does not use the term, "general patterns of conduct," but his classification of outcomes can easily be arranged under the three rubrics given here. For an exposition of specific habits, knowledge, and general patterns of conduct, see:

Monroe, Walter S. *Directing Learning in the High School*. Garden City, New York: Doubleday, Page and Company, 1927, p. 30-31, 117-25, 149-62, 314-28.

a uniform product. Variations necessarily occurred, but secondary education was not concerned with regulating them. As the group for whom the secondary school was planned increased to include "all pupils of approximately 12 to 18 years of age," and as the scope of conduct was broadened to include all phases of life, the need for considering variations in conduct objectives became apparent. This need was accentuated by the emphasis of educational psychology on individual differences, by the development and acceptance of the concept that the needs of a democracy demand full development of the individual as such, and by the increased number of pupils attending secondary schools.

Thus, the Committee of Ten gave consideration to variations in conduct only to the extent that the individual differences due to native traits and economic conditions were to be accentuated by selection. No marked variations were to be fostered by the secondary school for those who secured a secondary-school education. Different "programmes of study" were proposed not so much to secure training for differences in future conduct as to assure a more effective training of the faculties of all who attended the secondary school.

The Committee on College Entrance Requirements accepted, but did not develop, the idea of variation of conduct on the basis of individual variation in abilities and aptitudes. However, they gave little consideration to the social desirability of variability or of homogeneity. They quoted and endorsed the following statements:

"It is generally admitted that, until secondary education commences, children should have much the same training; yet even in the lowest grades individual direction should not be lost sight of, as the mind very early gives evidence of a divine implanting which must not be ignored. Thruout the course of secondary instruction, surely, there must be no Procrustean bed which every pupil by some process of dwarfing or stretching must be made to fit, but natural endowments, as soon as discovered, should have full scope, within certain limitations. College courses ought to be so adjusted that every pupil at the end of a secondary course recognized as excellent, both in the quality and quantity of its work, may find the doors of every college swing open to receive him into an atmosphere of deeper research and higher culture along the lines of his mental aptitudes. We do not mean that secondary programs should be purely elective, but that they should be eminently elastic and that this elasticity, based upon psychological laws, should be recognized by the colleges."⁴⁸

"... secondary programs of study should be thoroly elastic and with varied electives, suited to the talents of the individual child; a college program should be still more elastic and with a larger number of electives. Every person will then find opportunities for the development of that power which will enable him with confidence to attack the problems of life which he wishes to help to solve."⁴⁹

⁴⁸"Report of the Committee on College Entrance Requirements." Washington: National Education Association, 1899, p. 7.

⁴⁹*Ibid.*, p. 8.

The Commission on the Reorganization of Secondary Education, through explicit recognition of individual differences and the desirability, especially in a democracy, of fostering development of diverse abilities along with integrating characteristics, placed considerable emphasis upon the specializing, differentiating function of secondary education. They would provide for similar conduct on the part of all through subjects that they called "constants." By means of "curriculum variables," they would provide for variations in vocations. Through "free electives," they would provide for development of a wide diversity of leisure-time activities.

The variations in conduct for which the Commission would have the secondary-school prepare are based in the main upon variations in interests, aptitudes, and tastes, and very little upon general native ability. The latter is only hinted at in such phrases as "maximum and minimum assignments for pupils of greater and less ability." Examination of other writings and educational practice reveals marked tendencies to take account of individual differences, either by directing education so as to level up those at the lower levels of intelligence and thus prepare for similar conduct, or by directing education so as to produce a widely varying product in accord with the varying capacities of the pupils. Wherever the same materials of instruction are offered to all children, wherever the only provision for individual differences in ability is variation in the rate of progress, wherever no attempt is made to provide additional or different materials, the purpose of the school is, at least by inference, to prepare for similar conduct. About the only provision made for variation in such cases—a provision that creeps in inadvertently, although irrepressibly—is variation in the standard of achievement.

When provisions for individual differences first attracted marked attention, the emphasis was given to bringing the less capable up to a level comparable with that attained by the more capable. More recently, the pendulum has swung toward attention to the gifted. The Committee on College Entrance Requirements proposed only that the gifted be accelerated. Since then, a certain prominence has been attained by the idea of enriched curricula and preparation of the superior for special positions in life, particularly positions of leadership.

The discussion of the function of the school relative to preferences in regard to variations in conduct given by Bobbitt⁵⁰ is representative of the better educational thinking on this subject. He speaks in terms of control objectives and learning activities, but inasmuch as the abil-

⁵⁰Bobbitt, Franklin. *How to Make a Curriculum*. Boston: Houghton Mifflin Company, 1924, p. 41-42, 61, 66, 71-72.

ities engendered determine conduct, variations in conduct are easily and naturally inferred. He points out that even in the nine fields of non-specialized functional activities those individuals of large natural capacity must be expected to develop types of ability that are not attainable by the weaker. The same holds also for specialized vocational activities. By way of example, he points out certain abilities in which only those of large intellectual caliber can attain adequate proficiency to warrant much formal training: ability to read a foreign language; ability to do public speaking; and a broad vision of social affairs, historical and sociological.⁵¹

The procedure for determining objectives. The trends of objectives since 1893 are reflected in the contrast between the lack of technique for determining objectives at that time and the procedures employed at present. A brief presentation of the outstanding characteristics of these procedures will reinforce the preceding discussion of trends and present status of objectives. As long as the control objectives were thought of in terms of trained faculties, their determination did not constitute a serious problem. The number of faculties recognized was relatively small and could be determined in an "arm-chair" fashion. The control objectives for different subjects overlapped greatly and for certain subjects were identical. Since trained faculties were of general applicability, there was no need to consider conduct objectives.

Acceptance of the Herbartian theory of the outcomes of learning created the problem of determining what "ideas" should be recognized as control objectives. In effecting a selection, the Herbartians emphasized children's interests as criteria, but they considered it essential that the "ideas" be practical. Although no systematic procedure was evolved, Herbartian theory influenced thinking about the content of several secondary subjects, especially the newer ones such as general science, agriculture, and home economics.

Acceptance of the thesis that the school should prepare children for socially efficient participation in out-of-school life implies that society is the source of objectives and that they may be determined by an analysis of extra-school life. A beginning is made when the major fields of human experience are identified as by Bobbitt, the North Central Association, or the Commission on the Reorganization of Secondary Education. (*See* p. 41-42.) Bobbitt has described the general procedure by which this analysis of out-of-school life is to be accomplished. "Human life, however varied, consists in the performance of

⁵¹Bobbitt. *Op. cit.*, p. 41-42.

specific activities. . . . they can be discovered. This requires only that one go out into the world of affairs and discover the particulars of which these affairs consist."⁵² These "particulars" will be conduct objectives which may be classified under a list of captions such as is given on pages 41-42. After one has discovered the specific activities he "can then see the [control] objectives of education. These latter are the *abilities* to perform in proper ways the activities. The two are cognate but not identical."⁵³ These statements describe the essentials of the "job-analysis" technique.

Charters describes four methods of "job analysis" or "activity analysis":

1. "Introspection," in which a participant in the job lists all of the activities or duties of which he can think;
2. "Interviewing," in which a trained interviewer "asks the individual on the job to give a list of his duties";
3. "Working on the job," which is a modified form of introspection;
4. "Questionnaire," which is essentially a type of interviewing.⁵⁴

If job-analysis studies are examined, it is possible to identify two other methods:

5. Observing workers and noting the particular duties they perform;
6. Analyzing records of activities performed.⁵⁵

In 1918, Charters⁵⁶ listed fifty-six studies, and since that date, a much larger number have been made.⁵⁷ A majority of these studies relate to the elementary school, but several are in the field of secondary education.

In a recent publication, Bobbitt⁵⁸ has given the results of five studies in which records of "contemporary life" were analyzed into the "major fields of human concern." In the first, the articles listed in the *Reader's Guide to Periodical Literature* for the years 1919-21 were classified under 46 general topics. Since the various publications

⁵²Bobbitt, Franklin. *The Curriculum*. Boston: Houghton Mifflin Company, 1918, p. 42.

⁵³Bobbitt, Franklin. *How to Make a Curriculum*. Boston: Houghton Mifflin Company, 1924, p. 10.

⁵⁴Charters, W. W. *Curriculum Construction*. New York: The Macmillan Company, 1923, p. 38.

⁵⁵Fragmentary studies have been made in the "fundamental processes" (arithmetic, language, reading, and spelling) and in some of the other subjects. A good illustration of this method is furnished by studies in spelling. Investigators have collected writings of children and adults and have listed the words actually used. The resulting lists constitute a description of spelling activities. The method has also been applied to arithmetical activities and to the reading of newspapers and other periodicals. In the case of some mechanical activities, such as brick-laying, a motion-picture camera has been used to secure the record. Certain occupational "jobs," such as pharmacy, selling shoes, office management, and the like, have been analyzed so as to show the specific duties to be performed.

⁵⁶Charters, W. W. *Curriculum Construction*. New York: The Macmillan Company, 1918, p. 114-17.

⁵⁷For a list of the more important investigations, see:

"Curriculum-Making: Past and Present." *Twenty-Sixth Yearbook of the National Society for the Study of Education*, Part I. Bloomington: Public School Publishing Company, 1926, p. 464-75.

⁵⁸Bobbitt, Franklin. "Curriculum Investigations," *Supplementary Educational Monographs*, No. 31. Chicago: University of Chicago, 1926. 204 p.

TABLE V.—THE MAJOR DIVISIONS OF HUMAN EXPERIENCE AS REVEALED BY THE TOPICS TREATED IN THE "LITERARY DIGEST"^a

	Frequency	Per Cent
1. Government and diplomacy: foreign government and international diplomacy, United States politics and government	7,501	17.7
2. Large group friction and adjustment: war and the control of war, population migrations and racial relations, capital and labor	5,226	12.4
3. Literature, art, and recreation: language, literature, and the fine arts; sports, travel, and exploration	4,882	11.5
4. The economic order: business, commerce, industry, and agriculture; development and conservation of resources	4,626	10.9
5. The physical sciences and their applications: the physical sciences; communication and transportation; mechanics, invention, and engineering	4,550	10.8
6. Intimate glimpses of human action: intimate group glimpses of humanity, personals	4,439	10.5
7. Religion and philosophy	3,719	8.8
8. Family and community welfare: family and community social welfare, law and order; physical safety; education	3,710	8.8
9. The science and natural history of living things: health, the science of man (not including health), animal and plant life	3,655	8.6
Total	42,308	100.0

^aBobbitt, Franklin, and others. "Curriculum Investigations," *Supplementary Educational Monographs*, No. 31. Chicago: University of Chicago, 1926, p. 43.

whose contents are listed in the *Reader's Guide* "constitute a continuous mirror of the world's action and of the things and relations with which that action deals," this tabulation furnishes an epitome of the world of affairs; that is, what people are doing, thinking, and feeling.⁵⁹ Similar analyses were made of two volumes of the *New York Times* (April to June and October to December, 1924), the list of ten thousand and most frequently used words prepared by Thorndike,⁶⁰ a random sample of *The Encyclopaedia Britannica* totaling 7,370 pages, and the complete files of the *Literary Digest* for 1900 to 1924 plus a random sample for the ten years previous to 1900. A condensed summary of the analysis of the *Literary Digest* is reproduced in Table V, which is to be read: Of the 42,308 articles appearing in the *Literary Digest*, 7,501 or 17.7 per cent related to that "major division of human experience" which may be labeled "government and diplomacy," including foreign government and international diplomacy and United States politics and government. The remainder of the table should be read in similar manner. In general, this tabulation appears to be fairly representative of the other analyses with the exception of the one based on *The Encyclopaedia Britannica* in which "geographical areas and places," and "biographies of persons" headed the list. The uniqueness of this list is to be expected since an encyclopedia is not so much a

⁵⁹Vocational activities are undoubtedly minimized.

⁶⁰Thorndike, E. L. *The Teacher's Word Book*. New York: Teachers College, Columbia University, 1921. 134 p.

record of contemporary life as an epitome of the world's accumulation of knowledge.

Any analysis of contemporary life as a means of determining objectives implies the assumption that what is, should be. However, it is generally accepted that schools are preparing for future conduct; that they have been set up not merely to preserve the best of society's achievements but also to make for progress; and that therefore, the determination of objectives should be guided by a concept of the ideal, rather than by the existing, social order. In consequence, the usual job-analysis technique is coming to be supplemented by another intended to provide this forward look. Rugg⁶¹ describes such a procedure applied to the field of the social studies. The assumption is made that the persons best qualified to express judgments in regard to the "insistent problems and issues of the day," with which "the growing generation will [probably] have to grapple," and in regard to the changes that should be made in current modes of living, are the "frontier thinkers" of today. These are our leading students of government, world politics, economics, sociology, and the like. Hence, as a basis for determining the conduct objectives in the field of social studies, Rugg selected the "important" books in this field. These books, totaling more than one hundred and fifty, were "critically analyzed" to determine the "insistent problems and issues of the day."

The difference between Rugg's procedure and the usual job-analysis method is significant. Both involve analysis, but the materials analyzed are different. The usual job-analysis study gives merely an analytical description of a typical, or at best a selected, phase of contemporary life. Rugg's method gives a list of conduct objectives based upon the composite judgment of outstanding authorities in regard to the kind of social group that we should endeavor to build up and perpetuate.

In addition to systematic job-analysis studies, there have been several significant investigations in which other procedures have been employed to determine objectives. In 1924 Bobbitt published an extensive list of objectives which represented the product of "twelve years of cooperative effort on the part of some fifteen hundred mem-

⁶¹Rugg, H. O. "Problems of Contemporary Life as the Basis for Curriculum-Making in the Social Studies." *Twenty-Second Yearbook of the National Society for the Study of Education*, Part II. Bloomington: Public School Publishing Company, 1923, p. 260-73.

See also:

Hockett, John A. "A Determination of the Major Social Problems of American Life." *Teachers College, Columbia University Contributions to Education*, No. 281. New York: Bureau of Publications, Columbia University, 1927. 101 p. A list of 396 problems and issues is given.

bers of graduate classes in "The Curriculum" and of "some twelve hundred high-school teachers in Los Angeles."⁶² Other techniques might be described. However these are the major ones employed: examination of the technique employed in simple job or activity-analysis, analysis of future jobs or activities by "frontier thinkers," cooperative formulation of objectives by educators, and analysis of the records of contemporary life. Practically any specific instance of the determination of objectives is a variant or modification of one of these, or a combination of two or more of them.

Concluding statement. Although present-day thinking relative to the objectives of secondary education is admittedly inadequate, a survey of educational thought and practice since the Report of the Committee of Ten in 1893 reveals many marked changes which appear to represent progress. The following significant trends in thinking may be identified.

1. The group of children for whom the secondary school is designed has changed from "that small proportion of all the children in the country . . . who show themselves able to profit by an education prolonged to the eighteenth year, and whose parents are able to support them while they remain so long at school" to "all pupils of approximately 12 to 18 years of age . . . or who are in any respect so mature that they would derive more benefit from the secondary school than from the elementary school."

2. At the beginning of this period, the "fitting" and "finishing" functions of the secondary school were in sharp conflict. Today the "fitting" function has become definitely subordinated to the "finishing" function.

3. The recognition of the importance of objectives grew from no specific mention of them as such by the Committee of Ten to the very marked emphasis given them by the Commission on the Reorganization of Secondary Education.

4. Refinement in thinking relative to objectives has progressed to the point where an explicit distinction is made between conduct objectives and control objectives.

5. The scope of conduct for which it is considered desirable that the secondary school should prepare has broadened out from leisure-time, citizenship, and vocational activities (all conceived of in a very limited way) to include all phases of out-of-school life.

⁶²Bobbitt, Franklin. *How to Make a Curriculum*. Boston: Houghton Mifflin Company, 1924. 292 p. Much of this material was previously published in monograph form as a report of curriculum-making in the secondary schools of Los Angeles, California.

6. The concept of the controls of conduct has changed from that of general faculties to that of more specific abilities—specific habits, knowledge, and general patterns of conduct.

7. The recognition of individual differences within the secondary school has grown from an implied uniformity of objectives by the Committee of Ten to recognition by the Commission on the Reorganization of Secondary Education of the desirability of great variability on the basis of individual differences—differences in interests, aptitudes, tastes, and general native ability.

8. Finally, with the growing recognition of the importance of objectives, many techniques have been developed for the determination of objectives, most of them being based upon the fundamental proposition that objectives are to be “discovered” in society, not manufactured.

CHAPTER IV

CURRICULUM RECONSTRUCTION: SELECTION AND ORGANIZATION OF MATERIALS OF INSTRUCTION, ASSUMING A FOUR-YEAR HIGH SCHOOL

Relation of the organization of our educational system to curriculum construction. Our educational system developed as three more or less distinct units, elementary school, grades one to eight; high school, grades nine to twelve; college and university, grade thirteen and above. This organization prevailed generally until after 1900 and is still retained in some cities and in most rural communities. At the time the Committee of Ten was appointed, a few educators were pointing out that this type of organization did not facilitate the functioning of the curriculum as well as it should. Since then, the public schools in many of our cities have been reorganized by an extension of the high school downward. The most usual type consists of an elementary school, grades one to six; a junior high school, grades seven to nine; and a senior high school, grades ten to twelve. This is commonly designated as the 6-3-3 plan. A few cities have added a junior college offering two years of work. This usually results in a type of organization described as the 6-3-3-2 plan. The suggestion has been made that when a junior college is included, a 6-4-4 plan of organization would be more effective.

The administrative organization of a school system influences the curriculum. The continuance of the existing organization favors the established curriculum; whereas, changes in administrative organization encourage curriculum reconstruction and make possible changes that could not be effected under the old organization. Consequently, it is desirable to consider separately the curriculum reconstruction which assumes the traditional organization and that which assumes a downward and upward extension of the high school to include grades seven to twelve or fourteen. The present chapter deals with the reconstruction of the curriculum under the first condition. Reconstruction in conjunction with administrative reorganization will be considered in Chapter V.

Types of changes in materials of instruction. The changes which have occurred in the selection and organization of materials of instruction may be classed under two major heads: (1) changes involving subjects as units, and (2) changes in the content of subjects. Each of these two major types may be analyzed into several sub-types, each of which is discussed in the following paragraphs. An analysis of

the factors instrumental in bringing about these changes is then presented.

Changes involving subjects as units. Curriculum changes involving subjects as units are of two principal types: (1) introduction and elimination of subjects, and (2) organization of subjects into courses. Evidence relative to the first type of change is presented under the following captions: (a) subjects recommended by the Committee of Ten, (b) subjects recognized by the Commission on the Reorganization of Secondary Education, (c) additional evidence of the expansion of the curriculum, and (d) upward and downward trends of subjects. The organization of subjects into courses is dealt with under the captions: (a) parallel courses, (b) the elective system, and (c) differentiated curricula.

Subjects recommended by the Committee of Ten. The recommendation for the appointment of the Committee of Ten by the National Education Association in 1892 included the statement: "It is expedient to hold a conference of school and college teachers of each principal subject which enters into the programmes of secondary schools in the United States and into the requirements for admission to college."¹ After its appointment, the Committee instituted an inquiry to ascertain the principal subjects taught. Information secured from forty "leading secondary schools" showed that the total number of subjects "was nearly forty, thirteen of which, however, were found in only a few schools. . . . Many of these subjects were taught for such short periods that little training could be derived from them . . . the time allotted to the same subject in the different schools varied widely."² On the basis of this information, the Committee organized the following subject-group conferences:

1. Latin
2. Greek
3. English
4. Other modern languages
5. Mathematics
6. Physics, astronomy, and chemistry
7. Natural history (biology, including botany, zoology, and physiology)
8. History, civil government, and political economy
9. Geography (physical geography, geology, and meteorology)

The several conferences recognized the subjects presented in Table VI "as proper for secondary schools." In some cases, two subjects are recommended as options; that is, the school is to offer one or

¹"Report of the Committee of Ten on Secondary School Studies." New York: American Book Company, 1894, p. 3.

