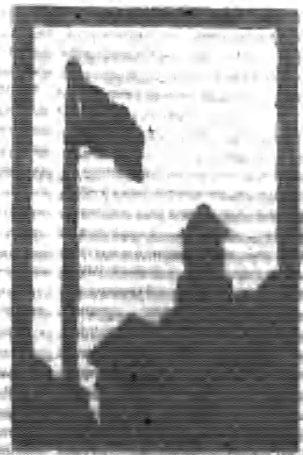


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THE PROGRAM OF STUDIES



BULLETIN, 1932, No. 17

9

MONOGRAPH No. 19

EDUCATION OF THE UNIVERSITY OF WISCONSIN

**UNITED STATES DEPARTMENT OF THE INTERIOR
OFFICE OF EDUCATION**

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UNITED STATES DEPARTMENT OF THE INTERIOR
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COMMISSIONER

THE PROGRAM OF
STUDIES
IN TWO PARTS

BY

A. K. LOOMIS
EDWIN S. LIDE
B. LAMAR JOHNSON

BULLETIN, 1932, NO. 17

NATIONAL SURVEY OF SECONDARY EDUCATION

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NOTE

A. K. Loomis and Edwin S. Lide, authors of Part I of this monograph, are specialists in curriculum of the NATIONAL SURVEY OF SECONDARY EDUCATION. B. Lamar Johnson, author of Part II, is specialist in secondary-school administration on the Survey staff. During the time of the Survey Doctor Loomis in addition held positions as Director of Research for the Denver Public Schools and later as principal of University High School, the University of Chicago. William John Cooper, United States Commissioner of Education, is director of the Survey; Leonard V. Koos, professor of secondary education at the University of Chicago, is associate director; and Carl A. Jessen, specialist in secondary education of the Office of Education, is coordinator.

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LETTER OF TRANSMITTAL

DEPARTMENT OF THE INTERIOR,
OFFICE OF EDUCATION,
Washington, D. C., June, 1933.

SIR: Within a period of 30 years the high-school enrollment has increased from a little over 10 per cent of the population of high-school age to more than 50 per cent of that population. This enrollment is so unusual for a secondary school that it has attracted the attention of Europe, where only 8 to 10 per cent attend secondary schools. Many European educators have said that we are educating too many people. I believe, however, that the people of the United States are now getting a new conception of education. They are coming to look upon education as a preparation for citizenship and for daily life rather than for the money return which comes from it. They are looking upon the high school as a place for their boys and girls to profit at a period when they are not yet acceptable to industry.

In order that we may know where we stand in secondary education, the membership of the North Central Association of Colleges and Secondary Schools four years ago took the lead in urging a study. It seemed to them that it was wise for such a study to be made by the Government of the United States rather than by a private foundation; for if such an agency studied secondary education, it might be accused either rightly or wrongly of a bias toward a special interest. When the members of a committee of this association appeared before the Bureau of the Budget in 1928, they received a very courteous hearing. It was impossible, so the Chief of the Budget Bureau thought, to obtain all the money which the commission felt desirable; with the money which was obtained, \$225,000, to be expended over a 3-year period, it was found impossible to do all the things that the committee had in mind. It was possible, however, to study those things which pertained strictly to secondary education, that is, its organization; its curriculum, including some of the more fundamental subjects, and particularly those subjects on which a comparison could be made between the present and earlier periods; its extracurriculum, which is almost entirely

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new in the past 30 years; the pupil population; and administrative and supervisory problems, personnel, and activities.

The handling of this Survey was intrusted to Dr. Leonard V. Koos, of the University of Chicago. With great skill he has, working on a full-time basis during his free quarters from the University of Chicago and part time during other quarters, brought it to a conclusion.

This manuscript in two parts is one of the larger ones of the secondary Survey. Part I was prepared by A. K. Loomis and Edwin S. Lide. It deals with the program of studies in junior and senior high schools; the purpose, principally, is to trace the trends. For instance, the programs of studies in 60 junior high schools were studied for a 10-year period. The 14 programs investigated by the Commonwealth Fund in 1923 were also investigated in 1930-31. Certain trends revealed in recent revisions of the curriculum and the comparison of programs before and after junior high school reorganization were studied. A comparison was made of the programs of studies in reorganized and unreorganized schools.

Similarly the programs of studies in 152 senior high schools were studied through a 6-year period, in 54 schools through a 16-year period, and in 35 schools over a 25-year period. The programs investigated by the Commonwealth Fund in 1924 were likewise brought up to date. The trends revealed through recent revisions and the trends in private school curriculums recently revised were also studied.

In Part II of this manuscript B. Lamar Johnson gives attention to registration and schedule making. The importance of a pupil making a good start through a clean-cut registration each fall is emphasized, and the schedules adopted for the use of pupils and teachers together with the best time of opening and closing the school day are given attention.

The manuscript is most suggestive, but limitation of space prevents any further treatment here.

I respectfully recommend that it be published as a monograph of the National Survey of Secondary Education.

Respectfully submitted,

WM. JOHN COOPER,
Commissioner.

The SECRETARY OF THE INTERIOR.

[x]

PART I

THE PROGRAM OF STUDIES

PART I : THE PROGRAM OF STUDIES IN JUNIOR AND SENIOR HIGH SCHOOLS

By A. K. LOOMIS AND EDWIN S. LIDE

CHAPTER I : THE NEED OF THE STUDIES REPORTED

1. THE ORGANIZATION OF PART I OF THE MONOGRAPH

Junior high school investigations.—It is the purpose of Part I of the present monograph to report characteristics of junior and of senior high school programs of studies of American secondary schools as they are revealed through 11 independent, but related, investigations. In the first division will be presented reports of five projects which relate to the programs of studies in grades 7, 8, and 9, or as termed here, the junior high school. They are as follows: (1) Trends in 60 programs of studies over a 10-year period; (2) trends in 14 programs investigated through the Commonwealth Fund in 1923; (3) trends in programs revealed through recent revisions; (4) a comparison of programs before and after reorganization on the junior high school plan; (5) a comparison of programs of studies in grades 7, 8, and 9 in reorganized and in unreorganized schools.

Senior high school investigations.—In the second division five projects which relate to characteristics of the senior or 4-year high school program of studies are reported. They are as follows: (1) Trends in 152 programs of studies over a 6-year period and of 54 programs over a 16-year period; (2) trends in 35 programs over a 25-year period; (3) trends in 15 programs investigated through the Commonwealth Fund in 1924; (4) trends in programs revealed through recent revisions; (5) trends in programs of studies of private schools revealed through recent revisions.

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How the program of studies works out.—In the third division of this monograph a project is reported which is concerned with the actual operation of the program of studies for grades 9 to 12 as measured by the work completed by graduates. For this and for the other studies here reported the methods used in securing and analyzing the data will be indicated in connection with each study.

1. RESEARCH IN THE FIELD

Investigations of junior high school programs.—The need for the types of investigations reported for the junior high school field may be gathered from a consideration of other investigations which have been made in this field since 1925. An examination of the "scope" and "problems treated" in the 11 studies summarized in Table 1 indicates that in a majority of cases the field was limited to a single State; in one case, only rural schools were considered; and in most of the others, only limited phases were investigated. In no case did the studies involve, as does the present report, a study of changes *within the same schools* over a period of years, or of a comparison of programs in the same grades administered under distinct types of organization.

Investigations in the senior or 4-year high school field.—A similar summarization, in Table 2, of 15 studies made in the senior or 4-year high school field indicates the appropriateness of the studies included under this title. Although two studies report trends in graduation requirements and one reports trends in two distinct groups of schools, none reports trends in the same groups of schools over a period of years, or within private schools.

TABLE 1.—A summary of certain investigations of the junior high school program of studies reported since 1925

Author	Title	Date	Publication	Scope	Problems treated
Aseltine, John	The articulation of junior and senior high schools in California.	1925	M.A. thesis, Stanford University, unpublished.	65 junior high schools in California, varying in size.	Work offered and required, time allotments.
Bergman, Frank V.	Junior high schools of Kansas.	1929	M.A. thesis, University of Colorado, unpublished.	48 junior high schools in Kansas, varying in size.	Work offered and required.
Buster, N. E.	Time allotments in the junior high school.	1929	M.A. thesis, State Teachers College, Greeley, Colo.	36 junior high schools from 22 States. Cities from 14,000 to 6,000,000 population represented.	Work offered and required; time allotments.
Counts, Geo. S.	Current practices in curriculum-making in public high schools.	1926	Twenty-sixth Yearbook, Part I, National Society for the Study of Education.	67 junior and 90 senior high schools, large and small scattered over the United States.	Subjects added and dropped from curriculum within the past 5 years.
Ferriss, Emery N.	The rural junior high school.	1928	United States Bureau of Education Bulletin 1928, No. 28.	135 junior high schools in cities of fewer than 2,500 distributed over 30 States.	Organization of curriculums, subjects required and elective.
Montgomery, T. T.	The junior high schools in Oklahoma.	1926	M.A. thesis, University of Oklahoma, unpublished.	55 junior high schools, varying in size, scattered over Oklahoma.	Several problems treated including subjects required and elective.
Simons, Donald D.	The 6-year high school in Indiana.	1928	M.A. thesis, University of Chicago, unpublished.	268 schools, mostly rural, in communities from 500 to 46,000 population in Indiana.	Among other problems, the subjects offered are considered.
Stingley, Clarence L.	Curriculum practices in 95 junior high schools of Ohio.	1928	M.A. thesis, Ohio State University, unpublished.	95 schools, scattered over Ohio.	Organization of curriculums, subjects required and elective.
Tryon, Smith, and Rood	The program of studies in 78 junior high school centers.	1927	School Review, 35: 96-107, February, 1927.	78 schools from leading centers in 27 States.	Subjects required and elective; time allotments.
Waterpool, William F.	Junior high school.	1926	M.A. thesis, University of Wisconsin, unpublished.	32 schools, varying in size, scattered over United States; 18 schools from 10 Wisconsin cities.	Comparison of subjects offered and required and time allotments in Wisconsin with other schools.
Wiley and Van Cott.	The junior high school in New York State.	1928	The University of the State of New York.	Progressive schools in 23 villages and 21 cities in New York State.	Subjects required and elective; time allotments.

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TABLE 2.—A summary of certain investigations of the senior and 4-year high-school program of studies reported since 1925

Author	Title	Date	Publication	Scope	Problems treated
Balyeat, F. A.	Trends in college entrance offerings.	1929	School Review, 37: 451-56, June, 1929.	Freshmen entering Oklahoma University.	High-school work offered, 1907, 1917, 1927.
Beas, Wm. A.	A survey of the county high schools of Tennessee.	1928	M.A. thesis, University of Chicago, unpublished.	304 county high schools in Tennessee; all sizes.	Total offering of subjects.
Burns, Andrew L.	Senior high school curricula in Southern States.	1928	M.A. thesis, George Peabody College for Teachers, unpublished.	63 schools of the Southern States, varying in size and location.	Work offered and required.
Collins, Earl A.	Survey of township and community high schools in Illinois.	1928	Sixth Yearbook, Department of Superintendence, unpublished.	299 township and community high schools in Illinois.	Do.
Good, Carter V.	The variables of the senior high school curriculum and the college entrance problem.	1927	School Review, 35: 686-91, November, 1927.	29 schools, mostly in cities of more than 75,000 population, scattered over the United States.	Do.
Good and Raymond.	Titles of curriculums offered or suggested in secondary schools.	1927	School Review, 35: 503-509, September, 1927.	55 city school programs scattered over the United States.	Number and kind of curriculums offered.
Koos, Leonard V.	Treated in textbook "The American Secondary School."	1927	Ginn & Co., Boston.	169 schools, in cities 2,500 to 100,000, scattered over the United States.	Do.
Loomis, A. K.	Some results of the elective system in the high schools of Denver.	1929	School Review, 37: 510-18, September, 1929.	Graduates in classes of 1928 and 1927 at Denver.	Work taken by graduates.
Newlin, Mary.	A study of the curricula of the township high school of Illinois.	1928	M.A. thesis, University of Chicago, unpublished.	55 schools in Illinois, varying in size.	Work offered and required.
Roberts, Edward D., chairman.	Curriculums found in American secondary schools.	1928	Sixth Yearbook, Department of Superintendence.	170 cities scattered over United States with population over 30,000.	Curriculums offered, subjects offered and required.
Beam, Theodore, chairman.	Titles of curriculums offered in 200 small high schools.	1928	do.	200 schools enrolling 100 or less, in 44 States.	Number and kind of curriculums offered.
Scott, Shirley Zane.	Curriculum tendencies as shown by graduation credits of accepted high schools of Nebraska.	1926	M.A. thesis, University of Nebraska, unpublished.	650 schools in Nebraska, varying in size.	Credits offered at 10-year periods, 1903 to 1923.



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Author	Year	Source	Number and kinds of courses offered.
Upton, S. B.	1930	Term Report, University of Michigan, unpublished.	70 schools in Michigan, varying in size.
Unreported.	1927	School Review, 35: 250-51, April, 1927.	10 schools suburban to Chicago.
Do.	Not reported.	Unpublished.	239 schools in California, varying in size. Units of work in various fields added and withdrawn over a period of years. Work offered in various fields.

DIVISION I : THE JUNIOR HIGH SCHOOL PROGRAM OF
STUDIES

CHAPTER II : TRENDS IN 60 PROGRAMS
PLAN OF THE STUDY

1. PURPOSE OF THIS INVESTIGATION

Extent to which functions of the junior high school are being realized.—By 1915 the junior high school movement may be considered as out of the embryonic stage for the United States as a whole. The Fifteenth Yearbook of the National Society for the Study of Education reports for the year 1915–16 the establishment of junior high schools to some extent in 40 of the 48 States. The basic principles which led to the establishment of this new type of organization, essentially as such principles are agreed upon to-day, had been emphasized at that time. Judging from the analyses of junior high school programs of studies which have appeared up to the present time, however, the curriculum reforms which have been achieved still leave much to be desired if the theories advocated for the establishment of this new type of administrative unit are to be put into actual practice.

It is attempted in the present study, through comparison of junior high school programs of studies for the period 1915–1920, with those in operation in *identical* schools during the years 1929–1931, to ascertain those changes which have taken place within this approximate 10-year period, and to determine in some measure the extent to which programs of studies of the junior high school of to-day give recognition to the meaning of the junior high school movement.

Changes represented are actual.—Because the comparisons made represent differences in programs of studies within the *same* schools at different periods of time the changes revealed may be considered as the results of normal processes rather than as the result of other influences which might enter into a comparison of programs in *different* schools. For this

PROGRAM OF STUDIES

reason, the extra effort necessary to insure direct comparisons is felt to be justified.

How criteria are determined.—Leaders who have been instrumental in bringing about the junior high school movement have given expression to the purposes or functions which they believe this organization should realize. Summaries of their views as presented later in this chapter will therefore afford a basis of judging the direction in which the changes represented are tending.

1. METHOD OF COLLECTING DATA

Requests to superintendents.—In May, 1930, a letter was sent to more than 500 superintendents of public schools in cities reported in the literature of the period as having had a junior high school organization previously to 1920. Each of these superintendents was requested to send a printed or mimeographed copy of the junior high school program of studies in use in that city during the earlier period, together with a copy of the present program. Replies were received representing approximately 185 cities. Of this number more than 100 schools furnished information concerning programs of studies in operation at the periods requested. From the early programs received through this source, and from others gathered by individuals making such collections at other times, the 60 programs of studies were selected which were most complete in the information desired.