²*Ibid.*, p. 5.

TABLE VI.—SUBJECT AND TIME RECOMMENDATIONS OF THE CONFERENCES OF THE COMMITTEE OF TEN^a

Subject	Time		
	Years	Periods Per Week	Year-Periods
Latin.....	4	5	20
Greek.....	{ 1 2	5 4	5 8
English			
Literature.....	4	3	12
Composition.....	{ 2 2	2 1	4 2
Rhetoric.....	1	1	1
Grammar.....	1	1	1
Modern Languages ^b			
German.....	4	4	16
French.....	4	4	16
Mathematics			
Algebra.....	2	5	10
Higher Algebra.....	1½	2	1
Geometry.....	1	5	5
Trigonometry.....	½	5	2½
Bookkeeping and commercial arithmetic.....	1	5	5
Physical science			
Physics.....	1	5	5
Chemistry.....	1	5	5
Astronomy.....	½	5	1½
Natural History			
Botany.....	1	5	5
Zoology.....	1	5	5
Anatomy, physiology, and hygiene.....	½	5	2½
Geography			
Meteorology.....	½	3	1½
Geology.....	½	3	1½
Physiography.....	½	3	1½
History			
French.....	1	3	3
English.....	1	3	3
American.....	1	3	3
"A special period intensively, and civil government".....	1	3	3
Total.....			149½
Year-subjects, 5 periods per week.....			29½

^aThis table is made up from data presented in Tables I and II of the "Report of the Committee of Ten on Secondary School Studies." New York: American Book Company, 1894, p. 34-35, 37.

^bThe recommendations we have made for French and German apply also to Spanish and to any other modern language that may be introduced into high or grammar schools." *Ibid.*, p. 103.

the other but not both. For example, this is the recommendation in the case of geology and physiography. If optional subjects are included, the subjects recommended by the several conferences total 149½ year-periods or approximately 30 year-subjects, 5 periods per week. This statement describes quantitatively the subjects (materials of instruction) that in the judgment of the several conferences were suitable for inclusion in the secondary curriculum. Other subjects were

being taught in the high schools in 1893. As was shown in Chapter II, pages 20-23, many of them had been taught for several years previously. The Committee of Ten explicitly recognized this fact,³ but they believed that "some of the omitted subjects would be better dealt with" if included in certain other specified subjects rather than if taught separately. In this connection, drawing, both freehand and mechanical, ethics, economics, metaphysics, æsthetics, and industrial and commercial subjects were mentioned.

Subjects recognized by the Commission on the Reorganization of Secondary Education.⁴ The Commission on the Reorganization of Secondary Education, like the Committee of Ten, organized subject committees. The groups of subjects thus recognized are indicative of the status of the secondary curriculum in 1912 when the work of the Commission was organized. The subject committees were as follows:

1. Agriculture (New)
2. Art education (New)
3. Business education (New)
4. Classical languages (corresponds to the Latin and Greek conferences of the Committee of Ten)
5. English
6. Household arts (New)
7. Industrial arts (New)
8. Mathematics
9. Modern languages
10. Music (New)
11. Physical education (New)
12. Sciences (corresponds to three of the conferences of the Committee of Ten)
13. Social studies

The Commission recognized seven subject-matter fields⁵ in addition to the nine recognized by the Committee of Ten. However, by making certain combinations, they allotted the total of sixteen subject-matter fields to thirteen committees. In reporting, these committees made no attempt to be explicit in their subject recommendations and hence it is not possible to present a table of subject and time recommendations as was done for the Committee of Ten.

Additional evidence of the expansion of the curriculum. Evidence relative to the present range of the secondary-school curriculum

³"Report of the Committee of Ten on Secondary School Studies." New York: American Book Company, 1894, p. 49.

⁴No discussion is presented of the subjects recognized by the Committee on College Entrance Requirements, inasmuch as little was added by them to the recommendations of the Committee of Ten. Recommendations were made by this committee of 1899 for Latin, Greek, German, French, history (four units), mathematics, geography, chemistry, botany, zoology, and physics. They expressed regret for not having included geology, astronomy, and physiology. They also called attention to having omitted the commercial subjects, there being some doubt as to the advisability of accepting such subjects for college admission.

⁵These are labeled "new" in the preceding list.

is furnished by a recent study of college-entrance requirements.⁶ Data were secured from 314 of the 349 "Accredited Higher Institutions" appearing in the 1922 list of the American Council of Education. Of these colleges, 273 specified the "subjects recognized as suitable for satisfying college entrance requirements." The total number of subjects listed in 1922 was 111.⁷ The number of units per subject was not given but it is unlikely that less than half-units were accepted. It is evident that some of the subjects, such as Latin, included as many as three or four units. Hence, the total number of units was probably greater than 111. Forty-three of the subjects were distributed as follows:

English—4 subjects
 Mathematics—5 subjects
 Foreign languages—13 subjects⁸
 Social science—12 subjects
 Science—9 subjects

The remaining 68 subjects are given below:⁹

Household Arts:

Sewing
 Cooking
 *Millinery
 Clothing
 Shelter
 Foods

Manual Training:

Drawing—
 Freehand
 Mechanical
 Architectural
 *Mathematical
 Geometrical

Forge
 Foundry
 Woodwork
 Wood carving
 Metal work
 Chipping, filing, fitting
 Machine tool practice

Commercial:

Stenography
 Typewriting
 Business correspondence
 Bookkeeping
 Accounting
 Office practice
 Materials of commerce
 Commerce
 History of commerce
 Commercial geography
 Commercial arithmetic
 Commercial law
 Economic history
 Banking
 *Salesmanship
 Business organization
 Economic geography

Music:

Harmony
 Counterpoint

⁶McKown, H. C. "The Trend of College Entrance Requirements 1913-1922," *U. S. Bureau of Education Bulletin*, 1925, No. 35. Washington: Government Printing Office, 1925, 172 p.

⁷*Ibid.*, p. 95. A language, such as Latin, or German, is counted as one subject.

⁸Thirteen different languages were acceptable, with probably no less than two units for each.

⁹The starred (*) subjects have become college-entrance subjects since 1913.

Music: (Continued)	*Farm accounts
Appreciation	Vegetable gardening
Dictation	*Argumentation, debating
Sight singing	*Reserve Officers' Training
Vocal	Corps
Instrumental	Surveying
Club, etc.	*Sunday-school work
Normal Training:	Art
Methods and management	*Modeling
History of Education	*Military science
Teaching training	History of art
Education	*History of science
Psychology	Bible
Miscellaneous:	Public speaking
Geography	Elementary law
Christian doctrine	Bird life
Agriculture	Nature study
	*Physical education

Counts made a study of the unit courses offered in the high schools of fifteen large cities in 1923-24.¹⁰ The minimum, maximum, and average number of units of work offered in the several groups of subjects in these cities are given in Table VII. A great variation in practice is shown, but the table makes clear that in these cities a wide range of subjects was offered. The minimum curriculum, in Pueblo, contained 51 units, and the maximum, in Los Angeles, 127½. It is not possible to make direct comparison of these data with the recommendations of the Committee of Ten. However, comparison may be made with the data presented in Chapter II relative to the situation just prior to 1893. Examination of those data reveals that the average for the thirty cities was twenty-three subjects totaling only seventeen and one-half units per city, which is roughly comparable to the average of seventy-nine units found by Counts. Probably the growth in subject offerings was not as great as this difference indicates, since the cities studied by Counts are somewhat larger than those studied by Stout. Nevertheless, the secondary-school offerings must have at least doubled in the period between 1893 and the present.

During the five-year period from 1918-19 to 1923-24, sixty-four subjects were added to the high-school curricula in this group of cities, and only fourteen subjects were abandoned.¹¹ The most numerous changes were in the fields of home economics, commercial subjects,

¹⁰Trenton, New Jersey; Atlanta, Georgia; New Orleans, Louisiana; St. Louis, Missouri; Kansas City, Missouri; Pueblo, California; Los Angeles, California; Berkeley, California; Salt Lake City, Utah; Lincoln, Nebraska; Joliet, Illinois; Cleveland, Ohio; Detroit, Michigan; Rochester, New York; and Newton, Massachusetts.

Counts, George S. "The Senior High School Curriculum," *Supplementary Educational Monographs*, No. 29, Chicago: University of Chicago, 1926. 160 p.

¹¹*Ibid.*, p. 123.

TABLE VII.—MINIMUM, MAXIMUM, AND AVERAGE NUMBER OF UNITS OF WORK^a OFFERED IN THE HIGH SCHOOLS OF A GROUP OF FIFTEEN LARGE CITIES, 1923-24^b

Subject or group	Number of units		
	Minimum	Maximum	Average
1. English.....	4½	10	7
2. Foreign language.....	10	15	12½
3. Mathematics.....	3½	6	5
4. Natural science.....	4	7½	6
5. Social science.....	4	7½	5½
6. Commercial subjects.....	8	16	12
7. Industrial arts.....	2	27	13
8. Home economics.....	2	11	5½
9. Music.....	..	12½	4½
10. Art.....	..	12	4
11. Physical education.....	1	6	3
12. Miscellaneous.....	..	6	1
Total.....			79

^a"A unit of work involves four or five recitations a week for an entire school year."

^bTaken from:

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

and industrial arts. Six of the fourteen subjects abandoned were listed under Greek or German. The others appear to be the result of reorganization rather than of complete elimination. Most of the subjects added may be grouped under three general types: (1) subjects whose status may be considered as established: economics, civics, German, modern history, trigonometry, sociology, general science, and biology; (2) differentiations of established subjects: industrial English, industrial mathematics, household chemistry, business English, and several other subjects in commerce, industrial arts and home economics; (3) essentially new subjects: home nursing, vocations, stagecraft, and Red Cross. For the most part, the subjects added appear to represent differentiations of certain established subjects rather than the introduction of essentially new types of school work.

Examination of the reports of the United States Commissioner of Education from 1890 to 1922 reveals that for the school year 1889-90 the enrollment was reported for only nine subjects in public secondary schools; for 1894-95, sixteen subjects; for 1899-1900 and 1904-5, eighteen subjects; for 1909-10, twenty-four subjects; for 1914-15, thirty subjects; and for 1921-22, seventy subjects. These figures cannot be taken at quite their face value, for there were many subjects taught in 1889-90 which were not reported. The Commissioner's reports varied in completeness from time to time until in 1921-22 when there was an evident attempt to enumerate every secondary-school sub-

ject. However, this increase from nine to seventy reported subjects is indicative of a marked growth in subject offerings of the secondary school.

Upward and downward trends of subjects. Koos demonstrates the downward shift of the "materials of the college curriculum" during the period of about 1830 to 1900 by showing that English grammar, geography,¹² algebra through quadratics, plane geometry, ancient history, French, German and English literature were inherited by the secondary school from the college, and that many others, such as solid geometry, trigonometry, college algebra, analytic geometry, physics, chemistry, the biological sciences, economics, sociology, and many history courses accompanied or closely followed these in their drop from the superior to the lower unit. He then makes the following summary statement:

Except for the classics all important courses and subjects finding place in college curricula during any considerable period have shown a marked tendency to shift to lower levels. This shift has not stopped at the freshman year of college, but has continued into the secondary unit below, including both subjects prescribed for college entrance and a host of others not—at least not often—prescribed.¹³

Koos has interpreted these changes in subjects offered as a tendency to make a "people's college" out of the high school.

Stout has made a study of the subject offerings of the high school for a period which overlaps somewhat the period of 1830 to 1900 discussed in the preceding paragraphs but which brings the data nearer the present. Table VIII presents facts from Stout's study relative to the appearance and disappearance of subjects in the secondary-school curriculum during the period 1891 to 1918. It is apparent that, so far as these particular North-Central schools are concerned, of the subjects which disappeared from the secondary-school curriculum, some, such as mensuration and astronomy, were never prominent; others, such as English grammar, were prominent for a short time only. It reveals that some subjects, such as general science, civics, and Spanish, made their appearance during this period and have achieved considerable importance; whereas a few appeared but have attained little prominence.

Apparently some subjects, such as astronomy and geology, which virtually disappeared during this period, became confined to the college level, never having become typically secondary. Others, such as arith-

¹²English grammar and geography eventually became distinctively elementary-school subjects.

¹³Koos, Leonard Vincent. "The Junior College," *Research Publications of the University of Minnesota*, Education Series, No. 5, Vol. I-II. Minneapolis: University of Minnesota, 1924, p. 262.

TABLE VIII.—PER CENT OF SCHOOLS OFFERING THE DIFFERENT SUBJECTS DURING THE SEVERAL PERIODS FROM 1891 TO 1918^a

Subjects	1891-95	1896-1900	1906-11	1915-18
Mathematics				
Arithmetic.....	70	65	45	30
Algebra.....	100	100	100	100
Plane Geometry.....	15	25	100	100
Solid Geometry.....	17.5	22.5	90	97.5
Geometry.....	82.5	72.5	...	...
Trigonometry.....	20	22.5	50	50
Mensuration.....	2.5	...	...	...
College Algebra.....	...	...	7.5	7.5
English				
Grammar.....	35	35	2.5	...
Analysis.....	2.5	2.5	...	...
Word Analysis.....	10	12	...	...
Reading.....	2.5	10	...	...
Composition.....	52.5	42	2.5	...
Rhetoric.....	67.5	62.5	5	...
English Literature.....	52.5	37.5	...	...
American Literature.....	22.5	15	...	...
Literature.....	32.5	35	5	...
Classics.....	25	15	...	...
Orthography.....	...	5	...	...
Public Speaking.....	...	...	2.5	...
First Year English.....	32.5	42.5	100	100
Second Year English.....	22.5	35	100	100
Third Year English.....	15	27.5	100	100
Fourth Year English.....	7.5	15	87.5	100
Six Years of English.....	...	...	...	2.5
Science				
Physiology.....	80	70	65	52.5
Physical Geography.....	72.5	75	82.5	52.5
Natural Philosophy.....	12.5	...	...	...
Physics.....	87.5	95	100	100
Chemistry.....	65	67.5	92.5	92.5
Geology.....	47.5	22.5	10	7.5
Astronomy.....	50	27.5	12.5	...
Botany.....	82.5	82.5	85	65
Zoology.....	37.5	42.5	55	40
Biology.....	...	10	17.5	45
Natural History.....	5	2.5	...	...
Geography.....	...	5	...	...
Mineralogy.....	5	...	...	...
Physiography.....	...	2.5	...	...
General Science.....	...	...	2.5	47.5
Social Studies				
Ancient History.....	32.5	37.5	90	97.5
Medieval History.....	...	5	85	...
Modern History.....	2.5	7.5	...	...
Medieval and Modern History.....	...	...	...	85
United States History.....	37.5	45	92.5	90
English History.....	35	50	60	52.5
French History.....	5	10	...	...
General History.....	62.5	65	2.5	...
Outlines of History.....	2.5	...	...	...
Civil Government.....	62.5	60	...	...
United States Civil Government.....	2.5	...	...	...

^aData for this table were taken from:

Stout, John Elbert. "The Development of High-School Curricula in the North Central States from 1860 to 1918," *Supplementary Educational Monographs*, No. 15. Chicago: University of Chicago, 1921, p. 71-74, 286-91.

This table includes the last two columns of Stout's Table X, p. 71-74, and two additional columns, figures for which were calculated from data presented by Stout in Tables I and H, p. 286-91. Three corrections were made in Stout's Table X: Chemistry was offered by 67.5 per cent instead of by 10 per cent in the period 1896-1900, as shown by his later data; Greek was offered for two years by 10 per cent and for three years by 7.5 per cent instead of by 7.5 per cent and 5 per cent respectively as shown by his later data. These were obvious errors. There may be others, but they are of no apparent significance.

Data for forty schools were reported for each of the four periods included in this table. However, the same forty schools are not included in any two periods, although approximately the same schools appear in all four lists.

TABLE VIII.—Continued

Subjects	1891-95	1896-1900	1906-11	1915-18
<i>Social Studies—Continued</i>				
State Civil Government.....	2.5	...	...	...
Civics.....	17.5	25	82.5	85
United States Constitution.....	2.5	5	...	...
United States and State Constitution.....	2.5	...	...	...
Political Economy.....	27.5	40	...	...
Historical Reading.....	2.5	...	...	...
Social Science.....	2.5	...	...	...
Current Events.....	2.5	...	...	...
Political History.....	2.5	...	...	...
History.....	...	5	2.5	...
Economics.....	...	...	45	62.5
State History.....	...	...	...	2.5
Citizenship.....	...	...	...	2.5
Contemporary Life.....	...	...	...	2.5
<i>Foreign Languages</i>				
Latin.....	95	97.5	97.5	97.5
One year.....	2.5	...	...	...
Two years.....	15	7.5	...	2.5
Three years.....	25	15	...	2.5
Four years.....	63	75	97.5	90
Six years.....	...	...	...	2.5
Greek.....	17.5	25	25	15
Two years.....	10	20	5	2.5
Three years.....	7.5	2.5	20	12.5
Four years.....	...	2.5	...	...
German.....	52	57.5	95	...
One year.....	10	7.5	...	...
Two years.....	27	27.5	32.5	...
Three years.....	5	...	27.5	...
Four years.....	10	22.5	35	...
French.....	15	10	32.5	40
One year.....	10	...	2.5	5
Two years.....	2.5	10	10	17.5
Three years.....	...	...	7.5	7.5
Four years.....	2.5	...	12.5	10
Spanish.....	2.5	...	7.5	37.5
Two years.....	...	...	2.5	75
Three years.....	...	...	2.5	5
Four years.....	2.5	...	2.5	7.5
Swedish.....	...	...	...	2.5
Two years.....	...	...	...	2.5
<i>Commercial Subjects</i>				
Bookkeeping.....	48	67.5	77.5	92.5
Business Forms.....	5	10	...	...
Commercial Law.....	12.5	22.5	57.5	77.5
Commercial Arithmetic.....	15	20	55	65
Phonography.....	...	2.5	...	...
Commercial Geography.....	2.5	7.5	57.5	67.5
Business Practice.....	2.5	2.5	...	...
Stenography.....	7.5	12.5	67.5	92.5
Typewriting.....	2.5	12.5	62.5	95
Banking.....	...	2.5	...	7.5
Commercial English.....	...	...	22.5	40
Commercial History.....	...	...	7.5	25
Accounting.....	...	...	...	12.5
Business Methods.....	...	...	...	22.5
Salesmanship.....	...	...	...	12.5
Office Practice.....	...	...	...	10
Advertising.....	...	...	...	7.5
<i>Fine and Practical Arts</i>				
Agriculture.....	...	...	10	55
Domestic Science.....	...	2.5	42.5	77.5
Domestic Art.....	...	...	7.5	15
Domestic Economy.....	...	...	2.5	15
Mechanical Drawing.....	...	...	2.5	12.5
Manual Training.....	5	5	57.5	77.5
Pattern Making.....	...	...	...	10
Machine Shop.....	...	...	...	15
Metal Work.....	...	...	...	5
Pottery.....	...	...	...	2.5

TABLE VIII.—*Concluded*

Subjects	1891-95	1896-1900	1906-11	1915-18
<i>Fine and Practical Arts—Continued</i>				
Household Chemistry.....	...	...	...	12.5
Camp Cooking.....	...	...	...	2.5
Forging.....	...	...	...	15
Machine Fitting.....	...	...	...	2.5
Printing.....	...	...	...	5
Electricity and Applied Mechanics.....	...	...	...	2.5
Building Construction.....	...	...	...	5
Carpentry.....	...	...	...	2.5
Home Management.....	...	...	...	7.5
Design.....	...	...	...	2.5
Telegraphy.....	...	...	...	2.5
Millinery.....	...	...	...	5
Art and Needlework.....	...	...	...	5
Laundry and Sanitation.....	...	...	...	2.5
Household Physics.....	...	...	...	2.5
Drawing.....	7.5	15	...	...
Art.....	...	...	2.5	...
<i>Miscellaneous</i>				
Mental Philosophy.....	7.5	2.5	...	...
Moral Philosophy.....	...	2.5	...	...
Psychology.....	15	22.5	12.5	17.5
Ethics.....	2.5	5	2.5	...
Pedagogy.....	20	15	20	25
Biblical Literature.....	...	...	...	2.5

metic, English grammar, and rhetoric, passed on down into, or became confined to, the elementary school. However, many others simply became absorbed in some broader subject. This occurred in most pronounced fashion in English, and today there is a strong tendency for the same thing to occur in the field of the social studies. Science has shown a similar tendency in connection with general science. This tendency to unify the old established fields of subject-matter in the secondary school appears to be one of the most significant trends of the period. On the other hand, the elaborate multiplication of subjects exhibited in the less well-established fields of commercial subjects and the fine and practical arts is an equally significant trend.