As far as possible the data appearing on the printed programs were relied upon exclusively, but in some instances superintendents were asked to furnish, where they could do so with assurance, information which was lacking or indefinite on these materials. For example, in the case of 11 schools, information was supplied by letter concerning the length in minutes of classroom periods under the early junior high school organization. Information concerning programs of studies in use during the late period could, of course, readily be furnished by the superintendent of schools, even though not in printed or mimeographed form. In most instances, however, it had been reduced to such form. In addition to programs of studies, schedules of recitations, courses of study, and handbooks or manuals of administration were available for several cities.

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Location and size of cities.—The 60 cities included in this investigation represent 21 States. Eight cities are located in the New England States, 11 in Eastern States, 29 in Middle Western States, 8 in the far West, and 4 in the South and Southwest. Grouped according to population, for which the figures of the 1920 census are used, 14 cities are of less than 10,000 population, 16 are in a population range of 10,000 to 30,000, 25 are between 30,000 and 500,000, and 5 had a population of more than 500,000.

On the basis of these tabulations, it is evident that the cities included in the investigation are fairly well distributed, considered from both standpoints of geographical location and size. In all cases the same cities are represented in the two periods, and in all but two cases the same individual schools within the cities are represented.

3. THE PECULIAR FUNCTIONS OF THE JUNIOR HIGH SCHOOL

Summary by Koos.—It is the purpose, in this section of the chapter, to arrive at a list of special functions or purposes of the junior high school which may be used as a basis for judging the degree to which changes in programs of studies may tend to realize those principles which a large number of educational leaders agree should motivate the work of this

TABLE 3.—Frequency of appearance of peculiar functions proposed in educational literature for the junior high school

Peculiar functions of the junior high school	Number	Per cent
I. Realizing a democratic school system through—		
A. Retention of pupils.....	40	80
B. Economy of time.....	36	72
C. Recognition of individual differences.....	35	70
D. Explanation and guidance.....	27	54
E. Beginnings of vocational education.....	26	52
II. Recognizing the nature of the child at adolescence.....	22	44
III. Providing the conditions for better teaching.....	31	62
IV. Securing better scholarship.....	13	26
V. Improving the disciplinary situation and socializing opportunities.....	28	56
VI. Effecting financial economy.....	8	16
VII. Relieving the building situation.....	7	14
VIII. Continuing the influence of the home.....	2	4
IX. Hastening reform in grades above and below.....	3	6
X. Normalizing the size of classes.....	3	6
XI. Relieving teachers.....	3	6

organization. At least two significant summaries of the pronouncements of educational leaders regarding the functions of the junior high school have been made. Koos

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reports frequencies with which certain purposes or functions were expressed previously to 1920, 30 of these statements appearing in public-school documents and 20 in articles or chapters in books by educational leaders. This summary is reproduced in Table 3, except that the distinction is statements from school documents and those from other literature is not maintained.¹

Summary by Department of Superintendence Committee.—Representative of a later period of thought is a canvas of statements appearing between 1920 and 1927 as made by a committee for the Department of Superintendence Yearbook on the Junior High School Curriculum.² In this case, statements of 79 public-school administrators and college specialists are represented. A reproduction of the summary made by this committee is shown in Table 4. The distinction made in the yearbook, however, in the statements made by public-school administrators and in those by college specialists is not indicated.

TABLE 4.—*Analysis of statements of the special purposes of the junior high school published since 1920 by 59 public-school administrators and 20 college specialists*

Purpose	Number	Per cent
1. Meeting individual differences of pupils—enabling pupils to follow the lines of their interest and ability.....	73	92.4
2. Prevocational training and exploration resulting in wise choice of later school courses and life work.....	66	83.5
3. Counseling or guidance—bringing pupils into contact with influences that should give direction and purpose to their lives.....	42	53.2
4. Meeting the needs of the early adolescent group.....	36	45.5
5. Bridging the gap between elementary and secondary schools—proper coordination between lower and higher schools.....	34	43.0
6. Development of qualities of good citizenship—preparation of pupils to play a larger part in the life of the community.....	31	39.2
7. Providing opportunity for profitable self-activity—early development of leadership, individuality, and initiative.....	26	32.9
8. Retention of pupils beyond compulsory school age.....	21	26.5
9. Continuation of common education or regular scholastic or academic training.....	11	13.9
10. Rounding out a complete unit of training beyond the elementary grades for those who must leave school early.....	10	12.7
11. Introduction of new subjects into the curriculum.....	5	6.3
12. Effecting economy of time in education.....	3	3.8
13. Stimulation of educational advancement.....	2	2.5
14. Beginning of definite occupational training.....	1	1.3
15. Giving opportunity for earlier preparation for college.....	1	1.3

¹ Kocs, Leonard V. *The Junior High School*. Enlarged Edition. Boston, Ginn & Co., 1927, p. 17.

² *Fifth Yearbook*, Department of Superintendence, pp. 20-21. The National Education Association, 1927.

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Recognition of individual differences.—Judging from recognizing the percentages represented in the literature of both periods, and meeting individual differences of pupils seems to be the special function uppermost in the minds of practically all educational leaders whose statements were considered. Opportunity for judging from the present report the extent to which this purpose has been kept in mind in arranging programs of studies may be had from data showing types of organization under which the programs are administered, the proportion of pupils' programs which are elective, and the extent and nature of the subject fields and specific courses within subject fields which are represented in the total offering.

Prevocational training, exploration, and guidance.—The futility of attempting complete harmony in the classifications of the two summaries is well illustrated in the overlapping of terminology expressing such functions as prevocational training, exploration, and guidance. The national committee considers prevocational training and exploration as one and the same function. Koos, under the heading "Exploration and guidance," includes provisions for educational and vocational guidance and . . . prevocational education in the sense of a curriculum organization which allows the pupil to sample a number of activities with a view to a more intelligent choice of occupation.³ Education of a *general* vocational nature, however, he classifies under "Beginnings of a vocational education," which, under the classification of the national committee, includes only *definite or specific* occupational training.

It is evident from the frequencies shown that a large proportion of educational leaders are agreed that prevocational or general vocational education, exploration, and guidance should constitute a special function of the junior high school. Although it will be of interest to note the number of programs of studies providing for specific vocational education, few educational leaders seem to consider it as a peculiar function of the junior high school. Data presented in this report which may be expected to throw some light on the extent

³ Koos, Leonard V. *The Junior High School*. Enlarged Edition, Boston, Ginn & Co. 1927, pp. 51-52.

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to which programs of studies contribute to the realization of prevocational education, exploration, and guidance are of the nature of those indicated under recognition of individual differences. The prevalence of "try-out" and general or introductory courses attempting to give a preview of the whole subject field, and of provisions in the regular school day for certain extracurriculum, or, as designated in this report, "socializing-integrative" activities, are also of special significance.

Training for social responsibility.—The types of social development suggested by the function designated by Koos as "Improving the disciplinary situation and socializing opportunities" and by the two functions designated by the national committee as "Providing opportunity for desirable self-activity" and "Development of qualities of good citizenship" have seemed to justify their inclusion, for the purposes of this study, under the one designation, "Training for social responsibility." These purposes were posited by a majority of educational leaders in each of the investigations. The degree to which trends in programs of studies reflect this function will be judged from changes shown in the field of social studies and in the prevalence of such activities as clubs, guidance, assembly, and home room.

Retention of pupils.—Retention of pupils was recorded as a peculiar function of the junior high school in 80 per cent of the statements summarized by Koos and in 25.6 per cent of those summarized by the national committee. Since Koos includes bridging the gap between elementary and high school under retention of pupils, we may, for the purposes of this study, combine these two functions which were distinguished by the national committee. This gives the function, retention of pupils, a rank second in importance to recognition of individual differences. Many features of the junior high school organization may contribute to the retention of pupils; for example, each of those designated under the special purposes already considered. It may also aid in interpreting shifts in subject-matter fields which render smoother the transition between elementary and secondary school.

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Recognizing the nature of the child at adolescence.—This statement of purpose was attributed to approximately 45 per cent of educational leaders in each summary, and is therefore in fifth place in frequency of purposes. Studies of characteristics of the adolescent child indicate the importance of adapting physical and social activities to his life at this period. Greater prominence of such opportunities in programs of studies will therefore be indicative of greater efforts to realize this purpose.

Economy of time.—Differences in respective percentages in the two tabulations are greatest with regard to economy of time. Koos indicates that the most common statements classified under this heading relate to enrichment. The difference between 72 and 3.8 per cent in the two tabulations is due much more to the plan of classification followed than to a decrease of emphasis on enrichment at the later period. The frequency with which traditional high-school subjects or new materials have been introduced into junior high school or with which two or more specific courses have been integrated with one course will indicate whether this purpose has been kept in mind.

Other functions.—For each of the six purposes considered up to this point the frequencies with which they have been found present in the summaries warrant their acceptance as basic principles on which to interpret the trend in junior high school programs of studies over the approximate 10-year period represented. Only two of the remaining purposes were stated by as many as 20 per cent of all leaders and in each of these instances changes in the program of studies would throw little light on the efforts being made to bring about their realization.

Desirable characteristics of organization.—It will also be of interest in this connection to note the extent to which the junior high school program of studies reflects certain characteristics of organization considered desirable by more than 50 per cent of 60 administrators approached by Glass in 1922.⁴ At least half were in agreement on the following particulars:

⁴ Glass, James M., Report of a committee on junior high schools. Proceedings of North Central Association of Colleges and Secondary Schools, Pt. I, 1922, pp. 56-59.

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1. A background of experience with high-school subjects in their simpler aspects (general mathematics, general science, pre-vocation courses, etc.) was considered desirable for junior high school pupils before the initial choice of electives was permitted.

2. Sixty minutes was favored as the length of the junior high school period.

3. Choice of such curriculums as the academic, general, commercial, technical, vocational, etc., should be permitted in the ninth grade in preference to offering only one curriculum of required subjects with variables for all pupils.

4. The junior high school program of studies should, in a gradually diminishing degree, continue the single curriculum of the elementary school so that seventh grade pupils may adjust themselves to the initial stages of secondary education.

5. It should in a gradually increasing degree be modified into an enriched and varied curriculum, required of all pupils, so that each child may explore its own aptitudes and may receive a background of experience in making provisional choice of electives.

6. It should offer differentiated courses, with constants, so that each child may be stimulated, by means of electives of his own choosing, to continue upon the educational or vocational career for which by aptitude he is best fitted.

7. The home room should be a continuous type of organization through the junior high school.

8. School activities, granted that they can become a constructive educational program in training for citizenship and social cooperation, should be included in the program of studies.

9. A definite time allotment within a school day is recommended for such activities.

4. ORDER OF PRESENTING DATA

The data presented in subsequent chapters will therefore be considered with respect to the degree to which they conform to the characteristics of organization enumerated and with respect to the following six functions: Recognition of individual differences; pre-vocational training, exploration, and guidance; training for social responsibility; retention of pupils; recognition of the nature of the child at adolescence; and effecting economy of time in education.

Three additional chapters are devoted to trends over a 10-year period. In Chapter III are presented those data which indicate the administrative organization through which pupils are guided into courses best suited to their needs; in Chapter IV, the major fields of work offered and required; and in Chapter V, the specific courses offered and required.

CHAPTER III: TRENDS IN 60 PROGRAMS—THE GENERAL PLAN OF ORGANIZATION

1. OUTLINE OF THE CHAPTER

The extent to which the junior high school organization has broken with the traditional organization and has incorporated plans through which flexible administration of programs of studies is made possible may be revealed through (1) the administrative grouping of school grades; (2) the administrative arrangement of programs according to types; (3) the number and types of curriculums provided (where the offering is organized into separate curriculums). The treatment of data included within this chapter will follow the plan of organization outlined.

2. THE ADMINISTRATIVE GROUPING OF SCHOOL GRADES

In 1915-1920, 8 of the 60 schools represented in the materials to be reported in Chapters III to VI, inclusive, were organized on the 6-6 plan and 29 were organized on the 6-3-3 plan. By 1929-1931, there were still 8 schools on the 6-6 plan, but the number organized on the 6-3-3 plan had increased to 42. This gain is largely at the expense of the 6-2-4 type of organization which decreased from 16 in 1915-1920 to 7 in 1929-1931. Although even in the early period, therefore, the 6-6 and the 6-3-3 types largely predominated, in 1929-1931 they constituted five-sixths of all types. The showing made by the 6-2-4 type of organization seems to indicate that organization on this plan is sometimes merely preparatory to organization on the 6-3-3 plan.

Although, on the whole the 6-3-3 type is most favored, variations in the plans employed in 1929-1931 point to the fact that administrators are not yet ready to agree on any one type of organization as satisfactory for all conditions. At this later period 50 schools were organized on the 6-6 or 6-3-3 plan, 7 on the 6-2-4 plan, 1 on the 6-3-3-2 plan, 1 on the 6-2-3 and 1 on the 5-3-3 plan.

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For the most part, the classification of types is made from reports by schools. In all other instances, sufficient information was at hand to make classification possible. For example, a school was classified on the 6-3-3 plan where grades 7, 8, and 9 were administered as a unit under a separate administrative head.

3. THE ADMINISTRATIVE ARRANGEMENT OF PROGRAMS ACCORDING TO TYPES

Classification employed.—The currency of different types of programs of studies, considered from the standpoint of the administrative characteristics, were in 1915-1920, as follows: Single-curriculum type, 7; pure multiple-curriculum type, 3; constants-with-variables type, 28; combination type, 22. By 1929-1931, however, there were only four of the single-curriculum type and one of the pure multiple-curriculum type, but the constants-with-variables type had increased to 34, while the combination type was employed by 21 schools. The four types follow the classification made by Koos¹ which is as follows:

1. *The single-curriculum type*, in which all pupils take identical subjects.
2. *The pure multiple-curriculum type*, providing for two or more curriculums to be pursued by as many groups of pupils, and which, once being elected, are fully prescribed.
3. *The constants-with-variables type*, in which, without formal classification into curriculums, are listed certain required subjects to be pursued by each pupil enrolled in a grade, and certain additional elective subjects which he may choose under guidance.
4. *The combination type*, which is a combination of two or more of the preceding types. For example, a program would be considered of this type when it had the single-curriculum type in grade 7, the constants-with-variables type in grade 8, and the pure multiple-curriculum type in grade 9. Various other combinations are current, which are noted later.

The advantages and disadvantages of the specific types.—Consideration of the specific functions and principles of organization reviewed in Chapter II will give some indication of the advantages and disadvantages of the various types. If it is accepted as a special function of the junior high school program of studies to provide for individual differences

¹ Koos, Leonard V. *The Junior High School*. Boston, Ginn & Co., 1927. Pp. 146 ff.

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through enriched and flexible curriculums, and if the principle is accepted as subscribed to by the respondents to Glass' inquiry that after a period of adjustment in the seventh grade, the program of studies should, in a gradually increasing degree, offer opportunities for exploration and individual election, then the single and pure multiple curriculum types seem ill adapted to furthering genuine reorganization. The abandonment of the former type by three schools, and of the latter type by two schools over the 10-year period, seems therefore, to be indicative of efforts towards more genuine reorganization.