In the main, Koos' statements for the period of 1830 to 1900, relative to the downward movement of subjects into the secondary school from the college, do not hold for the period just discussed (1891-1918), unless it be for the commercial subjects and the fine and practical arts. However, even in these fields the increase is chiefly a development of new courses on this level rather than the bringing down of courses from a higher educational unit.

The preceding discussion may leave a false impression unless the reader remembers that the purpose has been to describe the range of secondary-school subjects rather than to show what the curriculum has been in various types of schools. Since the studies from which the preceding descriptions were taken included few or no small high

schools, this type of school should be given some explicit consideration. The small high school cannot offer a wide range of subjects. However, the program of studies varies from school to school; in some cases the offerings are restricted largely to traditional subjects; in others, the "newer" subjects characterize the curriculum. Rufi has reported a study of five small high schools in Pennsylvania which "were generally conceded to be better than were the majority of schools in their class." He says:

In spite of the fact that comparatively few of their pupils are entering college, all of these schools put considerable emphasis upon what are generally considered to be college preparatory subjects. Foreign language occupies a prominent place in four out of five of these schools. In these schools as many units of Latin are given as of English. Two of these schools offer work in both Latin and French. The offerings of the various schools differ little, even though the communities served by the schools differ greatly in certain important respects.¹⁴

In a study of 283 rural high schools in 47 states, Ferriss¹⁵ reports the following:

<i>Subjects</i>	<i>Per Cent of Schools Offering Each</i>
Home economics and home-making.....	62
Arithmetic and commercial arithmetic.....	48
Agriculture and vocational agriculture.....	44
Economics.....	44
Community civics.....	38
Bookkeeping.....	38
Manual training.....	32
Vocal music.....	37
Sociology.....	30
Instrumental music.....	18
Hygiene and sanitation.....	11
Commercial geography.....	11
Psychology.....	10
General mathematics.....	10
Commercial law.....	6

These data present the small high school in a somewhat better light with reference to the "newer" subjects than does the report by Rufi, but it is undoubtedly true that in general the small high school has been relatively conservative.

Parallel courses. The curriculum of the Latin grammar school constituted a fixed course of study. All students were expected to

¹⁴Rufi, John. "The Small High School," *Teachers College, Columbia University Contributions to Education*, No. 236. New York: Bureau of Publications, Columbia University, 1926, p. 86.

¹⁵Ferriss, Emery N. *Secondary Education in Country and Village*. New York: D. Appleton and Company, 1927, p. 30-32. For a summary of several similar studies see p. 25-41 in Ferriss' book.

pursue the same studies, of which Latin was the dominant one.¹⁶ When the number of subjects became so large that a student could not take all of them, it became necessary to adopt some plan of selection. The scheme most generally employed until after 1890 was to organize two or more *parallel courses*. Usually, one course was designated as "classical" and had Latin as the dominant subject. The "scientific" course emphasized the sciences.¹⁷ A "course" consisted principally of prescribed subjects, and a student had only to decide upon the "course" he was to pursue. Occasionally, a few options were permitted,¹⁸ but as a rule they were confined to subjects considered of minor importance.

The Committee of Ten did not depart from the usual procedure of the time in respect to courses and options. They recommended four parallel "school programmes": classical, Latin-scientific, modern languages, and English. However, they hastened to add, "All four combined might, of course, be tabulated as one programme with options by subject."¹⁹ They further recognized the principle of elective subjects by advocating the thesis that "all the main subjects taught in the secondary schools" would become "of equal rank for the purposes of admission" when the recommendations of the several conferences were "well carried out."²⁰

The elective system. The statements just quoted from the Committee of Ten make evident the close relationship between a system of parallel courses and one of electives. The former, however, does not possess the flexibility of the latter. The protagonists of disciplinary values insisted upon relative rigidity of the curriculum, whereas those who placed a high value upon adaptation to individual differences insisted upon flexibility. This conflict was prominent in the second annual meeting of the North Central Association, February 12 and 13, 1897, where the following resolution was introduced:

Resolved, That in every secondary school, and in college as far as to the end of the sophomore year, the study of language and the study of mathematics should be predominantly and continuously pursued; that the study of English, including grammar, rhetoric, and composition, should continue throughout every course; that two languages besides English should be studied;

¹⁶Latin was apparently three-quarters of the curriculum in the most of the grammar schools, or more likely nine-tenths of it, or nineteen-twentieths."

Brown, E. E. *The Making of Our Middle Schools*. New York: Longmans, Green, and Company, 1902, p. 133.

¹⁷As pointed out in Chapter II, there was a strong tendency for the titles of courses to be less meaningful than formerly.

¹⁸Stout, J. E. "The Development of High-School Curricula in the North Central States from 1860 to 1918," *Supplementary Educational Monographs*, No. 15. Chicago: University of Chicago, 1921, p. 52.

¹⁹"Report of the Committee of Ten on Secondary School Studies." New York: American Book Company, 1894, p. 44.

²⁰*Ibid.*, p. 52.

and that no other studies should be allowed to interfere with the preeminence of the studies here designated.²¹

This resolution represents the point of view of a conservative group. It appears that the Association included a vigorous liberal group whose point of view is presented in the following substitute resolution:

Resolved, That in both Secondary Schools and Colleges, such courses of study should be provided as will offer to every student the best advantages within reasonable limits for the highest development of those talents with which he has been endowed, and that to this end studies should be arranged under the following heads; viz: (1) Language; (2) Mathematics; (3) Natural and Physical Science; (4) History and Literature; (5) Civics and Economics; and further that while students should, in general, be encouraged to maintain a reasonable balance between these, the courses should be so plastic as to permit alternative options, with a view to their adaptation to the individual capacities and purposes of students.²²

After prolonged discussion, the original resolution and the substitute were referred to the executive committee with the suggestion that they be presented again at the next annual meeting. This was done, and after another prolonged and heated discussion, the substitute resolution was unanimously adopted.²³

One year later, the Committee on College Entrance Requirements explicitly endorsed the point of view which was adopted by the North Central Association only after long debate. The first of the group of resolutions adopted by this Committee in 1899 reads: "*Resolved*: That the principle of election be recognized in secondary schools."²⁴ In explanation of this action the Committee stated: "In this resolution the Committee merely indorses a practice very common in secondary schools." Their sixth resolution states that the Committee "does not believe in unlimited election, but especially emphasizes the importance of a certain number of constants in all secondary schools and in all requirements for admission to college." The Committee's recommendation for constants was "four units in foreign languages (no language accepted in less than two units), two units in mathematics, two in English, one in history, and one in science."²⁵

From an examination of published courses of study for a number of cities in the north-central states, Stout notes, relative to the period 1900-1918 that "Three plans of organization prevail—a single course with electives, parallel courses, and the major-minor system. The latter, however, is rare, but it is probable that its use will become

²¹Davis, Calvin O. "The History of the North Central Association the First Half Decade," *The North Central Association Quarterly*, 1: 560, March, 1927.

²²*Ibid.*, p. 563.

²³*Ibid.*, p. 569.

²⁴"Report of the Committee on College Entrance Requirements." Washington: National Education Association, 1899, p. 27.

²⁵*Ibid.*, p. 37.

more general."²⁶ Relative to required subjects, he makes the following statements:

English is the only field in which subjects are universally required. . . . Approximately 80 per cent of the schools require algebra and about 60 per cent require plane geometry. . . . Previous to 1900 practically all high schools required both algebra and plane geometry. The decline in this practice has taken place chiefly since 1910. . . . About 50 per cent of the schools require some work in science, usually one or two years. . . . On the whole the practice of requiring science is decreasing, the only exception being in general science. . . . Something in the field of the social studies is required in 60 per cent of the schools. . . . Some foreign language, usually not specified, is required in about 10 per cent of the schools. When the language is specified, it is invariably Latin. . . . No school in the list requires commercial subjects. It is rather interesting to note, however, that 10 per cent of the schools require something in the field of fine and practical arts.²⁷

Differentiated curricula. The Commission on the Reorganization of Secondary Education dealt with the program of studies under the caption, "The specializing and unifying functions of Secondary Education." School subjects were classified under three heads: (1) constants, to be taken by all or nearly all students; (2) curriculum variables, required subjects within a curriculum; and (3) free electives. It was recommended that subjects offered in the senior high school be organized into differentiated curricula, the basis of differentiation being vocational. Thus, in a school offering such curricula or courses as agricultural, commercial or business, industrial, fine arts, household arts, and the like, certain subjects, called constants, would be included in all curricula; the curriculum variables would be required within a particular curriculum; and all curricula would include provisions for some free electives.²⁸

The distinctive feature of this recommendation is the basis on which curricula are differentiated. The Committee of Ten designated the recommended curricula as "classical," "Latin-scientific," "modern languages," and "English." Their basis of differentiation was subject-matter or content. The Commission on the Reorganization of Secondary Education made vocations the basis. In other words, they maintained that each curriculum should be organized about a vocational objective. This, of course, does not mean that the other six groups of objectives²⁹ are to be neglected in planning a curriculum, but they are cared for by the subjects designated as "constants" and "free electives."

²⁶Stout, J. E. "The Development of High-School Curricula in the North Central States from 1860 to 1918," *Supplementary Educational Monographs*, No. 15. Chicago: University of Chicago, 1921, p. 203.

²⁷*Ibid.*, p. 223-24.

²⁸"Cardinal Principles of Secondary Education," *U. S. Bureau of Education Bulletin*, 1918, No. 35. Washington: Government Printing Office, 1918, p. 21-23.

²⁹These are: health, command of fundamental processes, worthy home-membership, citizenship, worthy use of leisure, and ethical character.

Changes in the content of subjects. In speaking of the upward and downward trends of subjects, it was pointed out that in the main one of two things may cause a subject to disappear from the curriculum of the secondary school: it becomes relegated to another educational level; or it becomes amalgamated with allied subjects in the secondary school. Such amalgamations and additions to and subtractions from the topics of established subjects do not appear in any enumeration of offerings. The following discussion of such changes in the content of secondary-school subjects will make this point clearer, and at the same time it indicates the nature of the changes that have occurred.

There has been comparatively little change in the topics of the established mathematical subjects—algebra, plane geometry, solid geometry, and trigonometry. Perhaps the increase in attention to graphic representation of mathematical relations, especially in algebra, has been the most important topic change. In plane geometry, some attention has been given to emphasizing “fundamental theorems and constructions” and to using “subsidiary propositions” for supplementary purposes only.³⁰ However, the most significant changes have not been primarily concerned with the introduction and elimination of topics, but rather with their rearrangement and enrichment. Mathematics has shown in very recent years a strong tendency toward unification and reorganization of topics so as virtually to obliterate the traditional lines of demarcation between arithmetic, algebra, and plane geometry, and to include a generous sprinkling of solid geometry and plane trigonometry. Although begun in the traditional four-year high school,³¹ this development has come to involve administrative reorganization to such an extent that its discussion is left to Chapter V.

In English, the tendency is distinctly toward a “unified” four-year course, the traditional divisions of grammar, rhetoric, composition, and literature being ignored; the first two are made subordinate and incidental to the latter two. On the literature side, emphasis has been shifted somewhat from the classics and biographies of authors to current literature.

In the sciences, the principal additions have been topics dealing with recent discoveries and practical applications, such as the radio in physics and commercial processes in chemistry. Except for the development of general science, which tends to become a junior-high-school subject although still important as a first-year subject in the

³⁰For a list of such theorems, constructions, and propositions, *see*:

“The Reorganization of Mathematics in Secondary Education.” The Mathematical Association of America, Inc., 1923, p. 55-60.

³¹*See* Chapter V, p. 85, for references by Myers, Rugg, and Clark.

four-year high school, there has been only one marked tendency toward unification in the sciences; botany and zoology have tended to become unified as biology. However, to the extent that general science, physics, chemistry, and biology absorb the content of the formerly well-established subjects of physiology and physical geography, there is a tendency toward unification and consequent rearrangement of topics which is in harmony with similar trends in other established secondary-school subjects.

In the social studies, a similar sort of amalgamation is beginning to appear. However, here, as in mathematics, such changes involve consideration of the junior-high-school unit; consequently the discussion is deferred to Chapter V. Up to the present, the more important changes in this field have involved introduction and elimination of topics more than a rearrangement of them. Political and military history have been relegated to a subordinate position, being superseded by social, industrial, and commercial history. Civics has been changed from a rather abstract account of governmental forms and machinery to a functional treatment of the problems of community life.³²

In addition to changes involving the introduction and elimination of topics and rearrangement of the content of subjects, some changes have been made for the purpose of enriching the traditional subjects. This has been accomplished in the main by introduction of the familiar and the practical, and subject-matter of popular interest. "Application" has tended to be the keynote. The facts and principles of algebra and geometry are applied to numerous practical problems; business letters and movie scenarios are written in English classes; the moving picture, the radio, the chemistry of foods, and the like are studied in science classes; and current events are discussed in the social studies.

Since the commercial subjects and the practical and fine arts did not attain an established position in the curriculum until after the beginning of this period, it is not possible to describe the changes in the content of the subjects in these fields as has been done for the older subject-matter fields. However, it is apparent that the practical is being emphasized and thus far the tendency has been to form new subjects by differentiation rather than to consolidate two or more subjects.³³

³²"The Social Studies in the Elementary and Secondary School," *Twenty-Second Yearbook of the National Society for the Study of Education*, Part II. Bloomington, Illinois: Public School Publishing Company, 1923, p. 76-215.

³³Changes in the content of secondary-school subjects are given a somewhat fuller treatment from a slightly different point of view and are illustrated with numerous specific examples in:

Stout, John Elbert. "The Development of High-School Curricula in the North Central States from 1860 to 1918," *Supplementary Educational Monographs*, No. 15. Chicago: University of Chicago, 1921, p. 228-48.

Causes of changes in materials of instruction. Understanding of the changes in materials of instruction described in the preceding pages is enhanced and refined by consideration of their underlying causes. These are intimately interrelated, many being deeply embedded in our general economic and social development. The major causes, however, may be discussed under six heads: (1) the psychological basis of evaluating materials of instruction, (2) acceptance of the importance of objectives, (3) recognition of pupil interests and needs, (4) recognition of the "practical," (5) desire for economy of time, and (6) increase in the number of secondary-school pupils. The following pages are devoted to a brief discussion of these causes.

The psychological basis of evaluating materials of instruction. As has been mentioned, a fundamental change in the concept of the outcomes of learning has occurred since 1893. The trained faculties then believed to result from the study of Latin and mathematics may be designated as indirect or concomitant outcomes. They are produced as by-products in learning (memorizing) items of knowledge. The controls of conduct produced directly, learned items of knowledge and the like, are commonly called direct or intrinsic outcomes.³⁴

As long as faculty psychology dominated educational thinking, "trained faculties," or "mental habits," were considered to be the more important outcomes resulting from the use of materials of instruction. The direct or intrinsic outcomes were assigned a secondary place. This evaluation of outcomes of learning activity is clearly indicated in the Report of the Committee of Ten.

It is inevitable, therefore, that specialists in any one of the subjects which are pursued in the high schools or colleges should earnestly desire that the minds of young children be stored with some of the elementary facts and principles of their subject; and that all the *mental habits*, which the adult student will surely need, begin to be formed in the child's mind before the age of fourteen.³⁵

The following quotations are representative of the recognition of intrinsic and concomitant outcomes by the Committee on College Entrance Requirements:

³⁴For the most part, intrinsic outcomes consist of specific habits and knowledge. The qualifying words "direct" and "intrinsic" indicate that the outcomes are those that belong to, or are directly connected with, the materials of instruction used. In other words, "direct outcomes" are those which can be engendered only by using a given unit of instructional material. For example, ability to saw boards square is acquired only by sawing boards (perhaps in a woodworking course), not in writing translations of French to English; ability to measure the quantity of a chemical in a solution is acquired only in studying chemistry, not in analyzing the style of Shakespeare; ability to pronounce French is acquired only by studying French, not German.

Along with the engendering of direct or intrinsic outcomes, certain general patterns of conduct may be engendered. For example, in either sawing boards square or writing translations of French to English, one may in part acquire a general attitude of neatness; in making either a titration in chemistry or an analysis of the style of Shakespeare, one may develop a generalized attitude of exactness; in learning to speak either French or German, one may acquire a liking for the study of languages.

³⁵Report of the Committee of Ten on Secondary School Studies." New York: American Book Company, 1894, p. 16. Italics not in original.

"We believe that they [the modern foreign languages] are worth, when properly taught, no less than the ancient languages. It is of course conceded that the Latin and Greek are the more "difficult" in the initial stages. But difficulty cannot be the highest test of educational utility, else Latin and Greek should themselves give way to Sanskrit and Chinese. Evidently it is the goodness of the kernel, and not the thickness and hardness of the shell, that we are mainly to think of. The kernel is the introduction to the life and literature of a great civilized people, which it is, for some reason, very important for us to know about. . . .

"The practical command of a foreign language has a potential value that is at once perceived by every one. . . . The committee holds, however, that in our general scheme of secondary education the ability to converse in French or German should be regarded as of subordinate importance."³⁶

"The study of chemistry is a valuable constituent of the high-school course on account (1) of the training in observation in general and correct induction from observation which it affords, and (2) of the first-hand information which it gives about well-known materials, the principles of their manufacture, and their properties, as the result of personal observation."³⁷

A significant phase of our curriculum development has been the increasing recognition of direct or intrinsic outcomes. Although always considered important in the elementary school or in trade training, they were assigned a place of minor importance on the secondary level. However, it has been noted that there was a growing recognition of intrinsic outcomes by the time of the report of the Committee on College Entrance Requirements. By the time of the Commission on the Reorganization of Secondary Education, both faculty and Herbartian psychology were passé. In fact, psychology had become a relatively minor factor in determining educational theory and practice; or at least other factors, especially social theory, had assumed positions of such importance as to eclipse psychology in this respect.

The details of the change in the concept of the outcomes resulting from the use of materials of instruction are not easily apparent from a comparison of educational writings, because by the time the Commission on the Reorganization of Secondary Education made its report, it was a common practice to describe objectives in terms of desired conduct rather than in terms of the controls of conduct to be engendered. In so far as objectives were thought of in terms of controls of conduct, most of the outcomes recognized were intrinsic in nature. However, considerable emphasis was placed upon concomitant outcomes, yet without closely relating the two types.

Acceptance of the importance of objectives as criteria. The increasing recognition of intrinsic outcomes, combined with the increased scope of conduct objectives,³⁸ probably has been the most potent cause

³⁶"Report of the Committee on College Entrance Requirements." Washington: National Education Association, 1899, p. 82-83.