It should be pointed out in this connection that 14 of the 15 schools which are shown for the two periods to have employed one or the other of these types of programs were organized on the 6-2-4 plan. In each instance the special function of the junior high school to bridge the gap between elementary and secondary schools seems not to have been considered. In five schools, all pupils were required to take exactly the same work in grades 7 and 8, but with the beginning of the ninth grade they were offered the choice of two or more curriculums, each of which was also entirely prescribed. In other words, pupils in these five schools, two of which represent the 1929-1931 period, are not offered the opportunity afforded through electives to explore their interests during grades 7 and 8, but with the beginning of grade 9 they must choose the curriculum which is also entirely prescribed, along which their major interest lies.

Pupils in the four schools in which the pure multiple-curriculum types prevail have the opportunity to make a choice between two or more curriculums, but since each is entirely prescribed, they must commit themselves early to their field of interest, without opportunity to explore fields not included in their major choice.

Types most favored.—Returns from the study by Glass, referred to in Chapter II indicate that 58 per cent of the respondents prefer the combination type of program as against 42 per cent showing preference for the constants-with-variables type. This rather close division of opinion between the two is also confirmed by data from this study, although the constants-with-variables type is shown to

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greater advantage in the latter instance. Because these two types appear in five-sixths of all schools for 1915-1920 and in eleven-twelfths of all schools for 1929-1931, the general impression obtains that trends in the administrative arrangement of programs are in accordance with accepted theory.

Such impression must be suspended, however, until the specific grades are examined, for the type of program employed in the ninth grade only was the determining factor in the classification of junior high schools under these two types. When grades 7^o and 8 are also considered, trends in the administrative organization of programs are not so conducive to curriculum reform as first appears. Considering first the constants-with-variables type, of the 28 schools in 1915-1920 and 34 schools in 1929-1931 in which it is shown to be employed, in the case of six schools for the former period the program was entirely prescribed in grades 7 and 8 while during the 10-year interval the number of such schools had increased to nine.

In like manner, a consideration of shifts in the composites of the combination type of program in individual schools reveals that schools classified under this type which employed the single type of curriculum for all of grades 7 and 8 increased from one in 1915-1920 to seven for 1929-1931. These data do not include schools in which the program was entirely prescribed in grade 7 only. With the program entirely prescribed as traditionally up to the ninth grade, the organization lacks the flexibility under which such purposes as meeting individual differences, exploration, and bridging the gap between elementary and secondary schools are best realized.

4. THE ORGANIZATION OF COURSES INTO CURRICULUMS

Number of curriculums offered in the average school.—In the case of 31 schools for 1915-1920 and of 27 schools for 1929-1931, the subjects or courses offered were organized into curriculums, presumed to care for the major life purposes of certain groups of pupils within the school. There was little change in the average number of curriculums offered for the late period over the average number offered 10 or

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more years earlier, the average being 4.4 for the former as compared with 4.1 for the latter. At each period the range was between two and eight curriculums.

TABLE 5.—The number of schools offering indicated kinds of curriculums in grades 7A, 7B, 8A, 8B, and 9, for 1915-1920 and 1929-1931

Curriculum	1915-1920						1929-1931					
	Grades					All grades	Grades					All grades
	7A	7B	8A	8B	9		7A	7B	8A	8B	9	
1	2	3	4	5	6	7	8	9	10	11	12	13
Academic.....	7	7	8	8	10	13	3	2	5	4	8	10
Commercial.....	12	12	16	15	26	28	2	1	6	5	22	22
Home economics.....	2	2	6	5	13	13	2	1	4	3	13	13
Industrial.....	8	8	9	9	10	13			1		10	10
Technical.....					2	2					1	1
General.....	6	6	7	7	11	11	1	1	4	3	18	18
Preparatory.....	1	1	1	1	1	1					1	1
English.....	2	2	3	3	3	3	1		1	1	1	1
Science.....	1	1	1	1	3	3					2	2
Normal.....					4	4					4	4
Prevocational.....	2	2	2	2	3	3	1	1	1	1	2	3
Latin.....	1	1	1	1	1	1					1	1
Modern languages.....											1	1
History.....											1	1
Manual arts.....	3	3	6	5	7	7	3	2	5	5	6	7
Classical.....	1	1	2	2	6	6					2	2
College preparatory.....			2	1	6	6			2	2	9	9
German.....	1	1	1	1	1	1						
Language.....			1	1	1	1			2	2	3	3
Practical arts.....	1	1	1	1	2	2			1	1	3	3
Engineering.....	1	1	1	1	2	2					3	3
Agriculture.....			1		3	3					2	2
Scientific.....					4	4					2	2
Trade.....											1	1
Total.....	49	49	60	65	119	127	13	8	32	27	116	120

The names employed to designate the different kinds of curriculums.—These names, presented in Table 5, are of interest in this connection. The most prominent designations, judging from the frequency with which they are listed in the table, are the "commercial," "general," "academic," "home economics," "industrial," "college preparatory," and "manual arts" curriculums. The appearance of 19 additional kinds of curriculums in the table, none of which is offered in more than four schools, is one instance of the lack of accepted nomenclature in the field of education. Other names in addition, but similar to those included in the table,

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were employed but not tabulated. For example, where curriculums were listed as "mechanic arts" they were classified under "manual arts," and "home-making" curriculums were considered the same as "home economics." Many curriculums seem to be named to indicate the subject most emphasized rather than the future purpose of a definite group of pupils. If named on the latter basis, it is likely that five or six types of curriculums could be designated under which all 26 of those appearing in the table could be grouped. Careful differentiation of subject matter in courses included in the separate types of curriculums will most likely enable many schools offering four or five curriculums to care for the ultimate needs of the major groups represented in the pupil body. The general impression gathered, however, by one tabulating the data is that many of the curriculums are differentiated in name only.

Average number of curriculums offered.—Further evidence of lack of differentiation in the early junior high school grades is revealed when the frequencies of the average number of curriculums offered in the separate grades are noted. During the early period there were 49, 67, and 119 curriculums offered, respectively, in grades 7, 8, and 9. The corresponding figures for the later period are 10½, 29½, and 146 curriculums. A half curriculum is indicated where offered for only one semester of the grade. The sharp decline in the number of curriculums offered, especially in grades 7 and 8 in the late period, is significant. This is in keeping, however, with the tendency, noted earlier, towards the greater employment of the single-type of program for grades 7 and 8 in the later period.

Changes in kinds of curriculums may best be shown by grouping all curriculums into general types and computing the percentage for each type represented at the two periods. On this basis, curriculums grouped as college preparatory constituted 37 per cent of all curriculums at the early period, decreasing to 34 per cent for the late period; commercial curriculums decreased from 22 to 18 per cent from early to late period; practical arts curriculums show little change, constituting 32 and 33 per cent of the total at the respective

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periods. A significant increment, however, and one indicative of a tendency to care more adequately for the pupil not going to college is shown for the general curriculum with percentages of 9 and 15, respectively, for early and late periods. It is also significant that no curriculum was specifically designated at either period for pupils interested in the fine arts.

CHAPTER IV : TRENDS IN 60 PROGRAMS—THE MAJOR FIELDS OFFERED AND REQUIRED

1. PURPOSE OF THE CHAPTER

Attention is directed in the present chapter to a comparison for the two periods, of major aspects of junior high school programs in the 60 schools represented. First is considered the extent of the total offering which is revealed through (1) the total periods scheduled in each grade; (2) the number of major subject groups, such as English, social studies, and the like, represented in the grade offering of the different schools;¹ (3) the percentage of total periods by which each major subject group is represented in the total offering; (4) the average number of periods of work offered in each subject group. Second, treatment is given to the extent of the required work which is represented through (1) the percentage of the pupil load which consists of required subjects (2) the requirement in the different subject groups; (3) the percentage of all periods of required work by which each subject group is represented; (4) the average number of minutes required in each subject field. These data will be presented in the order just indicated.

1. THE TOTAL OFFERING

Total periods scheduled.—The two periods, 1915–1920 and 1929–1931, are contrasted as to the gross extent of the total offering, through representation in Figure 1, separately for grades 7, 8, and 9, of the total number of periods scheduled by the median and range of the middle 50 per cent of schools, all subjects considered together. Attention may be directed to four important characteristics revealed through the data representing the median school: (1) The total periods of work scheduled in grades 7 and 8 do not appear sufficient to allow for much differentiation in the individual pupil's

¹ For the purposes of this study all subject-matter materials to which the junior high school pupil is exposed are considered as being comprehended within the following major groups: English, social studies, mathematics, science, physical education, fine arts, manual arts, domestic arts, foreign language, and commerce.

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program; (2) a large increment in the fullness of the offering of grade 9 as contrasted with grade 8 is revealed; (3) a great variation among schools is shown for each grade, in the total number of periods of work offered; (4) proportioned on a number-of-periods and length-of-periods basis there is little difference in the total amount of work scheduled for 1915-1920 and the amount scheduled for 1929-1931.

For 1929-1931, the number of periods of work offered in the median school was 36.1 for grade 7, 40 for grade 8, and 60.6 for grade 9. On the basis of a pupil load of 30 periods per week, there is a margin of choice of only 6.1 periods of

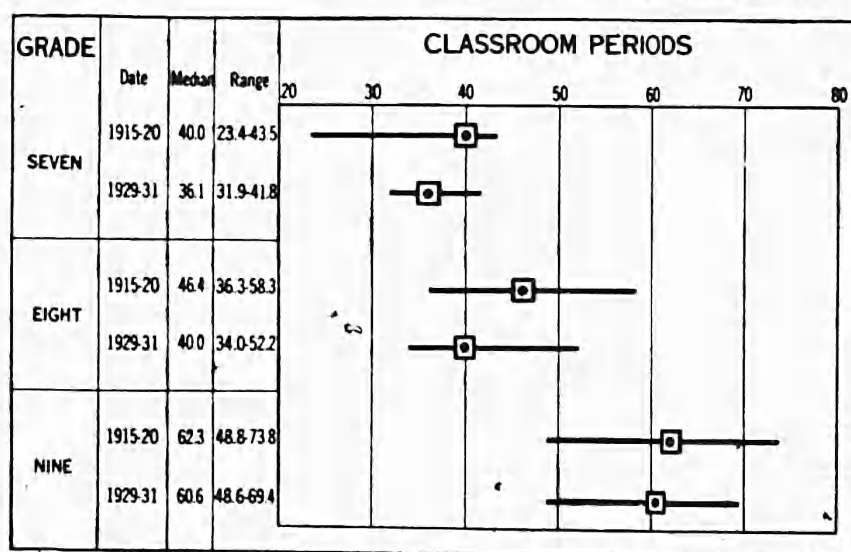


FIGURE 1.—The number of classroom periods scheduled by the median school and the range of the middle 50 per cent of schools, grades 7, 8, and 9, 1915-1920 and 1929-1931

work for pupils in grade 7 and of 10 periods for those in grade 8. The influence of the traditional 4-year high school is still seen in grade 9, however, in which the margin of choice has increased to 30.6 periods. It seems hardly likely that the special purposes of the junior high school to explore individual capacities and to provide for the different aptitudes and interests revealed through exploration can be adequately realized in the first two grades of the junior high school organization through the average number of periods shown to be scheduled for these grades. Nor does it seem that the gap is satisfactorily bridged and articulation of the work of the separate junior high school grades completely achieved

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where the sharp increment from grade 8 to 9 in the total periods offered continues to exist.

The complete range is not shown in Figure 1 but for the 1929-1931 period there is a variation in the number of classroom periods scheduled by different schools of from 20 to 80 in grade 7, 20 to 90 in grade 8, 30 to 100 in grade 9, and 90 to 250 for all grades. In other words, there is a difference of approximately 70 periods between the school with the most restricted and the school with the fullest offering for each grade. Some schools evidently are offering a wide choice of subject matter, but the reduced amount for the median school is brought about by the equally large number which schedule few if any periods of work in addition to those required of all.

Computed on a number-of-periods and length-of-period basis, the difference over the 10-year interval is not so great. Actual computation of the average length of the classroom period shows an increase of from 46.8 minutes in 1915-1920 to 52 minutes in 1929-1931. A decrease of 11 per cent in the number of periods allotted to each subject in 1929-1931 over the number allotted to that subject in 1915-1920 would therefore be possible without consequent loss in the time consumed. Even with this allowance, however, except for a slight trend in grade 9, the passing years have seen no tendency toward increasing the total amount of work scheduled in the different grades.

Combinations of subject groups in each grade.—The fullness of the total offering is revealed from another angle through consideration of the number of subject groups which are represented in the total offering of each grade. That is to say, even though, as the preceding tabulations seem to indicate, the pupil in grades 7 and 8 is allowed little choice outside of the work all are required to take, some opportunity for exploration and differentiation is afforded if the limited numbers of periods scheduled are distributed over all the different subject fields. While such evidence does not permit absolute conclusions as to the sufficiency of opportunities for differentiation, some light is thrown on the situation by the data in Table 6, showing the extent to which

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the major subject groups are represented in grades 7, 8, and 9, for 1915-1920 and 1929-1931.

TABLE 6.—The number of subject groups included by different schools in the offerings of grades 7, 8, and 9, 1915-1920 and 1929-1931

Number of schools offering	1915-1920			1929-1931		
	Grade 7	Grade 8	Grade 9	Grade 7	Grade 8	Grade 9
1	2	3	4	5	6	7
All 10 subject groups.....	7	14	20	2	14	39
9 subject groups.....	12	19	18	12	12	15
8 subject groups.....	22	17	13	28	25	6
7 subject groups.....	14	5	3	15	7	0
6 subject groups.....	1	4	1	2	2	0
5 subject groups.....	2	1	0	0	0	0
Total schools ¹	58	60	55	59	60	60
Average number of subject groups offered.....	8.1	8.5	9.0	7.9	8.5	9.6

¹ The total number of schools from which programs in these grades were received.

For 1929-1931 it will be noted that an average of 7.9 subjects is offered in grade 7, 8.5 subjects in grade 8, and 9.6 subjects in grade 9. It is only in the ninth grade, therefore, that there is an approximation of the representation of all subject divisions in the program of studies. Here again appears the oft-noted sharp increment from the eighth-grade to the ninth-grade offering. In the average school 2.1 subject groups are not represented at all in grade 7, and 1.5 subject groups are not represented in grade 8. The variation as between schools is not so wide: For grade 7, the concentration is around 7, 8, and 9 subjects; for grade 8—8, 9, and 10 subjects; and for grade 9—9 and 10 subject groups.

When 1915-1920 is compared with 1929-1931, it is only in the ninth grade that a trend toward a more representative offering is seen to obtain. The eighth-grade average over the 10-year period has not changed, and the seventh grade shows a small loss for 1929-1931 as compared with 1915-1920. These data tend to support those of Chapter III in which the increase shown in the number of schools employing the single-type curriculum for grade 7 and 8 gave rise to the question as to whether trends are in the direction of more complete provisions for individual differences and for prevocational

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training and exploration in schools providing such limited election in grades 7 and 8.

All grades considered, however, the 1929-1931 programs represent a greater variety of subject groups than do those of 1915-1920. For 1915-1920 physical education and commerce are the subjects which were most commonly neglected, the former not appearing at all in the programs of 19 schools and the latter not at all in the programs of 6 schools. Foreign language, science, and manual arts were also not offered in a few schools during the early period. For 1929-1931, however, the only subject fields not represented in at least one of the junior high school grades are physical education in the case of two schools and commerce in the case of one school. A decided tendency during late years to place more emphasis on physical education is indicated by these figures.