³⁷*Ibid.*, p. 165

³⁸See p. 39-40.

of changes in materials of instruction. In theory, we appear to be committed to the principle that the curriculum should consist of those materials of instruction whose intrinsic outcomes are acceptable as control objectives. The acceptance of this principle by the Commission on the Reorganization of Secondary Education is indicated in the following statement:

In each report [dealing with the several subjects] the commission attempts to analyze the aims in terms of the objectives; to indicate the adaptation of methods of presentation to the aims accepted; and to suggest a selection of content on the basis of aims and methods.³⁹

Although relatively easy to understand, this principle is difficult to apply because we have not yet developed a systematic procedure for determining materials of instruction from objectives, or for determining the compatibility of proposed materials of instruction and accepted objectives. In some cases, especially if the objectives are motor skills, the instructional materials to be used are relatively obvious; but if the objectives include knowledge and general patterns of conduct, the procedure to be followed in determining materials of instruction is much more difficult, and we have no authoritative formulation of guiding principles.

The significance of the point of view of the Commission on the Reorganization of Secondary Education becomes more apparent if it is contrasted with the criteria of selection and organization which prevailed at the time the Committee of Ten made its report. As long as the doctrine of formal discipline was paramount, it appears that the chief criterion for the selection of content was scholarliness; that is, the content must be thorough, complete, logical, and truthful. The Conference on History, Civil Government, and Political Economy of the Committee of Ten gave much evidence of this in their discussion of "subjects recommended," "inter-relation of subjects," "intensive study," and "distribution of subjects and eight-year program."⁴⁰ The Committee of Seven of the American Historical Association in their report included in the Report of the Committee on College Entrance Requirements made similar demands based on the implicit criterion of scholarliness.⁴¹

The criteria of scholarliness and cultural education are apparent in the following statement by William T. Harris:

There are no other phases of nature and man than these five, which we see are contemplated by the five chief branches of study in the district schools.

³⁹"Cardinal Principles of Secondary Education," *U. S. Bureau of Education Bulletin*, 1918, No. 35. Washington, 1918, p. 16.

⁴⁰"Report of the Committee of Ten on Secondary School Studies." New York: American Book Company, 1894, p. 175-79.

⁴¹"Report of the Committee on College Entrance Requirements." Washington: National Education Association, 1899, p. 128.

Secondary education must go on in the same direction, opening windows of the soul in five directions, so that the pupil gets a better insight into these cardinal provinces of nature and man.

Therefore, the secondary pupil will continue his study of mathematics, taking up algebra and geometry; of language, studying the ancient languages, from which civilization has been transmitted, and modern languages. He will continue the view of organic nature, given in geography, by studying the outlines and methods of such natural sciences as geology, astronomy, physiology, zoology and botany; continue history, by adding to the special study of the United States, begun in the elementary school, the study of general history; continue the study of literature, begun in the school readers, by systematic study of the greatest writers, like Shakespeare, Milton, and others, in selected complete works of art, together with a history of literature. Mathematics are reinforced by physics (called natural philosophy), treating of the mathematical laws of solids and fluids.⁴²

It should also be noted that tradition went hand-in-glove with scholarliness and ideals of culture as a criterion for determining the details of the content of courses. The influence of tradition is illustrated by the fact that many textbook writers, especially college instructors, felt that they must include all that their immediate predecessors had included.

Recognition of pupil interests and needs. As long as the doctrine of formal discipline was accepted, the child's immediate interests received little or no consideration in curriculum construction. It was thought that in order for a subject to possess a high educational value it must be difficult. The prevailing attitude has been described by the statement, "It don't matter what a boy studies just so he don't like it."

Recognition of pupil interests and needs was really a phase of the Herbartian movement which reached its height about 1900. The following quotations are typical of many that might be cited.

"In providing appropriate materials, two aims must be kept constantly in mind: the genuine interests of the child at different stages of his growth, and the maturer view of life toward which this growth is to be guided. The child's interests are at first supreme, but even if this be granted, there are choices of appropriate facts and occupations, and these choices must be determined by the ultimate end in view."⁴³

"There are then, it seems to me, these four considerations on which the selection of the facts to be taught in history must be based. Those facts must be such as can be related to the experience of the child; they must be of sufficient value to justify them excluding the many facts that might have had their place; they must be valuable enough to fill a permanent place in the teacher's mind; they must be of organic value, capable of assimilation, that is, into a larger scheme of culture—culture, as I apprehend the word, meaning the un-

⁴²Harris, W. T. "The Curriculum for Secondary Schools," *Journal of Proceedings and Addresses of the National Education Association*, Vol. 33. Washington: National Education Association, 1894, p. 504-5.

⁴³Vincent, George E. "Social Science and the Curriculum," *Journal of Proceedings and Addresses of the National Education Association*, Vol. 40. Washington: National Education Association, 1901, p. 126.

derstanding of the world as it is, through a sympathetic knowledge of the world as it has become, or came to be, what it is."⁴⁴

"Unless the subject matter and the methods of instruction [of civics] are adapted to the pupil's immediate needs of social growth, such attempts [transferring civics from grade to grade, shifting emphasis, etc.] avail little."⁴⁵

"Civics teaching is good in proportion as its subject matter is selected and organized on the basis of the pupil's past experience, immediate interests, and the needs of his present growth."⁴⁶

Recognition of the "practical." Many of the traditional materials of instruction have been questioned on the ground of being "impractical," and many new materials have been introduced into the secondary school because of possessing real or supposed "practical" values. The commercial subjects and practical arts have shown a marked increase in offerings on the secondary-school level; the practical aspects of established subjects have been emphasized, as in commercial arithmetic, commercial geography, and business English; and the basis of differentiation of curricula tends to be vocational.

Combined recognition of pupil interest and the "practical" has been a potent factor in bringing about the introduction of much material that was formerly considered extra-curricular. For example, the radio (in science), the giving of plays (in English), music, certain elements of public speaking, and physical education have all come more or less directly from extra-curricular activities and have received much of their impetus from that source. Some school administrators have gone so far as to attempt to make all or most of their extra-curricular offerings an integral part of the school curriculum proper.

Desire for economy of time. The desire to shorten the period of formal education has been an important cause of changes in secondary-school materials of instruction. The first public utterance to succeed in directing serious consideration to the question of economy of time was President Eliot's address in 1888 at the Washington meeting of the Department of Superintendence of the National Education Association entitled "Can School Programmes be Shortened and Enriched?"⁴⁷ The desire for economy of time, particularly in case of those entering the professions, was prominent in the minds of those who were responsible for the appointment of the Committee of Ten.

⁴⁴Muzzey, David Saville. "What Facts of Ancient History Should be Taught to Pupils of the Secondary Schools, in Order that They may Better Understand the World They Live in?" *Journal of Proceedings and Addresses of the National Education Association*, Vol. 44. Washington: National Education Association, 1905, p. 463.

⁴⁵Dunn, Arthur William. "The Social Studies in Secondary Education," *U. S. Bureau of Education Bulletin*, 1916, No. 28. Washington: Government Printing Office, 1916, p. 10.

⁴⁶*Ibid.*, p. 58. Printed in italics in original.

⁴⁷*Journal of Proceedings and Addresses of the National Education Association*, Vol. 27. Washington: National Education Association, 1888, p. 101-18. See also:

Eliot, Charles W. *Educational Reform*. New York: The Century Company, 1898, p. 151-76.

Changes in college-entrance requirements, which in turn influenced the subject offerings of the secondary school, were due in large measure to the desire to shorten the period of formal education.⁴⁸ The same cause also operated to stimulate the downward movement of traditional secondary-school subjects, the organization of materials so as to facilitate learning, and the introduction of measures designed to reduce the amount of retardation and increase the number of accelerated pupils, especially at the junior-high-school level. Although having exerted an appreciable influence on the materials of instruction of the secondary school, economy of time is receiving less attention today than at other times during the period under consideration. No doubt the movement has been vitiated in a measure by the inability of its advocates to agree upon the precise meaning attached to "economy of time."

Increase in the number of secondary-school pupils. Another factor making for change in the materials of instruction selected is the great increase in the number of secondary-school pupils. However, this factor is not entirely comparable to the ones previously mentioned; it is more of the nature of an aggravating condition which has brought into prominence and shaped the character of the other causal factors, especially the recognition of pupil interests and needs. The enormous growth in enrollment means that all classes of society are being represented in constantly increasing numbers. This condition seems to have been particularly influential in forcing attention upon citizenship and practical or vocational objectives. National recognition of the need for realization of the vocational objective has brought about legislation, notably the Smith-Hughes Act.

It appears, then, that there are six major factors which have operated since the Report of the Committee of Ten in bringing about changes in the materials of instruction in secondary education: a change in psychological concepts, acceptance of the importance of objectives, recognition of pupil interests and needs, recognition of the "practical," and desire for economy of time in education, all aggravated by the rapid increase in secondary-school enrollment. However, as in every evolutionary process, other factors have tended toward conservatism and preservation of the existing order. As the factors dominant at the time of the Report of the Committee of Ten have persisted in their original form, they have tended to maintain the *status*

⁴⁸For a discussion of the influence of economy of time on the admission requirements at Harvard, *see*:

Bunker, Frank Forest. "Reorganization of the Public School System," *U. S. Bureau of Education Bulletin*, 1916, No. 8. Washington: Government Printing Office, 1916, p. 44-47.

quo of materials of instruction. Colleges, through their entrance requirements and the leadership of their faculties, have exerted a powerful stabilizing influence. Textbooks, until recently, have been written in the main by college professors, and in a textbook-dominated education such as ours, they have constituted a conserving force of great potency. In consequence, the present character of materials of instruction is a resultant of the operation of these two opposing types of forces—those making for change, and those tending to maintain the *status quo*.

Concluding statement. The curriculum and the administrative organization of our school system are intimately interrelated, a static condition of one tending toward a static condition of the other, and a dynamic state of either encouraging a like condition in the other. However, significant changes have been effected in the secondary curriculum which are independent of any administrative reorganization. These changes may be summarized as follows:

1. A few subjects have disappeared from the secondary-school curriculum or have become of little importance. On the other hand, many subjects have been added, so that the number of subject offerings has been greatly increased, perhaps more than doubled. These increases have occurred in the main in the commercial subjects and the practical and fine arts, in which the tendency is toward differentiation and multiplication of subjects. In the "older" fields of mathematics, science, English, and the social studies, there is a tendency toward unification and a reduction in the number of subjects.

2. Subjects are being organized into curricula (such as commercial, agricultural, and college-preparatory) differentiated on a vocational basis instead of being grouped in parallel courses (such as classical, Latin-scientific, and English) organized on a subject-matter basis. An elective system has more or less generally accompanied, and has sometimes existed independent of, organization of subjects into courses or curricula.

3. The content of subjects has been modified in two important respects: (1) by rearrangement of content to secure "unification," as in the development of general mathematics and general science; and (2) by enrichment, accomplished in the main through "application," as in household physics and business English.

CHAPTER V

CURRICULUM RECONSTRUCTION: SELECTION AND ORGANIZATION OF MATERIALS OF INSTRUCTION, ASSUMING A JUNIOR-SENIOR HIGH SCHOOL

Administrative reorganizations of our educational system having curricular significance.¹ In the preceding chapter, the relation between the administrative organization of our educational system and curriculum construction was pointed out. The two administrative changes that have greater curricular significance than others which might be mentioned are: (1) regrouping of school grades, and (2) departmentalization of instruction below the ninth grade.

The traditional form of administrative organization² had not been questioned to any appreciable extent until about the time of the report made by the Committee of Ten. The following is one of the most clear-cut statements of this Committee on the need for reorganization:

In preparing these programmes, the Committee were perfectly aware that it is impossible to make a satisfactory secondary school programme, limited to a period of four years, and founded on the present elementary school subjects and methods. In the opinion of the Committee, several subjects now reserved for high schools,—such as algebra, geometry, natural science, and foreign languages,—should be begun earlier than now, and therefore within the schools classified as elementary; or, as an alternative, the secondary school period should be made to begin two years earlier than at present, leaving six years instead of eight for the elementary school period.³

Since 1893, serious and continued criticism has led to a variety of attempts to effect a different division of the years of schooling, particularly at the lower and upper limits of the traditional four-year

¹No attempt is made in this chapter to give a detailed account of the development of the new organization. This position is taken in part because administrative reorganization is subordinate and incidental to curricular reorganization. Furthermore, several adequate treatments of administrative reorganization are readily available, probably well-known, to most readers in such as the following:

Bunker, Frank Forest. "Reorganization of the Public School System." *U. S. Bureau of Education Bulletin*, 1916, No. 8. Washington: Government Printing Office, 1916. 186 p.

Davis, Calvin O. *Junior High School Education*. Yonkers-on-Hudson, New York: World Book Company, 1924. 481 p.

Koos, Leonard V. *The Junior High School (Enlarged)*. Boston: Ginn and Company, 1927. 506 p.

Koos, Leonard V. *The Junior-College Movement*. Boston: Ginn and Company, 1925. 456 p.

McDowell, F. M. "The Junior College." *U. S. Bureau of Education Bulletin*, 1919, No. 35. Washington: Government Printing Office, 1919. 150 p.

Proctor, William Martin (Edited by). *The Junior College*. Stanford University, California: Stanford University Press, 1927. 226 p.

²The most generally accepted divisions were: an eight-year elementary school, a four-year high school, and a four-year college. There were many local and a few sectional variations from this form: such as the nine-year elementary schools of New England and the seven-year elementary schools of the South. However, in these two instances, the normal ages for entering were five and seven respectively, as compared with six where the elementary school was eight years in length. Consequently, the age at which elementary education ended and secondary education began was the same whatever the length of the elementary school. Likewise, the normal age for college entrance was the same.

³"Report of the Committee of Ten on Secondary School Studies." New York: American Book Company, 1894, p. 45.

high school. These attempts have resulted in the junior-high-school and the junior-college movements.

The junior high school has shown a definite tendency to become organized so as to include grades seven, eight, and nine, thus leaving a six-year elementary school and a three-year senior high school.⁴ Combining the studies of Briggs, Davis, and Douglass, one finds that of the 743 junior high schools reported by them, 327 or 54 per cent included grades seven, eight, and nine; 281 or 37 per cent were of the seventh-and-eighth-grade form; while only 19 per cent included other grade combinations.⁵ In making an enumeration of junior high schools in cities having a population of 2,500 and over in 1923, the United States Bureau of Education recognized the following three plans of organization: the 6-3-3, the 6-2-4, and the 6-4-2, of which the 6-3-3 predominated.⁶ Legal restrictions in some states, notably Illinois, have tended to prevent the formation of three-year junior high schools.⁷

The junior-college movement has had little apparent effect upon the high-school curriculum. In most cases the public junior college has been organized as an additional division of the school system, sometimes housed with the high school, using the same library, auditorium, and laboratories; at other times housed and administered separately. In a few instances, a reorganization has been started which looks toward a regrouping of school years according to the 6-4-4 plan; that is, a division of six elementary grades, another of four intermediate grades, and a third including the last two years of the traditional high school and the first two traditional college years.

The second administrative change, departmentalization of instruction below the ninth year, is an extension downward of a long accepted form of secondary-school organization, which stands in marked contrast to the grade organization that was once all but universal in the elementary school. Departmentalization has usually accompanied the downward extension of secondary-school subjects, although frequently

⁴In some cases, especially in small school systems, there has been no actual organization of a junior high school, grades seven to twelve being designated as the high school or the junior-senior high school.

⁵Douglass, H. R. and Stetson, F. L. (Reported by). *The Junior High School—A Manual of Suggestions and Standards for Junior High Schools in Oregon*. Salem: State Printing Department, 1922, p. 10.

⁶Hebb, Bertha Y. (Compiled by). "Junior High Schools in Cities having a Population of 2,500 and over," *U. S. Bureau of Education City School Leaflet*, No. 12, 1923. Washington: Government Printing Office, 1923, p. 1.

⁷In Illinois in 1925-26, of the forty-three school districts having an organization designated as a junior high school, only eight included grades seven, eight and nine. The other thirty-five districts had junior high schools which included only the seventh and eighth grades. Of the eight, only one was in a district having a dual system. See:

Booth, W. S. (Collected and tabulated by). "The Junior High School Situation in Illinois—Data Respecting their Organization," *The Illinois Department of Education Circular*, No. 206. Springfield: Illinois State Register. 18 p. (No date given.)

adopted without any subject changes. Today, all junior high schools and probably more than half of all elementary schools have some form of departmentalized instruction. Data collected by Booth for 1925-26 from 497 Illinois districts outside of Chicago having boards of education show that 281 or 57 per cent had some form of departmentalization ranging down as low as the fourth grade but limited in the main to the seventh and eighth grades. Of the 281 departmentalized schools only 43 were called junior high schools.⁸

Relation of administrative changes to curriculum reorganization.

The reciprocal relation between selection and organization of materials of instruction and administrative reorganization is readily apparent. For example, the efficiency of a reorganized junior-high-school unit is largely dependent upon a reorganization of the curriculum at this level; on the other hand, the reorganization of the curriculum is limited unless there are attendant administrative changes. One illustration of the recognition of this intimate relation between administrative organization and the selection and organization of materials of instruction is given by Dawson. Speaking of the work of the Committee of Seven and of the Committee of Five of the American Historical Association, he said: "Both of these committees were obviously in favor of cycles of history and, had present school conditions existed then, they would probably have favored three-year cycles."⁹

Changes in materials of instruction at the junior-high-school level. Changes in materials of instruction made in conjunction with administrative reorganization have occurred in the main at the junior-high-school level. From this center, some influences have reached down into the elementary school and up into the senior high school and junior college. Changes in the junior-high-school unit may be grouped into two classes: (1) those involving subjects as units, and (2) those made in the content of subjects. Each of these classes may be further subdivided. The first includes: (a) those involving the introduction and elimination of subjects, and (b) those relating to the organization of the program of studies. The second includes: (a) reorganization of the established subject-matter fields, and (b) organization of orientation and try-out courses.

Introduction and elimination of subjects at the junior-high-school level. Table IX presents a tabulation of the subjects offered in the seventh and eighth grades when they constitute a part of the

⁸Booth. *Op. cit.*

⁹Dawson, Edgar, et al. *Teaching the Social Studies*. New York: The Macmillan Company, 1927, p. 280.

TABLE IX.—SUBJECTS REPORTED IN SEVENTH AND EIGHTH GRADES UNDER
ELEMENTARY-SCHOOL AND JUNIOR-HIGH-SCHOOL
FORMS OF ORGANIZATION

Subjects	Elementary School		Jr. H. S.
	49 Cities	KHVS Cities	KHVS Cities ^a
Mathematics			
Algebra.....	..	..	x
Arithmetic.....	x	x	x
General Mathematics.....	..	..	x
Geometry.....	..	..	x
English			
Grammar.....	..	x	x
Language and Composition ^b	x	x	x
Penmanship.....	x	x	x
Reading ^c	x	x	x
Spelling.....	x	x	x
Science			
Biology.....	..	..	x
Botany.....	..	..	x
Physiology.....	..	..	x
Zoology.....	..	..	x
Physiography.....	..	..	x
General Science.....	..	..	x
Science.....	x	..	..
Social Studies			
American History ^d	x	x	x
Ancient History.....	..	..	x
English History.....	..	..	x
General History.....	..	..	x
Medieval History.....	..	..	x
Modern History.....	..	..	x
Civics.....	x	x	x
Geography.....	x	x	x

^aOf the subjects marked as appearing in the seventh and eighth grades under a junior-high-school form of organization, all except botany and zoology appear in both grades. These two subjects are not reported as being taught below the latter half of the eighth year.

^bLanguage and composition as reported by McGaughy is considered the equivalent of language reported by Ayer.

^cIn McGaughy's report, a distinction is made between silent and oral reading in elementary grades but not in junior high schools. No differentiation is made by Ayer.

^dAyer does not designate elementary-school history as American, but it is here considered the equivalent of McGaughy's American history.

traditional elementary school and of the subjects offered in the same grades when reorganized as a part of a junior high school.¹⁰ This table should be read: Algebra is not reported by either Ayer or McGaughy as taught in the seventh and eighth grades when a part of the traditional elementary school, but is reported by McGaughy as taught in these grades organized as part of a junior high school. Arithmetic is reported by both Ayer and McGaughy as taught in the seventh and eighth grades in either type of organization. The remainder of the table should be read in the same manner.