Percentage of total periods by which each subject is represented.—The percentage which each subject constitutes of the total periods of work offered in grades 7, 8, and 9 and in all three grades together is shown comparatively for 1915-1920 and 1929-1931 in Figure 2. Considering first the averages for all three grades together, it will be noted that for 1929-1931 the greatest emphasis is placed on English; then follow social studies, foreign language, mathematics, and manual arts in the order named.

The subject fields can not be sharply divided into those which contribute to the needs of all pupils and those offered to care for needs of differentiated groups of pupils. If, however, we consider English, the social studies, mathematics, science, physical education, and fine arts as contributing mostly to needs on a common-to-all basis, and manual and domestic arts, commerce, and foreign languages as contributing mostly to the needs of special groups of pupils, the totals would indicate 61 per cent of the junior high school work as devoted to needs on a common-to-all basis and 39 per cent to needs of individual groups. For 1915-1920, however, the former group constitutes only 56 instead of 61 per cent of the total offering, which seems to indicate a trend toward greater emphasis on needs common to all.

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For 1929-1931, as the proportion of periods allotted to the subject fields for the separate grades is compared with the average for all grades, it appears that in the seventh grade more emphasis is placed on English, social studies, mathematics, physical education, and fine arts, the three first named consuming 67 per cent of all periods of work offered. It will be noted that all these are subjects listed as needed on a common-to-all basis. As contrasted with the 1915-1920 period, the social studies and physical education are shown to receive more emphasis during the late period, seemingly at

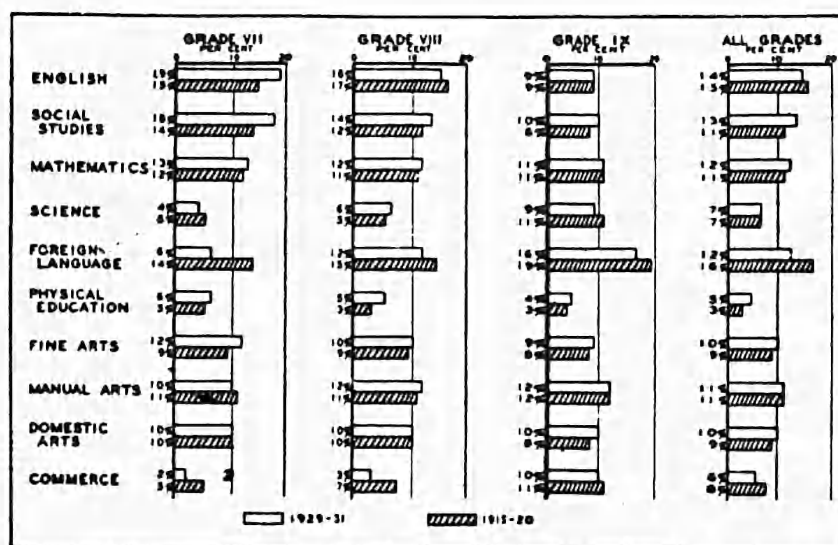


FIGURE 2.—The percentages of the total periods of work offered by which each of the major subject groups is represented in grades 7, 8, and 9 for the years 1915-1920 and 1929-1931

the expense of science, commerce, and foreign language, in the order named.

In the eighth grade for 1929-1931, as compared with the seventh, there is a decrease in the proportion of periods devoted to such subjects needed on a common-to-all basis as English, social studies, physical education, and fine arts, with more emphasis on science, commerce, and foreign language, the latter two being more calculated to serve special groups. As contrasted with the 1915-1920 offering there is shown for the eighth grade of the later period an increase of emphasis on mathematics, social studies, and physical education, accompanied by reductions in the

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proportion of periods devoted to English, commerce, and foreign language. Although, as compared with grade 7, there is a greater proportion of time devoted to subjects calculated to serve differentiated groups, over the 10-year period, the trend has been toward a diminution of this emphasis in favor of emphasis on subjects needed on a common-to-all basis.

The characteristics of the ninth-grade offering for 1929-1931 are similar to those of the eighth grade, except that a considerably greater proportion of periods is allotted to science, commerce, and foreign language. As compared with 1915-1920, the 10-year interval has resulted in increased emphasis on social studies, physical education, domestic arts, and fine arts, with a diminution of the emphasis on science, commerce, and foreign language.

In general, it will be noted that for all grades there is shown for social studies, physical education, and fine arts, a consistent and in some instances a marked percentage of increase in the late over the early period. Contrariwise, for foreign language and commerce, although less marked in grade 9, there are shown consistent reductions for all grades over the 10-year period.

While Figure 2 indicates averages for all schools, it does not reveal the large amount of variation in the percentage each subject constitutes of the total periods scheduled by individual schools. There appears to be more unanimity with respect to physical education, manual arts, and domestic arts; the percentages which include the range of the middle 50 per cent of schools show a difference of less than eight for these subjects. For the most part, there is as little agreement for 1929-1931 as for 1915-1920.

Average number of periods allotted to the major subject groups.—The relative emphasis placed on the major subject groups is revealed from another angle through the data presented in Table 7, in which is shown the average number of periods allotted to each of the major subject groups for grades 7, 8, and 9. When allowance is made for an 11 per cent increase in the length of the 1929-1931 period, the most significant shifts to be noted are in conformity with trends

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noted in the preceding section, namely, (1) increments again for all grades in the fields of social studies, physical education, and fine arts (except for a slight decrease in eighth-grade fine arts) and (2) reductions in all grades in the fields of foreign language, commerce, and science.

It is also noteworthy, in view of the traditional offerings to which the ninth grade was committed before its inclusion within the junior high school organization, that increments are shown in this grade in the fields of manual arts and home economics.

TABLE 7.—The average number of periods offered in the various subject groups for grades 7, 8, and 9, 1915-1920 and 1929-1931

Subject	1915-1920				1929-1931			
	Grade 7	Grade 8	Grade 9	Total	Grade 7	Grade 8	Grade 9	Total
1	2	3	4	5	6	7	8	9
English.....	8.1	8.2	5.4	7.3	6.7	6.6	5.7	6.3
Social studies.....	5.9	5.5	5.0	5.5	6.4	5.6	6.2	6.1
Mathematics.....	5.0	5.2	6.8	5.6	4.9	4.9	6.4	5.4
Science.....	1.9	2.5	6.3	3.5	1.4	2.4	5.2	3.0
Physical education.....	2.0	1.6	1.5	1.7	2.3	2.2	2.1	2.2
Fine arts.....	3.9	4.4	4.8	4.4	4.1	4.2	5.5	4.6
Manual arts.....	4.6	5.0	7.4	5.6	3.5	4.8	7.5	5.3
Home economics.....	4.2	4.7	4.9	4.6	3.7	4.2	5.9	4.6
Foreign language.....	5.8	7.1	11.4	8.0	2.0	4.7	9.5	5.4
Commerce.....	2.0	3.1	6.8	3.9	.6	1.3	6.3	2.8

5. THE REQUIRED WORK

Percentage of pupil load required.—The extent to which the pupil may exercise choice among subjects offered is revealed in Table 8, in which is indicated the proportion of the pupil's total classroom time which is devoted to those subjects which are required of all pupils. The percentages have been computed by dividing the week's total of classroom periods which are allotted to required subjects (and activities, where included in the time of the regular school day) by the week's total of classroom periods which the pupil is ordinarily allowed to take, or by what is commonly termed the "pupil load."