¹⁰This table is made up from data presented in the *Second Yearbook of the Department of Superintendence of the National Education Association*, p. 139-72, 186-87. The original data were collected by Fred C. Ayer for the elementary schools of forty-nine cities over 100,000 in population, and by J. R. McGaughy for elementary and junior high schools of 375 cities of over 8,000 population in an Inquiry, "Know and Help Your Schools," made by the National Committee for Chamber of Commerce Cooperation with Public Schools.

TABLE IX.—*Concluded*

Subjects	Elementary School		Jr. H. S.
	49 Cities	KHYS Cities	KHYS Cities ^a
Foreign Languages			
Latin.....	x
French.....	x
German.....	x
Spanish.....	x
Commercial Subjects			
Bookkeeping.....	x
Commercial Arithmetic.....	x
Commercial Geography.....	x
Stenography.....	x
Typewriting.....	x
Fine and Practical Arts			
Drawing.....	x	x	x
Music.....	x	x	x
Agriculture.....	x
Cooking.....	..	x	x
Sewing.....	..	x	x
General Shop.....	x
Industrial Arts.....	x	..	..
Mechanical Drawing.....	x
Printing.....	x
Sheet Metal Work.....	x
Woodworking.....	..	x	x
Physical Education and Health			
Athletics.....	x
Calisthenics.....	x
Hygiene.....	x	x	..
Nursing.....	x
Physical Education ^a	x	x	..
Sanitation.....	x
Sex Hygiene.....	x

^aOf the subjects marked as appearing in the seventh and eighth grades under a junior-high-school form of organization, all except botany and zoology appear in both grades. These two subjects are not reported as being taught below the latter half of the eighth year.

^aAyer's physical training is considered the equivalent of McGaughy's physical education.

Examination of this table and of the more detailed data presented in the original reports reveals that there is a fairly uniform group of subjects generally found in the seventh and eighth grades when they constitute a part of the traditional elementary school, but when a junior high school has been organized, a great many "new" subjects are introduced in these years. Some of these "new" subjects merely represent finer differentiations of "old" subjects. For example, physical education has been replaced by calisthenics and athletics; hygiene by sex hygiene, nursing, and sanitation; and industrial arts by printing, sheet metal work, general shop, and mechanical drawing. However, it is apparent that this is principally a matter of extending downward the customary differentiation and specialization of the high school. When attention is directed to ancient, medieval, modern, and English history, geometry, Latin, zoology, and so forth, it is evident that many subjects

have been moved down more or less bodily into the seventh and eighth grades.

Organization of the program of studies. As long as a grade organization obtained, the program of studies in the seventh and eighth grades provided for virtually no variation in subjects taken.¹¹ In the first year of the high school, pupils were frequently permitted to choose between two or more courses or were allowed to elect one or more subjects. With the advent of the junior high school, the number of subjects in the seventh and eighth grades was greatly increased and it became necessary to organize courses, or to provide some system of election. Koos has identified three main types of organization: (1) the "single-curriculum type," (2) the "pure multiple-curriculum type," and (3) the "constants-with-variables type." Some schools have an organization that does not belong strictly to any one of these types, but is a combination of two or even all three of them. In collecting the programs of study of junior high schools for the year 1925-26, Koos found that of the first fifty programs, thirty-one were of the constants-with-variables type; fourteen were combination types; three were of the single-curriculum type; and two were of the pure multiple-curriculum type.¹² Most writers on the junior-high-school curriculum accept the constants-with-variables type as the typical form of curriculum organization at this level.

Inasmuch as these names are descriptive of the forms of organization, all except the most prominent type may be dismissed with a word. The single-curriculum type is one in which the same subjects are prescribed for all pupils with no choice of other subjects. The pure multiple-curriculum type is one in which the subjects are organized into two or more prescribed curricula, any one of which a given pupil may pursue. The combination type is merely a combination of one or both of these with the constants-with-variables type. This last may be described best by an illustration. The junior high schools of San Antonio, Texas, have their program of studies organized on this plan. If we bear in mind that this division of the San Antonio school system includes grades six, seven, and eight, the entire system being on an eleven rather than on a twelve-year basis, the following description is adequate.

The constant and elective studies vary considerably in the different years of the course. In the sixth grade all subjects are constants, on the theory that the children of this grade should probably all pursue the same course of

¹¹A common exception to this plan was the prescription of manual training for boys and domestic science for girls.

¹²Koos, Leonard V. *The Junior High School* (Enlarged). Boston: Ginn and Company, 1927, p. 145-68.

fundamental studies and that they are not yet ready to exercise an intelligent choice of subjects. In the seventh grade a small amount of elective work is provided in addition to the constants of English, mathematics, physical education, social studies, and the study of vocations. The present program allows the pupil to choose six hours out of the following: foreign language, 5 hours; manual arts, 5 hours; domestic science, 5 hours; commercial courses, 5 hours; music, 1 hour; art, 1 hour. . . .

Constants are considerably reduced in the eighth grade, the pupils being required to carry only English, physical education, and social studies, making a total of 15 hours per week. This leaves 15 hours which the pupil may choose from the following: mathematics, 5 hours; general science, 5 hours; Latin, 5 hours; applied art, 5 hours; manual training, 5-10 hours; domestic science, 5-10 hours; commercial courses, 5 hours.¹³

It is apparent that the San Antonio plan is distinctly different from the organization of differentiated curricula in either the four-year high school or the senior high school or of the curriculum in the upper grades of the traditional eight-year elementary school.

Reorganization of subjects in the established subject-matter fields. The subject-matter fields of secondary education which had been established in the last two grades of the elementary school or became established in the new junior-high-school unit are: English, foreign languages, mathematics, natural sciences, social studies, and the fine and practical arts. The changes already effected or now being effected in the first five of these fields at the junior-high-school level are described in the following paragraphs. Consideration of the practical and fine arts is deferred until the topic of orientation and try-out courses is taken up.¹⁴

Changes in mathematics. Early attempts at reorganization of mathematics were independent of the junior high school. Myers and his coworkers in the University High School at the University of Chicago were among the first to attempt to organize algebra, geometry, and trigonometry into a unified course.¹⁵ In the first year of this course, algebra formed the core or unifying content. In the second

¹³Judd, Charles H. "The Junior Schools of San Antonio, Texas," *Elementary School Journal*, 24: 736-37, June, 1924. Reprinted in:

Lyman, R. L. and Cox, Philip W. L. *Junior High School Practices*. Chicago: Laidlaw Brothers, 1925, p. 96.

The quotation given here was taken by Judd from:
"The Junior Schools: Organization and Administration," *San Antonio Public Schools Bulletin*, Vol. I, No. 1. San Antonio, Texas: Board of Education, 1924, p. 40.

¹⁴See p. 96-98.

¹⁵For accounts of the early development of this course, see:
Myers, George W. "Mathematics in the University High School," *School Review*, 14: 57-64, January, 1906.

Myers, George W. "The Year's Progress in the Mathematical Work of the University High School," *School Review*, 15: 576-93, October, 1907.

Breslich, E. R., et al. "Course of Study in Secondary Mathematics in the University High School, The University of Chicago," *School Review*, 24: 648-74, November, 1916.

"The Reorganization of Mathematics in Secondary Education." The Mathematical Association of America, Inc., 1923, p. 202-9.

Rugg, Harold Ordway and Clark, John Roscoe. "Scientific Method in the Reconstruction of Ninth-Grade Mathematics," *Supplementary Educational Monographs*, No. 7. Chicago: University of Chicago Press, 1918, p. 130-31.

year, the emphasis shifted to geometry. Myers and Breslich, with the assistance of others, embodied this course in textbooks for the first two years of high school.¹⁶ Although these texts have not been widely used, this experiment has exerted considerable influence on the development of general mathematics. It should be noted that this was an effort merely to reorganize the more or less traditional material of the ninth and tenth grades without modifying the work of the upper elementary grades. At this time the junior-high-school idea was still a matter of theory and not of practice.

A few years later, Rugg and Clark¹⁷ made a study in which they noted a tendency to develop three-year unified junior-high-school mathematics courses¹⁸ and predicted that "ninth-grade mathematics will certainly come to be regarded by school men in our generation as the last year of mathematics that will be required."¹⁹ Soon after, they published a text²⁰ which they candidly stated to be a transition book intended to meet the immediate needs of required mathematics in the ninth grade. They expected that much of the material presented would soon be found distributed over the eighth and ninth grades. In the report referred to above, Rugg and Clark noted two or more textbook series intended to form the basis of a junior-high-school unified mathematics course. Since then, a very large number of such series of textbooks have been issued. The reports of the National Committee on Mathematical Requirements have given especial impetus to such developments. In a bulletin of the U. S. Bureau of Education,²¹ the Committee recommended that the junior-high-school course include materials from arithmetic, intuitive geometry, algebra, numerical trigonometry, demonstrative geometry, and history and biography. They also suggested several plans of organization which combined these materials in various ways, but did not give preference to any particular plan.²²

On the junior-senior high-school level, Lincoln School of Teachers College, Columbia University, has made an attempt to "develop a mathematical curriculum that would teach pupils things worth knowing and discipline them rigorously in things worth doing. The school

¹⁶Myers, George William, et al. *First-Year Mathematics for Secondary Schools*. Chicago: University of Chicago Press, 1911 (Third impression). 365 p.

Myers, George William, et al. *Second-Year Mathematics for Secondary Schools*. Chicago: University of Chicago Press, 1911 (Third impression). 282 p.

¹⁷Rugg, Harold Ordway and Clark, John Roscoe. "Scientific Method in the Reconstruction of Ninth-Grade Mathematics." *Supplementary Educational Monographs*, No. 7. Chicago: University of Chicago Press, 1918. 189 p.

¹⁸*Ibid.*, p. 152-53.

¹⁹*Ibid.*, p. 151. Printed in italics in original.

²⁰Rugg, Harold O. and Clark, John R. *Fundamentals of High School Mathematics*. Yonkers-on-Hudson, New York: World Book Company, 1918 and 1919. 368 p.

²¹"The Reorganization of Mathematics in Secondary Education." *U. S. Bureau of Education Bulletin*, 1921, No. 32. Washington: Government Printing Office, 1922, p. 17-24.

²²*Ibid.*, p. 24.

has assisted in creating a type of mathematical material suitable for the average intelligent citizen or the general reader, without regard to subsequent specialization. Hence, it was found necessary to eliminate, or to reduce considerably, much of the traditional material, to adopt a new sequence of topics, and to lay reasonable stress on motivation and probable life situations."²³

The following lists of units give a general idea of the content of the course in the seventh and eighth grades :

Seventh grade :

1. Making accurate measurements
2. How graphs are used to picture numbers
3. How to locate places; direction; measurement of angles
4. The use of lines and angles in designs
5. The use of geometry in architecture
6. The measurement of area; formulas
7. The measurement of volume; formulas
8. How to solve problems by the use of the equation
9. The percentage relations; profits and loss; applications of percentage
10. Projects in business practice

Eighth grade :

1. Practical measurements
2. How to find unknown distances
3. Using the right triangle
4. Four ways to express a relation between numbers
5. The use of geometry in architecture
6. Practice in problem solving
7. Interest
8. The secret of thrift
9. Making money earn money
10. The nature of insurance. Taxes
11. The use of positive and negative numbers
12. Household measurements²⁴

The course for the ninth grade has been published in textbook form as *General Mathematics* by Schorling and Reeve.²⁵ It "consists of the simple and important principles of arithmetic, algebra, and geometry. It also includes about four weeks' work in numerical trigonometry and an extensive unit in graphic representation. In addition to this, the course offers certain optional topics, as may be illustrated by small units on logarithms, slide-rule, mechanics, and the like."²⁶

In the Cass Technical High School of Detroit, we find a unique attempt to base the course in mathematics on the needs arising in the

²³"The Reorganization of Mathematics in Secondary Education." The Mathematical Association of America, Inc., 1923, p. 234.

²⁴*Ibid.*, p. 243.

²⁵Schorling, Raleigh and Reeve, William David. *General Mathematics*. Boston: Ginn and Company, 1919. 488 p.

²⁶"The Reorganization of Mathematics in Secondary Education." The Mathematical Association of America, Inc., 1923, p. 235.

laboratory and shop and to effect an organization of the mathematical materials such that the study of the various topics will be "timed" with respect to these needs.²⁷ The general character of the work for the ninth and tenth grades is indicated in the following description:

The order of topics throughout the mathematics course is based upon the development of the algebraic formula. The department takes the position that the introduction of geometrical material is justified only as it applies to the formula or the equation. . . . Care is taken to see that problems demand constant use of common and decimal fractions and that problems from correlated subjects are in use in these classes at about the same time. The first half of the ninth grade aims to carry the pupil far enough so that he will be able to manipulate the equation sufficiently well to substitute in the formula for any letters and solve the resulting equation for the remaining letter. In the latter half of that year he learns to solve the formula for any letter before evaluating.

The mathematics of the tenth grade is devoted to the demonstration of the truth of geometric formulas, the development and proof of new formulas including proportionality of lines, functions of angles and formulas of trigonometry.

. . . . There are no geometrical developments separate from algebra until the use of the formula begins to demand a formal proof. . . . The geometric formulas used up to the last half of the tenth school year have been within the pupils' experience or else are treated as clearly intuitive. At that point when more complicated concepts arise with constructions whose development demands a formal proof, deductive geometry is introduced.²⁸

The general topics of the remainder of the course are: *third year*—solid geometry, trigonometry, logarithms, and slide rule; *fourth year*—higher algebra and mechanics with necessary mathematics.

Glass²⁹ and others have noted that there are two distinct types of general courses, one of which may best be called "coordinated" and the other "unified." A coordinated course in mathematics combines material of the various types mentioned above without amalgamating them; it is merely a coordination. Unified courses bring these materials together in such a way as to produce an amalgamation, a unique organization which is much more than a reassembling of the materials of the traditional courses so that each retains its identity as either arithmetic, algebra, or geometry.

Courses in general mathematics have not found their way into practice to any considerable extent, even in junior high schools. Glass reports that "a few of the fourteen centers have experimented with unified courses."³⁰ Of the cities studied by McGaughy, only 39 junior

²⁷*Op. cit.*, p. 193-202.

²⁸*Ibid.*, p. 198-99.

²⁹Glass, James M. "Present Curriculum Practices in the Junior High School," *Second Yearbook of the Department of Superintendence*. Washington: Department of Superintendence of the National Education Association, 1924, p. 233.

³⁰*Ibid.*, p. 233-34.

high schools reported courses in general mathematics, whereas 129 reported arithmetic, 100 reported algebra, and 20 reported geometry.³¹ However, with the exception of general science, mathematics is probably being taught as a general course in the junior high school more often than any other subject.

Changes in the social studies. Table IX shows that geography, civics, and American history were established seventh and eighth-grade subjects in the 8-4 type of organization. With the establishment of junior high schools, other history subjects (ancient, medieval, modern, general, and English history) were introduced. Koos summarizes the usual status of the social studies in junior high schools thus: "the history of our country through seventh and eighth grades; geography in seventh grade; community civics and ancient history vying with each other for a place in ninth grade, with civics rather in the ascendant; and the course in 'vocations' appearing in no negligible proportion of schools."³² The phases of the general subject-matter field of the social studies which are included in this enumeration are much the same as those recommended by the Committee of Ten for the seventh, eighth, and ninth grades.³³ The only obvious differences are the following two: History of Italy, Spain, and France was recommended for the ninth school year by the Committee of Ten but does not appear in the above enumeration; "vocations" is not mentioned by the Committee of Ten.

Other less obvious, although equally significant, changes have occurred, such as the "civil government" of the Committee of Ten becoming the "community civics" or "citizenship" of today, or geography becoming primarily a social study as compared with the geography of 1893, which was primarily a natural science. Evidence might be presented to show the shift from military and political to social and economic phases of history, and from governmental organization and machinery aspects of civil government to a functional basis.³⁴ However, it appears that the most significant present tendency in the social studies at the junior-high-school level is to unify the accepted subjects into a well-ordered sequence, ignoring the established subject bound-

³¹Ayer, Fred C., *et al.* "Facts on Time Allotment of Subjects," *Second Yearbook of the Department of Superintendence*. Washington: Department of Superintendence of the National Education Association, 1924, p. 159-61.

³²Koos, Leonard V. *The Junior High School* (Enlarged). Boston: Ginn and Company, 1927, p. 215-16.

³³"Report of the Committee of Ten on Secondary School Studies." New York: American Book Company, 1894, p. 35, 37, 41.

³⁴For such evidence, see: Koos, *op. cit.*, p. 214-37. Also:

"The Social Studies in the Elementary and Secondary School," *Twenty-Second Yearbook of the National Society for the Study of Education*, Part II. Bloomington, Illinois: Public School Publishing Company, 1923. 344 p.

aries in so far as possible.³⁵ Two illustrations are given in summary form.

At the Lincoln School of Teachers College, Columbia University, a reconstruction of the materials of instruction in the social studies of the junior high school has been effected which is representative of the tendency toward unification in this field.³⁶ The aim is stated as the engendering of a "better understanding of the problems and the complicated nature of the modern social world." In effecting the organization, the separate social studies—history, geography, and civics—were looked upon as separate subjects with fairly well-defined and separate fields of study, but no effort was made to insist upon the maintenance of strict boundaries "where there is obviously a greater educational contribution to be made by ignoring them." Ten major problems were used as centers about which to organize the materials of the course in social studies in the three junior-high-school years:

Seventh Grade:

1. Town and city life
2. Resources, industries, and cities of America
3. Industries and trade which bind nations together
 - a. The great industrial nations
 - b. The changing agricultural nations

Eighth Grade:

4. Explorers and settlers westward bound
5. Mechanical conquest of America
6. America's march toward democracy

Ninth Grade:

7. Americanizing our foreign born
8. Resources and industries in a machine world
9. Waste and conservation of America's resources
10. How nations live together

One of the most thoroughly developed city courses of study in the social studies for junior high schools is the one for Oakland, California.³⁷ In the Introduction, the following statements are made relative to the character of the course:

This is a composite course,—that is, the work in history, geography, civics, and occupations is merged as much as possible and developed in its natural

³⁵For detailed accounts of the development of the social studies, recommendations of national committees, and descriptions of courses, see:

Dawson, Edgar. "The Social Studies in Civic Education." *U. S. Bureau of Education Bulletin*, 1923, No. 23. Washington: Government Printing Office, 1923. 16 p.

Dawson, Edgar, et al. *Teaching the Social Studies*. New York: The Macmillan Company, 1927, p. 273-92.

Dunn, Arthur William (Compiled by). "The Social Studies in Secondary Education." *U. S. Bureau of Education Bulletin*, 1916, No. 28. Washington: Government Printing Office, 1916. 65 p.

Gambrill, J. Montgomery. "Experimental Curriculum-Making in the Social Studies." *The Historical Outlook*, 14: 384-406, December, 1923; 15: 37-55, January, 1924.

Shiels, Albert. "The Social Studies in Development," *Teachers College Record*, 23: 126-45, March, 1922.

³⁶See: Descriptive Booklet, published by the Lincoln School of Teachers College, 425 West 123rd Street, New York City, 1925, p. 47-52.

³⁷"Social Studies—Junior High Schools—Grades 7, 8, 9," *Superintendent's Bulletin, Course of Study Series*, No. 93. Oakland, California: Oakland Public Schools, 1926. 143 p.

relationship. There is no sharp cleavage line between history, geography, civics, and occupations—although the chronological sequence of American history is made the backbone of the structure, especially for Grades 7 and 8.

In the three year basic block, the subject matter balance is proportionately one year history, one year geography, one year civics.³⁸

Examination of the course of study reveals that its makers have had measurable success in achieving their goal. The course is organized on a problem basis. Although the more detailed material in the course of study reveals the unified character of the course better than the following enumeration of topics and problems, yet the close interrelation of history, geography, civics, and occupations can be inferred from this meagre statement:

Low Seventh Grade:

Major Topic:

The Development of the Americas, 1492-1789.

Main Problems:

1. Why and how the Americas were discovered and explored;
2. Why North America has proved to be a better continent for settlement than South America;
3. How the colonies in the new world were founded and peopled;
4. How European powers struggled for supremacy in the new world;
5. How the spirit of liberty, which started with the founding of certain English colonies in North America, grew until they gained their independence.

High Seventh Grade:

Major Topic:

The Development of the United States, 1789-1850.

Main Problems:

1. How the newly made states established a strong government;
2. How our relations with foreign countries helped make us stronger;
3. How the United States spread to the Pacific;
4. How the Industrial Revolution affected the development of our country and the lives of our people;
5. How the growth of democracy and education were advanced.

Low Eighth Grade:

Major Topic:

The Development of the United States, 1850-1900.

Main Problems:

1. How a threatened division in the United States resulted in a stronger union;
2. How improved methods of transportation and communication have helped to bring the people of the United States closer together;
3. How the United States has become a great "Melting Pot";
4. How the United States became a world power.

³⁸*Op. cit.*, p. 11.

High Eighth Grade:

Major Topic:

The Development of the United States, 1900 to the Present Time.

Main Problems:

1. How the conservation of America's resources has become a vital issue;
2. How the Great War made the United States a leader in world affairs;
3. How the world is becoming a great market;
4. How world unity and cooperation are being brought about.

Low Ninth Grade:

Major Topic:

California and Community Problems.

Main Problems:

1. What opportunities for successful living does California offer?
2. How the greatness of California depends upon the development of her resources;
3. How the growth of our two great metropolitan areas is due to natural advantages;
4. Why Oakland is a desirable community in which to live.

High Ninth Grade:

Major Topic:

Vocational Opportunity.

Main Problems:

1. Why it is necessary for a man to work;
2. What one should know about vocations before making his choice;
3. What are the opportunities offered for the student completing the junior high school course?
4. How can employment be obtained?
5. What should be the relationship of the individual to his government and society?

Changes in the natural sciences. Table IX shows that physiology and hygiene, and possibly some science of a nature-study or general-science character, were established elementary-school subjects in the 8-4 plan of organization. With the establishment of junior high schools, many other science subjects were introduced: sanitation, sex hygiene, general science, biology, botany, zoology, agriculture, and physiography. The Committee on Science of the Commission on the Reorganization of Secondary Education proposed for the junior high school that "general science, including hygiene" should be taught in either the seventh or eighth year five periods a week or in both years three periods a week, and that "biological science, including hygiene" should be taught in the ninth year, the subjects in this field to consist of botany, zoology, or general biology.³⁹ However, practice varies materially from these recommendations. As shown by Table IX, there is

³⁹"Reorganization of Science in Secondary Schools," *U. S. Bureau of Education Bulletin*, No. 26, 1920. Washington: Government Printing Office, 1920, p. 23.

a greater multiplicity of courses than the Committee proposed. However, data collected by Rodgers⁴⁰ indicate that most of these subjects are not offered frequently enough by junior high schools to make them of importance. Physiology and hygiene are taught, in the main, as separate subjects and not in conjunction with either general science or biology. On the other hand, biological science is not offered to any appreciable extent. Thus, the science offerings of the junior high school consist chiefly of physiology and hygiene in the seventh year, followed by general science in the eighth or ninth year.

The development of general science is the most significant change that has occurred in science materials of instruction at the junior-high-school level. This subject began primarily as a collection of more or less dissociated parts taken from the various established sciences. There has been a constant seeking for a principle of organization of content which will make general science a coherent whole. A principle beginning to be generally recognized is that the topics selected should involve the application of truths from several sciences. The Committee on Science of the Commission on the Reorganization of Secondary Education suggested the following seven topics: combustion, water, air and the weather, light and its benefits, work and energy, magnetism and electricity, and nature's balance of life.⁴¹ Many textbooks and courses have been worked out along such lines as the ones suggested by this committee. However, a balance between the various sciences has seldom been maintained. Biological and physical science still vie with each other as to which shall make the greater contributions. This is due in large measure to attempts to tie up general science, civics, and sanitation or community hygiene. Titles of some general science textbooks, such as *Civic Science in Home and Community*,⁴² are indicative of this.

Changes in English. Table IX does not indicate any changes in the field of English due to the organization of junior high schools, but other sources of information indicate that marked changes have been taking place. The Committee on Junior-High-School English of the Department of Superintendence stated that "There is a marked tendency to extend the scope of the English course far beyond its original limits. Dictionary use, penmanship, journalism, library methods, voice

⁴⁰Rodgers, J. Harvey. "Junior High School Curricula and Programs," *School Review*, 29: 198-205, March, 1921.

Made use of by:
Koos, Leonard V. *The Junior High School* (Enlarged). Boston: Ginn and Company, 1927, p. 172-75, 252-59.

⁴¹"Reorganization of Science in Secondary Schools," *U. S. Bureau of Education Bulletin*, No. 26, 1920. Washington: Government Printing Office, 1920, p. 25-28.

⁴²Hunter, George W. and Whitman, Walter G. *Civic Science in Home and Community*. New York: American Book Company, 1923. 527 p.

culture, physical exercises, debating, dramatics are now included in the courses of study in English in many junior high schools."⁴³ Such practices probably represent an extreme situation but they are truly indicative of a distinct tendency to bring many new types of material into the junior high school under the general title of English. There is also an obvious tendency to effect a unification of such materials rather than to maintain reading, language, grammar, and so forth as separate subjects. This tendency is due largely to the organization of the junior high school as a part of secondary education, the English of the junior high school being in some measure an extension downward of the English of the established high school. This amalgamation of the English subjects is attended by a certain bifurcation, a tendency to make rather sharp distinctions between the language-composition aspects and the reading-literature aspects. These two phases of English are given approximately equal time allotments in secondary programs of study.

Almost all who attempt to describe the present secondary-school situation with regard to English find that the situation has its foundation in the report of the Committee on English of the Commission on the Reorganization of Secondary Education.⁴⁴ Lyman made an analysis of this report and classified the "progressive tendencies in the teaching of English" which appeared in it.⁴⁵ The Committee on Junior-High-School English of the Department of Superintendence identified certain tendencies in junior-high-school practices relative to the materials of English.⁴⁶ From these two summaries, the tendencies in the materials of English instruction in junior high schools may be summarized as follows:

- A. The tendencies relative to English materials in general are:
1. To bring together as the one subject of English many related materials formerly offered as separate subjects;
 2. To bifurcate these materials, making rather sharp distinctions between the reading-literature materials and the language-composition materials.

⁴³"The Junior High School Curriculum," *Fifth Yearbook of the Department of Superintendence*, Washington: Department of Superintendence of the National Education Association, 1927, p. 88.

⁴⁴Hosic, James Fleming (Compiled by). "Reorganization of English in Secondary Schools," *U. S. Bureau of Education Bulletin*, 1917, No. 2. Washington: Government Printing Office, 1917. 181 p.

This is one of the most important of the several reports made by subject committees of the Commission, being a "report by the national joint committee on English representing the Commission on the Reorganization of Secondary Education of the National Education Association and the National Council of Teachers of English." (From title page of the bulletin.)

⁴⁵Lyman, R. L. "A Study of Twenty-Four Recent Seventh- and Eighth-Grade Language Texts," *Elementary School Journal*, 24: 440-52, February, 1924.

⁴⁶"The Junior High School Curriculum," *Fifth Yearbook of the Department of Superintendence*, Washington: Department of Superintendence of the National Education Association, 1927, p. 88-89.

- B. The tendencies relative to the reading-literature materials are:
1. To reduce oral reading materials and increase silent reading materials, making them broad and within the range of the pupils' comprehension and interest;
 2. To increase the materials for enjoyment and for training in various types of reading at the expense of materials for the purpose of technical literary analysis;
 3. To stress content reading in all fields.
- C. The tendencies relative to the language-composition materials are:
1. To place oral composition on an equality with written composition;
 2. To reduce the formal aspects to a functional basis by limiting spelling lists to words in common use; by teaching writing only until a certain minimum quality is attained; and by teaching grammatical rules and other language techniques only when the need for them arises;
 3. To take composition subjects from life and the experiences of pupils.

The above tendencies must not be taken for realized facts; they have considerable strength in recommendation and in practice, but still they are only tendencies. After making his "classification of progressive tendencies in the teaching of English," Lyman made an analysis of twenty-four language-composition textbooks for the seventh and eighth grades, all published since 1920. Twelve were distinctly intended for use in the reorganized junior-high-school unit and twelve for use in the traditional grade organization. The analysis of these textbooks revealed the tendencies just mentioned. Although they were somewhat more prominent in those texts designed for junior high schools, Lyman expressed the conviction that further changes might be made.

Changes in foreign languages. Table IX shows that foreign languages are not among the accepted subjects in the seventh and eighth grades under the 8-4 plan of organization, but that Latin, French, Spanish, and German appear in these grades when junior high schools are organized. Other investigators report Italian as appearing occasionally.⁴⁷ In the main, little change has been made in the materials of instruction other than to spread over two junior-high-school years the content formerly covered in one high-school year. Koos cites two attempts which have been made to adapt foreign-language materials to the new educational level.⁴⁸ One of them is an attempt to replace the "grammar method" of teaching Latin by the "translation method."⁴⁹ The other is an attempt to develop "Introductory Lessons in Latin and English"; the organization of which is indicated by the

⁴⁷Koos, Leonard V. *The Junior High School*. Boston: Ginn and Company, 1927, p. 260.

⁴⁸*Ibid.*, p. 266-67.

⁴⁹Fletcher, W. H. "The Translation Method of Teaching Latin," *Journal of Educational Psychology*, 11: 1-5, January, 1920.

following examples of lesson titles: "The Roman People and the Latin Language," "The Latin Language as It Lives Today," "How to Extend Your Knowledge of the Roman People," "Our Debt to Latin," "Latin Prefixes in English," and "How a Roman Spent His Day."⁵⁰

Such titles are indicative of the content of a new type of course in foreign languages. Sometimes it is given a broader scope by including topics relating to modern languages. A few schools are experimenting with a "general language" course which is designed to fulfill an orientation or a try-out function.

Organization of orientation and try-out courses. The number of subjects offered in the larger high schools is so great that a student can pursue only a few of them, and even under a well-organized plan of educational guidance his training may become specialized to an undesirable degree. General or orientation courses have been organized largely to correct this fault. The most notable case of this type of curriculum reconstruction is general science.

Try-out courses are very similar but their purpose is somewhat different. They are intended to afford an opportunity for the student to become acquainted with a number of related fields so that he may choose his future programs more intelligently. One of the most daring attempts to prepare a text for such a course is one written for an exploratory language course,⁵¹ a field in which one might least expect such efforts. A description of this text will help give an understanding of orientation and try-out courses. The authors state in the Preface that the course was developed in the junior high schools of West Hartford, Connecticut, as a try-out course in languages. They outline the purposes of the text as follows:

1. To offer all pupils the story of the development of language in general, and in particular an understanding of the historical place of their own language—English;

2. To furnish all pupils some knowledge of the history and etymology of our English words and the relation between them and the words of other languages;

3. To present a foretaste of the study of foreign language, and by so doing to give the pupils what has been termed a language sense;

4. To give the individual pupil, his teachers, and his parents some basis for judging whether he should continue the study of a specific language further;

5. To reduce through educational guidance the mortality which usually accompanies the first year's study of any foreign language;

6. To give the pupils who later elect a foreign language a background for the study of that subject. This includes a knowledge of the home life and national customs, as well as the geographical background.⁵²

⁵⁰Gray, Mason D. "Introductory Lessons in Latin and English" (Teacher's edition). Rochester, New York: Board of Education, 1922.

⁵¹Bugbee, Lucy Mallary, et al. *An Exploratory Course in General Language*. Chicago: Benjamin H. Sanborn and Company, 1926. 258 p.

⁵²*Ibid.*, Preface.

The text proper is divided into six parts. The first part is introductory, consisting of six chapters entitled respectively: Beginnings of Language, Development of Writing, Races and Languages, Greek Influence on Language, Roman Influence on Language, and The English Language. The second, third, fourth, and fifth parts are devoted to a presentation of the pronunciation, grammar, and vocabulary of Latin, French, Spanish, and German, respectively. Each language is introduced by a chapter describing the country of which the language is the native tongue. Many pictures are also included. Part Six is devoted to word study, aiming to develop the relationship of other languages to English.

No-doubt the experiment carried on at Okmulgee, Oklahoma, by Bruner,⁵³ is the most outstanding instance of the development of orientation and try-out courses, or as designated by Bruner, "broadening and finding" courses. The plan followed involved reorganization of the school from the administrative standpoint and use of certain guidance techniques in addition to reorganization of curriculum materials. However, we may pass directly to a description of the "broadening and finding" courses. The courses offered in the seventh grade included: art, auto-mechanics, cooking, electricity, expression, general shop work, instrumental music, journalism, mechanical drawing, science, sewing, typewriting, vocal music, vocational information for boys, vocational information for girls, and woodwork. In the eighth grade, the courses of this character included: arts and crafts, banking, brick-laying and cement, biological science, business, carpentry, English and Latin, forging and sheet metal, general repairs, home nursing, interior decorating, millinery, physical science, pre-modern languages, printing, and public speaking.

As an illustration of the character of the curricular changes involved in the organization of these "broadening and finding" courses, reference is here made to the larger aspects of the English-Latin course. The aim of such a course is said to be: (1) to enrich the pupil's experiences with an appreciation of art, literature, and so forth; (2) to give the pupil a "cross-section of Latin study from the most pleasant to the most difficult part"; and (3) to show the pupil the practical values of a study of Latin to our English vocabulary. The several aspects of the course include: (1) a study of the fall of Troy and the wanderings of Aeneas, (2) early English, (3) history of Rome and the spread of Latin, (4) the contact of Latin with English, (5) mod-

⁵³Bruner, Herbert B. "The Junior High School at Work," *Teachers College, Columbia University Contributions to Education*, No. 177. New York: Bureau of Publications, Columbia University, 1925. 111 p.

ern Latin, (6) word studies, (7) Latin words and expressions used in everyday life, (8) the elements of language (fundamentals of grammar), (9) how Latin helps us in spelling, (10) Latin prefixes in English, (11) syntax and inflection, and (12) a consideration of the question: "Is Latin worth while?"

Obviously, such provisions as those set forth above necessitate administrative reorganizations. Thus, besides the "enrichment" of any course, provision is made for the more capable students who can do the twelve years of grade and high-school work in ten years; for the less capable, who require more than six years to do the elementary work and who may spend only two to four years in the junior-senior high-school cycle; as well as for the average or normal students.

Changes in materials of instruction at the senior-high-school level. Significant data are not available in such form as to make it possible to identify the trends in subject offerings of the senior-high-school years which have resulted from the organization of a junior-high-school unit. The senior-high-school years are dominated to such an extent by college-admission requirements that the influences of administrative reorganization are no doubt greatly vitiated, even to a greater degree than has been shown to be the case in the ninth school year. In the main, the changes are not distinct from those described in the preceding chapter for the four-year high school. However, two of these tendencies have been somewhat accentuated. In the first place, development of a new unit at the junior-high-school level which places emphasis upon a core curriculum of constants and try-out courses has left the way open to, in fact has probably stimulated, an increase in vocational and prevocational courses; it has, in the second place, given impetus to curriculum organization on a vocational basis. The Commission on Reorganization of Secondary Education explicitly assumed the junior high school and emphatically urged vocational subjects and designation of curricula in the senior high school on a vocational basis.

Changes in materials of instruction at the junior-college level. Questions relative to changes in materials of instruction at the junior-college level may be disposed of briefly, for it is clear in reading such reports as the lengthy one by Koos,⁵⁴ or the newer account by Proctor,⁵⁵ that offerings in junior colleges have broken very little with tradition. In studying trends over a long period of time, one finds evidence of significant downward movements of subjects from the later college

⁵⁴Koos, Leonard Vincent. "The Junior College," *Research Publications of the University of Minnesota*, Education Series, No. 5, Vol. I-II. Minneapolis: University of Minnesota, 1924. 682 p.

⁵⁵Proctor, William Martin (Edited by). *The Junior College*. Stanford University, California: Stanford University Press, 1927, p. 60-74.

years, shifts which seem to have occurred independently of the junior college as such. In fact, the downward reaching of the college and the upward reaching of the high school have produced a twilight zone which defies all attempts to draw a distinct line of demarcation between the secondary school and college. Few subjects are universally confined to either division. The only subjects which seem to be at all distinctively junior-college in attachment and character are courses which are intended to prepare for the semi-professional phases of commerce, engineering, and the like, and "orientation" courses somewhat analogous to those of the junior high school. Both types of courses tend to spread to the first years of four-year colleges.

The junior-college movement is beginning to evidence itself in the titles of textbooks. A few series of books are being published which bear titles indicating that they are for junior-college use.⁵⁶ However, the beginning in this field is similar to the stage of junior-high-school textbooks a decade or more ago in which the designation of a book as a junior-high-school text was more an expression of a hope than of an actuality.

Concluding statement. Many changes in the administrative organization of the public-school system are either reflected in, or made in response to, curricular changes. The relationship is reciprocal and change or lack of change in either may facilitate or retard changes in the other. Two changes in administrative organization have borne the most direct relation to changes in materials of instruction: regrouping of grades, and departmentalization of instruction in grades seven and eight. The junior-high-school level has been and is still the focal point of change. From this point, influences spread to both the higher and lower educational levels.

In the junior-high-school years, two main types of changes in materials of instruction have occurred: (1) changes involving subjects as units, and (2) changes in the content of subjects. The number of subjects at this level has greatly increased with organization of the junior high school. Most of the subjects appearing in the upper grades under the traditional organization have been retained in the new unit, although not so universally offered as previously. Increase in the number of subjects has been accompanied by organization of curricula similar to those on the high-school level. However, the main tendency is to organize a core curriculum with electives.

The chief tendency in reorganization of the content of established subjects is to unify the several subject-matter fields, bringing together

⁵⁶An example is the University of Chicago junior-college series in German and French.

two or more subjects formerly discrete, reordering the topics, and organizing them upon new bases. Courses such as general mathematics and general science and amalgamation of several subjects into the one subject of English have resulted. In addition to reorganization of the materials of instruction retaining the traditional subject-matter division, new orientation and try-out subjects have been developed which more or less completely ignore the older lines of distinction. In the main, these subjects have been given a vocational bias.

On the senior-high-school level, the only change that is noticeably different from the changes in the traditional four-year high school is an intensified specialization of materials of instruction, particularly along vocational lines.

The junior-college level exhibits almost no well-defined tendencies, the materials of instruction remaining about the same as those found with the traditional organization. There is some evidence of an increase in materials designed to train for the semi-professions.

CHAPTER VI

CURRICULUM RECONSTRUCTION: SELECTION AND ORGANIZATION OF MATERIALS OF INSTRUCTION SO AS TO SECURE ADAPTATION TO INDIVIDUAL DIFFERENCES

Problems of this chapter. In preceding chapters, occasional references have been made to provisions for individual differences, particularly in the discussion of objectives (Chapter III, p. 46-49) and of parallel courses, electives, and differentiated curricula (Chapter IV, p. 66-69). However, the problem of providing for individual differences is so complex and cuts so sharply across most other educational problems that it seems advisable to devote a separate chapter to provisions for such differences. In this chapter, an attempt is made to trace briefly the growth since 1893 in recognition of the need for adaptation of education to individual differences, to summarize the types of provisions that have been made, and to present an analysis and discussion of the selection and organization of materials of instruction necessary to secure adaptation to individual differences.

Recognition by the Committee of Ten of the need for adaptation.

At the time the Committee of Ten made their report, some provisions for individual differences were generally recognized.¹ They stated, "It has been a very general custom in American high schools and academies to make up separate courses of study for pupils of supposed different destinations, the proportions of the several studies in the different courses being various."² The Committee felt that the chaotic condition of secondary-school programs of study, which had largely grown out of the effort to supply different "courses of study for pupils of supposed different destinations," was in serious need of simplification. In the main, the solution proposed was fewer "courses of study" ("programmes" or curricula) and reduction in the number of short courses.

At various places in the Report, they spoke of the "welfare of an individual pupil,"³ the need of "selection for the individual,"⁴ the need

¹No doubt some recognition of need at the secondary-school level for adaptation of formal education to individual differences has existed from the beginning of the development of schools in the United States, although largely cared for through private initiative. See: Seybolt, Robert Francis. "The Evening School in Colonial America," *University of Illinois Bulletin*, Vol. 22, No. 31, Bureau of Educational Research Bulletin No. 24. Urbana: University of Illinois, 1925. 68 p.

Seybolt, Robert Francis. "Source Studies in American Colonial Education—The Private School," *University of Illinois Bulletin*, Vol. 23, No. 4, Bureau of Educational Research Bulletin No. 28. Urbana: University of Illinois, 1925. 109 p.

²Report of the Committee of Ten on Secondary School Studies." New York: American Book Company, 1894, p. 17.

³*Ibid.*, p. 43.

⁴*Ibid.*, p. 40.

of providing for boys and girls who leave school before they complete the secondary-school course,⁵ and the need of giving pupils the opportunity to sample various fields of learning so as to make an intelligent choice.⁶ Nevertheless, they appear to have assumed that the only needed provisions for individual differences were choices of "programmes of study" and subjects of study. They specifically stated "that every subject which is 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, no matter what the probable destination of the pupil may be, or at what point his education is to cease."⁷ Apparently, they assumed that all secondary-school pupils, at least those within any one class, were of "like intelligence and maturity," for they stated:

The suggestions of the Conferences presuppose that all the pupils of like intelligence and maturity in any subject study it in the same way and to the same extent, so long as they study it at all,—this being a point on which all the Conferences insist strongly. No provision is made, therefore, for teaching Latin, or algebra, or history to one portion of a class four times a week, and to another portion of the same class only thrice or twice a week. Such provisions are very common in American schools; but the recommendations of the Conferences, if put into effect, would do away with all expenditures of this sort.⁸

It appears strange that the Committee, being greatly influenced by Charles W. Eliot, said no more than it did about provision for individual differences, and that they took a positive stand in favor of uniformity. President Eliot's addresses delivered about this time reveal a strong conviction on his part that individual differences should be amply provided for, both in justice to the individual and to society, particularly our democratic society. Especially in one address, "Undesirable and desirable uniformity in schools,"⁹ delivered before the National Education Association at Saratoga on July 12, 1892, he set forth strong arguments in favor of variations to provide for individual differences. He condemned in no uncertain terms the sort of education which keeps all pupils together, which never allows the bright ones to work to their utmost, which urges the slow ones forward at a rate that drives some of them to despair, and which aims at a uniform product. Rather, he advocated that pupils should be more unlike in powers and acquisitions at the end than at the begin-

⁵*Op. cit.*, p. 47-48.

⁶*Ibid.*, p. 45-47.

⁷*Ibid.*, p. 17. This, the Committee states, is the unanimous conclusion of all ten conferences held under the direction of the Committee. See, for example, the reports of the Latin Conference, p. 75; the Natural History Conference, p. 140-41; the History, Civil Government, and Political Economy Conference, p. 165; and the Geography Conference, p. 234-35.

⁸*Ibid.*, p. 38-39.

⁹Eliot, Charles William. *Educational Reform*. New York: The Century Company, 1898, p. 273-300.

ning. He urged that there should be a thorough exploration of all the capacities of pupils, largely through a wider program of studies in the secondary school. He further advocated less strict grading and fewer simultaneous promotions, a greater individualization of instruction, and careful study of the "temperament, constitution, and mental aptitudes and defects" of each pupil. Supplemental to these provisions for individualization, he advocated a uniformity similar to that recommended by the Committee of Ten but differing from it in being merely a uniformity in minimum essentials or "reasonable minimum expectation of attainment."

The need of providing for individual differences in all schooling, particularly for pupils over nine or ten years of age, seems to have been of great concern to Eliot, as he referred to it time and again in his addresses.¹⁰ On many occasions he pronounced uniformity a curse and urged provision for individual differences. In an address before the National Education Association on February 16, 1892, at Brooklyn, "Shortening and Enriching the Grammar-School Course," he made perhaps his broadest and most far-seeing single pronouncement on this subject when he said, "Selection of studies for the individual, instruction addressed to the individual, irregular promotion, grading by natural capacity and rapidity of attainment, and diversity of product as regards age and acquisitions, must come to characterize the American public school, if it is to answer the purposes of a democratic society."¹¹

Recognition by the Committee on College Entrance Requirements of the need for adaptation. The special subject-matter committees which cooperated with the Committee on College Entrance Requirements did not deal with the subject of provisions for individual differences. However, the main committee dealt specifically with the problem. Their major suggestion was that adaptations should be made through the medium of electives and variations in curricula.¹² With reference to their first resolution, "That the principle of election be recognized in secondary schools," they stated, "the committee merely

¹⁰Eliot. *Op. cit.*:

"Shortening and Enriching the Grammar-School Course," p. 253-69, especially p. 253-54, 260-63, 265-68. Address before the National Education Association, Brooklyn, February 16, 1892.

"The Grammar School of the Future," p. 303-11, especially p. 308-11. Address before the Massachusetts State Teachers' Association, December, 1893.

"The Unity of Educational Reform," p. 315-39, especially p. 317, 320, 327. Address before the American Institute of Instruction at Bethlehem, New Hampshire, July 11, 1894, and published in the *Educational Review* of October, 1894.

"The Function of Education in Democratic Society," p. 401-18, especially p. 408-9. Address before the Brooklyn Institute on October 2, 1897, and published in the *Outlook*.

¹¹*Ibid.*, p. 265.

¹²"Report of the Committee on College Entrance Requirements." Washington: National Education Association, 1899, p. 27-28, 32-33, 43.

indorses a practice already very common in secondary schools."¹³ With reference to variation in curricula, they made their most emphatic statement in regard to adaptation to individual differences, saying that the program of studies of a school "may be made to yield several curriculums, or possibly, almost as many curriculums as there are students, each curriculum perhaps being better than the others, from an individual point of view."¹⁴

Their two most important additions to the recommendations already made by the Committee of Ten relative to adaptation to individual differences were: first, emphasis on guidance, the principal acting as an advisor to individual students;¹⁵ and second, recognition of the need of special provisions for "gifted students."¹⁶ Their only suggestion was more rapid progress, upon which they placed considerable emphasis without suggesting practical means for its accomplishment.

Despite their explicit recognition of the need for adaptation to individual differences, the Committee on College Entrance Requirements made some very positive statements with regard to desirable uniformity. After stating that "absolute uniformity in our secondary education thruout the country, or thruout any considerable section of it, is so improbable that it is a waste of time to discuss the question whether it is desirable or not," they launched into an argument for uniformity in courses of study ("the quantity, quality, and method of work in any given subject of instruction"), arguing that "the course of study is the unit out of which curriculums and programs are framed," and that "national units or norms" should be set up and generally adopted.¹⁷ No recognition is given to the possibility of these "units or norms" corresponding to Eliot's "reasonable minimum expectation of attainment." Consequently, this committee was in essential agreement with the position of the Committee of Ten "that every subject . . . should be taught in the same way and to the same extent to every pupil so long as he pursues it."

Recognition by the Commission on the Reorganization of Secondary Education of the need for adaptation. In the interim between the report by the Committee on College Entrance Requirements and publication of the Cardinal Principles of Secondary Education, there was a marked development in recognition of the significance of individual differences, brought about largely through the child study

¹³*Op. cit.*, p. 27.

¹⁴*Ibid.*, p. 43.

¹⁵*Ibid.*, p. 28.

¹⁶*Ibid.*, p. 35-36. This appears to be one of the earliest uses of "gifted" in pedagogical literature, a term which has become widely used in recent years.

¹⁷*Ibid.*, p. 41-45.

movement and related influences. The Commission on the Reorganization of Secondary Education laid down three fundamental propositions:

"The purpose of democracy is so to organize society that each member may develop his personality primarily through activities designed for the well-being of his fellow members and of society as a whole."¹⁸

"Consequently, education in a democracy, both within and without the school, should develop in each individual the knowledge, interests, ideals, habits, and powers whereby he will find his place and use that place to shape both himself and society toward ever nobler ends."¹⁹

"The doctrine that each individual has a right to the opportunity to develop the best that is in him is reinforced by the belief in the potential, and perchance unique, worth of the individual. The task of education, as of life, is therefore to call forth that potential worth."²⁰

These three propositions form the basis on which the Commission built their concepts of the specializing and unifying functions of the secondary school. In essence, the first of these functions calls for full recognition and proper development of individual differences so that most effective advantage may be taken of them in democratic society. For example, the Commission wrote:

The content and teaching methods of every study should be adapted to the capacities, interests, and needs of the pupils concerned. In certain studies these factors may differ widely for various groups of pupils, e. g., chemistry should emphasize different phases in agricultural, commercial, industrial, and household-arts curriculums.²¹

The second function of the secondary school, unification, calls for elements common to all pupils. The following provisions were proposed by the Commission:

- (a) Studies of direct value for this purpose, especially the social studies and the mother tongue, with its literature
- (b) The social mingling of pupils through the organization and administration of the school
- (c) The participation of pupils in common activities in which they should have a large measure of responsibility, such as athletic games, social activities, and the government of the school²²

Summary. During the twenty-five years between the report by the Committee of Ten and publication of the Cardinal Principles of Secondary Education, marked changes took place in educational thinking relative to provisions for individual differences. The Committee

¹⁸"Cardinal Principles of Secondary Education." *U. S. Bureau of Education Bulletin*, 1918, No. 35. Washington: Government Printing Office, 1918, p. 9.

¹⁹*Loc. cit.*

²⁰*Ibid.*, p. 32.

²¹*Ibid.*, p. 22. This statement places the Commission in a position diametrically opposed to one of the fundamental positions assumed by the Committee of Ten and the Committee on College Entrance Requirements that "every subject . . . should be taught in the same way and to the same extent to every pupil so long as he pursues it." Other provisions which the Commission felt were necessary in order to fulfill the specializing function are presented on p. 106-7.

²²*Ibid.*, p. 23.

of Ten recognized essentially two provisions; namely, electives and parallel "programmes." At the same time, they advocated absolute uniformity for all who studied a particular subject. The Committee on College Entrance Requirements maintained essentially the same position with two additions; namely, acceleration of "gifted students" and emphasis on guidance, particularly by the principal. The Commission on the Reorganization of Secondary Education came out more boldly in their stand on provisions for individual differences. They explicitly recognized them by advocating differentiated curricula, electives, and a wide range of subjects. They also made proposals diametrically opposed to uniformity of treatment of any particular subject for all pupils. They amplified the guidance idea of the Committee on College Entrance Requirements into "exploration and guidance," and greatly expanded the same Committee's idea of acceleration of "gifted students" under the caption of "flexibility of organization and administration" so as to include all pupils. Recognizing complementary functions of education—the specializing and unifying functions—the Commission advocated not the uniformity advanced by the preceding two committees but rather a few constants, such as English and the social studies, for all pupils, and organization and administration of the school so as to bring about a mingling of the pupils in extra-curricular activities.

Types of provisions for individual differences. As has already been pointed out, the Commission on the Reorganization of Secondary Education, recognizing that the nurturing of individual differences is for the good of both the individual and society, conceived of provisions for individual differences as necessary to a realization of the specializing function of secondary education. They did not advocate merely an adjustment to individual differences but also a conscious encouragement and development of them, thus being in full accord with Eliot's dictum "that a teacher who did not discharge his pupils at the end of each year much more unlike in powers and acquisitions than they were at the beginning was a proved failure."²³ In this vein, the Commission proposed five types of provisions for individual differences, briefly discussing each so that it might have a fullness of meaning.

Specialization demands the following provisions in secondary education:

(a) *A wide range of subjects.* In order to test and develop the many important capacities and interests found in pupils of secondary-school age, the school should provide as wide a range of subjects as it can offer effectively.

(b) *Exploration and guidance.* Especially in the junior high school the pupil should have a variety of experience and contacts in order that he may

²³Eliot, Charles William. *Educational Reform*. New York: The Century Company, 1898, p. 275.

explore his own capacities and aptitudes. Through a system of educational supervision or guidance he should be helped to determine his education and his vocation. These decisions should not be imposed on him by others.

(c) *Adaptation of content and methods.* The content and teaching methods of every study should be adapted to the capacities, interests, and needs of the pupils concerned. In certain studies these factors may differ widely for various groups of pupils, e. g., chemistry should emphasize different phases in agricultural, commercial, industrial, and household-arts curriculums.

(d) *Flexibility of organization and administration.* Flexibility should be secured by "election" of studies or curriculum, promotion by subjects from the beginning of the junior high school, possible transfer from curriculum to curriculum, provision for maximum and minimum assignments for pupils of greater and less ability, and, under certain conditions, for the rapid or slow progress of such pupils.

(e) *Differentiated curriculums.* The work of the senior high school should be organized into differentiated curriculums. The range of such curriculums should be as wide as the school can offer effectively. The basis of differentiation should be, in the broad sense of the term, vocational, thus justifying the names commonly given, such as agricultural, business, clerical, industrial, fine-arts, and household-arts curriculums. Provision should be made also for those having distinctively academic interests and needs. The conclusion that the work of the senior high school should be organized on the basis of curriculums does not imply that every study should be different in the various curriculums. Nor does it imply that every study should be determined by the dominant element of that curriculum. Indeed any such practice would ignore other objectives of education just as important as that of vocational efficiency.²⁴

This classification of provisions for specialization does not include, apparently, certain other means of providing adaptations to individual differences, the four most apparent being: (1) ability grouping; (2) project-problem methods; (3) variations in learning exercises, and (4) variations in objectives. The latter two, however, are implied in "maximum and minimum assignments for pupils of greater and less ability."

It is evident that these nine means of providing for individual differences are not all curricular, that some may even be made without any significant changes in the curriculum. Flexibility of organization and administration, and ability grouping are primarily administrative provisions;²⁵ adaptation of methods and project-problem methods are obviously adaptations of method;²⁶ the other types of provisions are all

²⁴"Cardinal Principles of Secondary Education," *U. S. Bureau of Education Bulletin*, 1918, No. 35. Washington: Government Printing Office, 1918, p. 21-22.

²⁵For discussions of such provisions, including bibliographies, see:

"Adapting the Schools to Individual Differences," *Twenty-Fourth Yearbook of the National Society for the Study of Education*, Part II. Bloomington, Illinois: Public School Publishing Company, 1925. 410 p.

"The Development of the High-School Curriculum," *Sixth Yearbook of the Department of Superintendence*. Washington: Department of Superintendence of the National Education Association, 1928, p. 195-212.

"The Education of Gifted Children," *Twenty-Third Yearbook of the National Society for the Study of Education*, Part I. Bloomington, Illinois: Public School Publishing Company, 1924. 443 p.

²⁶In addition to the references just given for administrative provisions, see:

Monroe, Walter S. *Directing Learning in the High School*. Garden City, New York: Doubleday, Page and Company, 1927, p. 377-404.

primarily curricular, although they may involve, encourage, or be facilitated by administrative and methodological adaptations.

Curricular provisions for individual differences are classifiable under three major heads: objectives, materials of instruction, and learning exercises. Inasmuch as adaptations of objectives were discussed in Chapter III,²⁷ they need not be discussed here except as their intimate relation to materials of instruction makes it necessary in order to give an adequate understanding of adaptations of the latter. It was indicated in Chapters I and III²⁸ that comparatively little attention has been given to learning exercises by those who have dealt with curriculum problems. Hence, we are concerned in the main at this point with adaptations of materials of instruction.

Adaptations of materials of instruction to individual differences have been accomplished through three main avenues: elective studies, organization of various types of curricula, and variation in the content of particular subjects.²⁹

Adaptation by means of electives and curricula. The need of providing for individual differences was influential in establishing electives and curricula; however, many other factors, such as the crowded nature of the secondary-school curriculum, were just as prominent. The Committee of Ten accepted a much larger list of subjects as "proper for secondary schools" than they were willing for any one secondary-school pupil to attempt. Their major consideration in suggesting that electives be permitted or that "programmes of study" (curricula) be organized appears not to have been so much to provide for individual differences as to provide for thoroughness in the subjects studied and the opportunity for every subject to develop "a good training capacity by giving it an adequate time allotment."³⁰ The Committee set up the recommendations of the nine conferences as standards to which their programs should conform. All of the standards related to the training value of the programs rather than to their efficiency in providing for individual differences. These standards are summarized thus:

They [the four programmes] treat each subject in the same way for all pupils with trifling exceptions; they give time enough to each subject to win

²⁷See p. 46-49.

²⁸See p. 14, 30.

²⁹In tracing the development of recognition of need for adaptation to provide for individual differences, much evidence from the reports of the Committee of Ten, the Committee on College Entrance Requirements, and the Commission on the Reorganization of Secondary Education has been presented which has necessarily included what they have to say relative to curricular adaptations. Consequently, this evidence is not repeated. In the following discussion, such additional evidence is presented from current practices as seems necessary to develop the points. Otherwise, the discussion is based upon the evidence already given.

³⁰"Report of the Committee of Ten on Secondary School Studies." New York: American Book Company, 1894, p. 39-43.

from it the kind of mental training it is fitted to supply; they put the different principal subjects on an approximate equality so far as time-allotment is concerned; they omit all short information courses; and they make sufficiently continuous the instruction in each of the main lines, namely, language, science, history, and mathematics.³¹

If one reads between the lines, especially with the aid of the writings of Charles W. Eliot, he sees that the Committee of Ten approved the organization of programs of study so as to provide for individual differences in interests, tastes, and future occupations, but not to provide for individual differences in capacity.

The Committee on College Entrance Requirements more explicitly approved electives as a means of making intelligent provision for individual differences.³² The Committee did not believe in unlimited election, but favored election after consideration of the matter by pupil, principal, teachers, and parents. They also believed that election should be tempered by constants, and therefore suggested the following: "Four units in foreign languages (no language accepted in less than two units), two units in mathematics, two in English, one in history, and one in science."³³ The position of the Committee is adequately summarized in their own words, thus:

Secondary schools, therefore, should be allowed to arrange their programs in accordance with local environment, the demands of their constituency, and the tastes of their pupils; and when the work in any study is well done and a sufficient amount of it has been acquired, and this work is consistent with that done along other lines, it should be accepted by the college. The committee believes there should be constants in every secondary school.³⁴

Although not dealing directly with organization of curricula, the Committee approved of their being organized so as to provide for individual differences in interests and tastes of pupils, the demands of the school's constituency, and the influence of local conditions.³⁵ However, with the exception of gifted children, they apparently did not think of electives or curricula as means of providing for differences in capacity.

The Commission on the Reorganization of Secondary Education were explicit in their statements that secondary education should provide for individual differences in capacities, aptitudes, interests, tastes, and probable futures. Electives, differentiated curricula, and a wide range of subjects are among the provisions for individual differences specifically advocated by the Commission. The justification advanced for such provisions was the need for testing and allowing a full de-

³¹*Op. cit.*, p. 44-45.

³²"Report of the Committee on College Entrance Requirements." Washington: National Education Association, 1899, p. 27-28.

³³*Ibid.*, p. 52.

³⁴*Ibid.*, p. 33.

³⁵*Ibid.*, p. 42-43.

velopment of the many and varied capacities, interests, and the like found in pupils of secondary-school age so that the specializing function of secondary education might be realized. Although recognizing differences in capacities and advocating electives and differentiated curricula, the Commission does not seem to have implied in any way that some curricula were for pupils of less native intelligence and other curricula for those of greater intelligence. The vocational basis was the only one advocated for curriculum differentiation.³⁶

There is much evidence that this belief in the need of providing for individual differences by means of electives, differentiated curricula, and a wide range of subjects is finding expression in secondary-school practice. A. A. Douglass points out that curriculum variables and free electives are provided to take account of individual differences in interests, capacities, probable future vocations, and the like.³⁷ Keener has indicated in more concrete fashion some of the provisions for individual differences made by the Chicago high schools.

Teachers have recognized differences in the mental ability and interests of individual pupils, and efforts have been made to provide for their needs on the basis of these differences. Electives have been provided, because we recognized that all pupils will not derive equal benefit from the same course and that all pupils are not interested in the same subjects. In practically all of the high schools technical and commercial courses have been introduced for the benefit of those pupils who wish training which will assist them in securing industrial or commercial positions. Two-year vocational courses have been provided for pupils who wish to specialize in vocational work and who cannot take the full four-year course.³⁸

Hughes, after making a questionnaire survey of provisions for individual differences, states that "the more common method of caring for the superior student is to allow him to carry one or more extra subjects."³⁹ Such provision naturally implies electives as a means of providing for such differences.

In the increase in subjects and curricula reported for public high schools of the north-central states by Stout,⁴⁰ for senior high schools by Counts,⁴¹ and for junior high schools by Glass,⁴² we find evidence

³⁶"Cardinal Principles of Secondary Education," *U. S. Bureau of Education Bulletin*, 1918, No. 35. Washington: Government Printing Office, 1918, p. 8, 21-22.

³⁷Douglass, Aubrey A. *Secondary Education*. Boston: Houghton Mifflin Company, 1927, p. 587-88.

³⁸Keener, E. E. "Mental Ability of Freshman High-School Pupils," *Journal of Educational Research*, 11: 114, February, 1925.

³⁹Hughes, W. H. "Provisions for Individual Differences in High-School Organization and Administration," *Journal of Educational Research*, 5: 65, January, 1922.

⁴⁰Stout, John Elbert. "The Development of High-School Curricula in the North Central States from 1860 to 1918," *Supplementary Educational Monographs*, No. 15. Chicago: University of Chicago, 1921, p. 277-79. Mentioned in this bulletin on p. 21-24, 62-65.

⁴¹Counts, George S. "The Senior High School Curriculum," *Supplementary Educational Monographs*, No. 29. Chicago: University of Chicago, 1926. 160 p. Mentioned in this bulletin on p. 60-62.

⁴²Glass, James M. "Present Curriculum Practices in the Junior High School," *Second Yearbook of the Department of Superintendence*. Washington: Department of Superintendence of the National Education Association, 1924, p. 227-242. Mentioned in this bulletin on p. 88.

of the same sort of provision for individual differences as that recognized more explicitly by Douglass, Keener, and Hughes. In making a study of the titles of secondary-school curricula, Good found a total of 130 different titles, with an average of five curricula per school.⁴³ One technical high school offered twenty-one curricula, and one large city system offered thirty-two. Examination of the 130 titles shows that almost every one has some vocational meaning. Such multiplication of subjects and curricula on a vocational basis is intended to provide in the main for differences in vocational interests and probable vocational futures. However, there is some evidence that differences in native capacity are provided for to a limited extent by these means. In a study of first-year high-school pupils in Chicago, Keener found significant differences in the mental ages of pupils electing different curricula. The median mental ages ranged *from* 13 yr. 5 mo. for the two-year technical curriculum *through* 13 yr. 7 mo. for the two-year commercial curriculum, 14 yr. 5 mo. for the four-year technical, 14 yr. 9 mo. for the four-year commercial, 14 yr. 11 mo. for the four-year modern language, *to* 15 yr. 1 mo. for the four-year Latin curriculum. "The differences between the median mental age of the two-year technical pupils and the four-year Latin pupils is one year and eight months. Although the Latin pupils have the highest mental rating, they also show the highest percentage of failures."⁴⁴

Adaptation by means of variation in subject content. Neither the Committee of Ten nor the Committee on College Entrance Requirements gave any consideration to possibilities of varying the content of subjects to provide for individual differences among pupils studying the same subject. In fact, as has already been noted, they both advocated "that every subject . . . should be taught in the same way and to the same extent to every pupil." The Commission on the Reorganization of Secondary Education entirely reversed this position. They suggested that provision should be made for differences in interests, tastes, capacities, and probable futures. Provision for the first three types of differences involve adjustments for pupils pursuing the same subject. Provision for probable futures are effected in the main by adjustment of courses to the purposes of different curricula. For instance, the Commission suggested that the chemistry course offered in the agricultural curriculum should be markedly different from

⁴³Curriculum titles were collected from four-year high schools in thirty cities, senior high schools in thirteen cities, junior high schools in twelve cities, and fourteen state high-school manuals.

Good, Carter V. and Good, Raymond E. "Titles of Curriculums Offered or Suggested in Secondary Schools," *School Review*, 35: 503-9, September, 1927.

⁴⁴Keener, E. E. "Mental Ability of Freshman High-School Pupils," *Journal of Educational Research*, 11:121, February, 1925.

the one offered in the commercial curriculum. Such variations are frequently made, especially in subjects which the Commission called "curriculum variables," as is evidenced in the list of subjects quoted from Stout on pages 63-65. These are fairly obvious adjustments and need not be discussed further at this point.

Differences in interests, tastes, and capacities which exist within any particular vocational group are more subtle than the differences in vocational interests and probable futures which exist between vocational groups. In consequence, provisions for differences in interests, tastes, and capacities within groups are not so patent as are provisions for vocational differences.⁴⁵ Ability grouping is one administrative device that has been employed to care for differences in capacity.⁴⁶ No doubt it has been an important factor in emphasizing the need for more subtle adaptations of subject content. The following statement by Frank G. Pickell is representative of a point of view that has developed:

There is little or no excuse for the classification of pupils or the extensive study of their capacity, unless we modify the content of courses and methods of teaching for the various ability groups formed.⁴⁷

He goes on to state that "in every Cleveland junior high school the modification of the courses of study has been undertaken, and in some, the work has progressed far enough for revision to be in stenciled form."

Brogue has given the following outline of the second month's work in first-year composition as an example of variation of content in English.⁴⁸

⁴⁵For a summary of a number of studies of pupils' interests and needs, including a lengthy bibliography, see:

Uhl, Willis L. *Secondary School Curricula*. New York: The Macmillan Company, 1927, p. 377-436.

⁴⁶For bibliographies on ability grouping, see:

Ryan, Heber Hinds and Creelius, Philippine. *Ability Grouping in the Junior High School*. New York: Harcourt, Brace and Company, 1927. 224 p.

Odell, Charles W. "An Annotated Bibliography Dealing with the Classification and Instruction of Pupils to Provide for Individual Differences," *University of Illinois Bulletin*, Vol. 21, No. 12, Bureau of Educational Research Bulletin No. 16. Urbana: University of Illinois, 1923. 50 p. 346 titles are given.

"Adapting the Schools to Individual Differences," *Twenty-Fourth Yearbook of the National Society for the Study of Education*, Part II. Bloomington, Illinois: Public School Publishing Company, 1925, p. 317-35. This bibliography of 107 titles on "Classification, ability grouping, and promotion plans" does not duplicate Odell's bibliography but brings it up to date in 1925.

"The Education of Gifted Children," *Twenty-Third Yearbook of the National Society for the Study of Education*, Part I. Bloomington, Illinois: Public School Publishing Company, 1924, p. 389-443. This is a bibliography of 453 titles.

⁴⁷Pickell, Frank G. "Ability Grouping of Junior High-School Pupils in Cleveland: Some Practical Aspects of the Problem," *Journal of Educational Research*, 11: 250, April, 1925.

⁴⁸Brogue, Arthur. "Differentiated Courses for Pupils of Superior Ability in the J. Sterling Morton High School," *Twenty-Third Yearbook of the National Society for the Study of Education*, Part I. Bloomington, Illinois: Public School Publishing Company, 1924, p. 367-68.

HIGH SECTIONS

Technique

Punctuation
 The apostrophe
 Addresses, dates
 Grammar
 Verbs
 Nouns
 Subject of verb
 Pronouns
 Predicate nominatives
 Object of verb
 Transitive and intransitive verbs

Practice

Oral theme: How to make an article the pupil has actually made, or how to play a game. (Encourage use of diagrams.) Written theme: How to find some place in the pupil's own experience.

*Minimum Essentials
Test*

1. Apostrophe: possession, contraction
2. Comma with addresses and dates
3. Recognition of verbs, nouns, pronouns
4. Recognition of subjects, predicate nominatives, direct objects of verbs
5. Discrimination between transitive and intransitive verbs

MIDDLE SECTIONS

Technique

Punctuation
 The apostrophe
 Addresses, dates
 Grammar
 Verbs
 Nouns
 Subject of verb
 Pronouns
 Predicate nominatives
 Object of verb

Practice

Oral theme: How to make an article the pupil has actually made, or how to play a game. (Encourage use of diagrams.) Written theme: How to find some place in the pupil's own experience.

*Minimum Essentials
Test*

1. Apostrophe: possession, contraction
2. Comma with addresses and dates
3. Recognition of verbs, nouns, pronouns
4. Recognition of subjects, predicate nominatives, direct objects of verbs

LOW SECTIONS

Technique

Punctuation
 The apostrophe
 Addresses, dates
 Grammar
 Verbs
 Nouns
 Insistence upon proper form
 Use of dictionary
 Logical definition
 Spelling—Selected from written work

Practice

Oral theme: How to make an article the pupil has actually made, or how to play a game. (Encourage use of diagrams.) Written theme: How to find some place in the pupil's own experience.

*Minimum Essentials
Test*

1. Apostrophe: possession, contraction
2. Comma with addresses and dates
3. Recognition of nouns and verbs

In the University of Chicago High School and the University of Wisconsin High School, the content of courses is not organized for various ability groups in this rigid fashion, but rather, it is broken up into "unitary blocks." Minimum essentials to be mastered by all are designated. Supplementary work is done by those able to go beyond.⁴⁹

⁴⁹Some violence may have been done these two plans by this brief mention. For more explicit statements, see:

Miller, Harry Lloyd. *Directing Study*. New York: Charles Scribner's Sons, 1922.
 377 p.
 Morrison, Henry C., et al. "Studies in Secondary Education, I, University High

Both of these plans bear considerable resemblance to the curricular adaptations frequently accompanying adoption of the Dalton Plan.⁵⁰ Although the originators and advocates of the Dalton Plan insist that it "does not call for any changes in the curriculum or texts," that it "is a sociological, rather than a curricular experiment," that "the Dalton Plan should be considered as a *vehicle for the curriculum*,"⁵¹ there is usually an accompanying adjustment of the curriculum to allow for and encourage individual development and progress. This is well illustrated in the experiment at River Falls, Wisconsin, described by Mason.⁵⁰

In the preceding examples, subject content is varied in accordance with individual differences but without explicit consideration of the objectives involved. Another type of modification proceeds directly and obviously from an adjustment of objectives to reorganization of subject content and learning exercises.

The plan described by Dalman exemplifies this procedure.⁵² He worked out a set of objective standards of attainment in first-year algebra for addition, subtraction, factoring, simultaneous equations and quadratic equations. For each topic, four lists of exercises were assembled and labeled "C," "B," "A," and "A+," in accordance with the system of school marks employed. The exercises in any one list were judged to be approximately equal in difficulty, but as suggested by their labels, the successive lists for each topic increased progressively in difficulty.

These lists of exercises define standards of achievement for the topics of first-year algebra. The goal set for a student is not the doing of so many exercises but the attainment of the ability to do exercises of a certain kind and difficulty. When a student thinks he has acquired sufficient habits and knowledge to do the "C" list of exercises on a certain topic, he is given an opportunity to do so. If he

School, University of Chicago," *Supplementary Educational Monographs*, No. 24. Chicago: University of Chicago, 1923. 150 p.

Reavis, William C., et al. "Studies in Secondary Education, II, University High School, University of Chicago." *Supplementary Educational Monographs*, No. 26. Chicago: University of Chicago, 1925. 202 p.

Reavis, W. C. "The Administration of the Superior Students in the University of Chicago High School." *Twenty-Third Yearbook of the National Society for the Study of Education*, Part I. Bloomington, Illinois: Public School Publishing Company, 1924, p. 355-65. Somewhat more detailed descriptions for mathematics and the social studies are given by Breslich and Hill in this yearbook, p. 372-78 and 379-88, respectively.

⁵⁰A description by Mason of a particular scheme that grew out of an attempt to put the Wisconsin plan into practice portrays the close relationship between the Wisconsin and Dalton plans. See:

Mason, H. C. "A Modification of the Dalton Plan," *School Review*, 33: 781-86, December, 1925.

⁵¹Parkhurst, Helen. "The Dalton Laboratory Plan." *Twenty-Fourth Yearbook of the National Society for the Study of Education*, Part II. Bloomington, Illinois: Public School Publishing Company, 1925, p. 83-84.

⁵²Dalman, Murray A. "Hurdles, a Series of Calibrated Objective Tests in First Year Algebra," *Journal of Educational Research*, 1: 46-62, January, 1920.

fails to do these exercises correctly, he is directed to do learning exercises in order that he may acquire sufficient ability to pass the first hurdle. After he has demonstrated that he possesses the ability to do the "C" list of exercises, he is assigned other learning exercises that will engender the additional ability required for the "B" list, and so on.

Concluding statement. Individual differences were given almost no consideration by the Committee of Ten. They did recognize that "it has been a very general custom . . . to make up separate courses of study for pupils of supposed different destinations"; and at various places in their report, they took notice of the individual pupil. However, their emphasis was on uniformity rather than on provisions for individual differences. The Committee on College Entrance Requirements gave particular attention to electives and rate of progress, and thus were more explicit in their suggestions relative to providing for individual differences. Nevertheless, they too placed emphasis upon uniformity, particularly within any given subject. The Commission on Reorganization of Secondary Education gave much more attention to individual differences than did either of the two preceding committees. Provisions for such differences were considered necessary to a realization of the specializing function of secondary education, which is fully as important, especially in a democracy, as the unifying function.

There is an abundance of evidence that a serious attempt is being made to adapt secondary education to individual differences. Adaptation of materials of instruction is being accomplished through electives, organization of various types of curricula, and variation in the content of subjects. Electives provide in the main for variations in interests, and to a less extent for variations in capacity. Curricula also care for variations in interests, particularly vocational interests, and to a considerable extent for differences in native ability. Provisions for individual differences through modification of the content of a particular subject, especially as worked out in schemes like the Dalton Plan, tend to be more flexible than provisions by means of electives or differentiated curricula. No doubt, adequate provision for the whole gamut of differences in interests, tastes, capacities, probable vocational futures, and so forth, can be had only through a combination of these, and possibly other, means.

CHAPTER VII

CONCLUSIONS

During the period of thirty-five years since the Report of the Committee of Ten in 1893, changes in educational thinking relative to secondary education have occurred which are nearly as phenomenal in the realm of educational thought as the accompanying changes in enrollment are in a more material sphere. During this period, the curriculum has been given a major share of consideration, until today it is the focus of educational thought. It is true that there has been much conservatism resisting change; that traditional school practices have tended to persist; that the total situation is extremely complex, involving many factors such as psychological and social theory; and that it appears extremely chaotic and without reason from some points of view. In fact, one might question whether there has been progress in any real sense. However, careful study shows that certain significant trends in thinking about the curriculum are relatively dominant, persistent, and progressive—progressive in the sense that the secondary school is being brought nearer to a realization of the purposes of democracy.¹

The trends in educational thinking relative to the secondary-school curriculum may be summarized under two captions: objectives, and materials of instruction.

Trends in objectives. Although there was no mention of objectives as such by the Committee of Ten, they are today accorded recognition by all curriculum thinkers. This growing recognition has been attended by the development of many techniques for the determination of objectives. During this interim of thirty-five years, the conflict between the finishing and the fitting functions has been apparently settled by recognition of the former as dominant. When the objectives of the secondary school are considered more specifically, four major trends are apparent: (1) The group of children for whom the school is planned has been extended from a relatively small and select group to one that in theory includes all children of secondary-school age. (2) The scope of objectives has been increased from partial preparation for citizenship, leisure-time activities, and professional occupations, to much more extended preparation for all phases of out-of-school life. (3) There is a definite tendency to determine control objectives in terms of specific habits, knowledge, and general patterns of

¹A formulation of the purpose of democracy was quoted from the "Cardinal Principles of Secondary Education" on p. 105 of this bulletin.

conduct. (4) Attention is being given to preferred variations in achievements largely because individual differences and the specializing function have come to be considered complementary.

Trends in materials of instruction. Recognition and determination of more specific objectives have been accompanied by the tendency to make them the criteria for the selection of materials of instruction, a tendency commonly described by saying that the curriculum is becoming more practical. Another factor that has profoundly influenced materials of instruction is the regrouping of school grades at the junior-high-school level. Considered more specifically, five major trends appear in materials of instruction: (1) Measured in terms of the number of subjects, the curriculum has been greatly expanded, especially in the field of the practical and fine arts; the actual expansion is even greater when the time devoted to the several subjects is considered. (2) In the older subject-matter fields of mathematics, English, science, and the social studies, particularly on the junior-high-school level, traditional subject boundary lines are being obliterated, and unified courses of a relatively general nature are being organized. (3) Materials of instruction, particularly on the senior-high-school level, are being differentiated on a vocational basis, forming such subjects as commercial arithmetic, business English, and household chemistry; this differentiation is usually accompanied by organization of differentiated curricula. (4) As a phase of educational guidance, broadening and finding or try-out courses are being introduced, especially in the junior high school, and (5) Materials of instruction are being modified and reorganized so as to provide for and even encourage individual differences.

Trends that will persist. It is far easier to identify the trends of the past than to analyze the present or to predict the future. However, this study of the recent developments in educational thinking relative to the secondary-school curriculum would seem incomplete without some reference to the future. On the basis of the facts already presented and the trends identified, certain statements relative to the future appear to be justified. Some of the trends mentioned in the preceding pages, such as the growth in dominance of the finishing over the fitting function, have become firmly established and need not be considered as trends of the present and future. Others, such as the development of broadening and finding courses, have little more than become established as trends. It appears that the following are the more important trends that will be prominent in the immediate future: (1) Attention will continue to be focused upon the determi-

nation of specific control objectives and their differentiation with respect to individual differences. (2) Recognized objectives will grow in importance as criteria in the selection and organization of materials of instruction. (3) The regrouping of materials of instruction in the older subject-matter fields, such as mathematics and the social studies, will be continued, and no doubt will eventually extend to the newer subject-matter fields, such as the fine and practical arts, after these fields have gone through the present stage of differentiation. (4) Broadening and finding courses will be developed as a phase of educational-vocational guidance.

No doubt some of these trends will be brought to a consummation during the next thirty-five years and new trends will come into prominence. We may confidently expect educational thought to make even greater strides than it has during the period since the Report of the Committee of Ten. The task of those who carry theory into practice is to comprehend the meaning of our best educational thinking and to try to see the direction of its trends.

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BULLETIN NO. 41

BUREAU OF EDUCATIONAL RESEARCH
COLLEGE OF EDUCATION

RECONSTRUCTION OF THE SECONDARY-SCHOOL CURRICULUM: ITS MEANING AND TRENDS

By

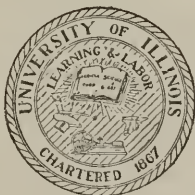
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