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TABLE 8.—Number of schools requiring the indicated percentage of the pupil load for grades 7, 8, and 9, 1915-1920 and 1929-1931

Percentage	Grade 7		Grade 8		Grade 9	
	1915-1920	1929-1931	1915-1920	1929-1931	1915-1920	1929-1931
1	2	3	4	5	6	7
100.....	20	38	13	23	1	
95-99.....			1			
90-94.....	4	4	4	2		
85-89.....	12	4	10	7		
80-84.....	16	10	17	17	5	3
75-79.....	2	2	3	2	10	9
70-74.....		1	3	5	6	2
65-69.....	2		4	2	1	4
60-64.....					3	3
55-59.....				1	1	4
50-54.....	1		3	1	9	18
45-49.....					1	5
40-44.....					5	3
35-39.....	1		1		2	2
30-34.....			1		2	6
25-29.....					7	1
20-24.....					2	
Total schools.....	58	59	60	60	55	60
Average.....	87.7	94.6	82.7	88.5	55.5	55.8

With attention first to the averages for the respective grades, it will be noted that for 1915-1920, 87.7 per cent of the work for grade 7, 82.7 per cent for grade 8, and 55.7 per cent for grade 9 is required. If calculated on the basis of a pupil load of 30 periods per week, the seventh-grade pupil of the average school may elect 3.7 periods per week, the eighth-grade pupil 5.2 periods and the ninth-grade pupil 13.4 periods per week. Over the 10-year period, the trend has been to restrict even to a greater extent the amount of election permitted the junior high school pupil. Computing again on the basis of a 30-period pupil load for 1929-1931, the seventh-grade pupil in the average school may elect 1.6 periods per week, the eighth-grade pupil 3.4 periods, and the ninth-grade pupil 13.3 periods. These data reinforce what has been pointed out in other connections, that the tendency over the 10-year period to restrict the amount of election permitted the seventh-grade and eighth-grade pupil and to allow wider election to the ninth-grade pupil seems to indicate that the special purposes of meeting individual differ-

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ences and exploration in grades 7 and 8 and of bridging the gap between elementary and secondary schools are not receiving the proper amount of emphasis in the modern junior high school program.

When practices in individual schools are noted, for grade 7 in 1915-1920, the range is found to be from 35 per cent of the total pupil load as required in one school, to 100 per cent required in others; for grade 8, from 30 to 100 per cent; for grade 9, from 20 to 100 per cent. The respective variations in percentages for 1929-1931 are 70 to 100, 50 to 100, and 25 to 85 for grades 7, 8, and 9. For the later period there is somewhat greater concentration, but at the upper end of the scale. As the averages have revealed, such tendency does not reflect a greater effort toward the realization of the peculiar function of the junior high school to care more adequately for individual differences.

Number of subject groups required.—Those subjects which the administration considers to be needed on a common-to-all basis, and hence requires of all pupils in the various grades, are considered as constituting the core curriculum for that school. An idea of the extent to which the various schools have attempted to provide a core curriculum for all three junior high school grades may be obtained from a consideration of the number of schools requiring a certain number of subjects in each grade. For 1915-1920, 6.4, 5.9, and 3.8 subjects constitute the core curriculum in the median school for grades 7, 8, and 9, respectively. From the number of subjects required there would seem to be little opportunity for election in grades 7 and 8. There is a difference of more than two, however, in the number of subjects required in grades 8 and 9 by the median school.

Averages for 1929-1931 indicate that 7.2, 7.2, and 3.5 are the number of subjects required in grades 7, 8, and 9 by the median school. The tendency already observed toward restricting to an even greater degree for the late period the amount of election allowed in grades 7 and 8 is revealed from another angle. Instead of adhering to the principle that variability should increase from grade to grade, the same number of subjects are required in grade 8 as in grade 7. This seems more in accordance with traditional practices in

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the eighth grade under the elementary-school organization than with the purposes of reorganization.

A program that is well balanced in the subjects required on a common-to-all basis and in the amount of election allowed for each grade would be possible, did not the average school attempt to require *the same* subjects for the core curriculum in *all* grades. The consequence is that at the beginning of the ninth grade the traditions of the 4-year high school assert themselves, with a resulting lack of continuity between grades 8 and 9. In 1915-1920, 12 schools required the same 3 subjects, 15 schools the same 4 subjects, 5 schools the same 5 subjects, and 2 schools the same 6 subjects in each of grades 7, 8, and 9. The later tendency to require more subjects in all 3 grades is shown for 1929-1931 data, indicating 14 schools requiring the same 3 subjects, 10 schools the same 4 subjects, 7 schools the same 5 subjects, 4 schools the same 6 subjects, 2 schools the same 7 subjects, and 3 schools the same 8 subjects in all 3 of these grades.

In the case of the remaining 20 schools not represented in these figures, no more than the same 2 subjects were required in all 3 grades. English, the social studies, and mathematics appear most often in the combination of subjects required, while science is the subject most commonly not required in all 3 grades.

Percentage of required periods by which each subject is represented.—The percentage each subject took of the total required periods has been computed for grades 7, 8, and 9 for the two periods 1915-1920 and 1929-1931 by dividing the gross number of periods for which the subject is required in that grade in all schools, by the gross number of periods scheduled for all required subjects in that grade. These data are shown in Table 9. Since it is likely that manual arts is taken exclusively by boys and home economics exclusively by girls, these subject groups were not computed separately, but the average of the total periods devoted to both was considered as the average for industrial arts as a whole; from this figure the computations were made as for the other subject groups.

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TABLE 9.—The percentage of the total periods required which are devoted to the separate subject groups for grades 7, 8, and 9, 1915-1920 and 1929-1931

Subject	1915-1920				1929-1931			
	Grades			All 3 grades	Grades			All 3 grades
	7	8	9		7	8	9	
I	2	3	4	5	6	7	8	9
English.....	29.3	32.4	38.6	32.1	24.6	24.6	36.1	27.1
Social studies.....	22.0	20.4	12.6	19.4	24.3	21.9	15.3	21.4
Mathematics.....	18.3	19.0	20.6	19.1	18.4	19.0	17.5	18.4
Science.....	4.7	6.1	8.8	6.2	4.6	8.1	9.9	7.1
Physical education.....	7.0	6.2	9.7	7.3	8.9	8.9	14.6	10.1
Fine arts.....	9.6	8.4	6.6	8.6	10.1	8.7	4.3	8.3
Industrial arts.....	9.0	7.3	2.4	7.0	9.1	8.3	2.3	7.4
Foreign language.....	.1	.2	.7	.3				
Commerce.....						.5		.2
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

For 1929-1931, 66.9 per cent of the total required periods are devoted to English, social studies, and mathematics, leaving slightly less than one-third of the total required periods which may be devoted to all the remaining subject groups required. English alone constitutes 27.1 per cent of the total required periods, followed by the social studies to which 21.4 per cent of the periods are devoted, and mathematics third with a percentage of 18.4. The other subject groups vary between 10.1 per cent devoted to physical education and 0.2 per cent devoted to commerce. The evidence is convincing, therefore, that English, the social studies, and mathematics are the subjects most stressed in the more recent junior high school program with physical education fourth in importance.

Comparing the averages of 1915-1920 with those for 1929-1931 just considered, an even greater proportion of the total periods required, i. e., 70.6 per cent, were devoted during the early period to the three subjects to which most attention was given during the late period. Although there was a decrease from the early to the late period in the percentages shown for English and mathematics, considerable increase is shown for the social studies, indicative of a late tendency to place more emphasis on the civic-social aim of education. A comparison of the averages shown for physical education likewise reflects a modern tendency to place more stress on

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the health objective. No considerable difference for the two periods is shown in the averages for the other required subjects. A slight increase is shown for the late period in the case of science and the industrial arts, while a slight decrease is shown for the fine arts.

Considering now the degree to which the subject groups are stressed in individual grades for both 1915-1920 and 1929-1931, in the case of all subjects except science, there is little difference in the averages shown as between grades 7 and 8. As between grades 8 and 9, however, the variation which we have been led to expect is once more apparent. A considerable increment is shown in the case of English and physical education and a no less significant reduction for social studies, industrial arts, and fine arts.

Average number of minutes devoted to required subjects.—When considered on the basis of the average number of minutes devoted to them, the various subject groups rank about the same as when considered on the basis of the percentage of the total periods which they occupy. Data are presented in Table 10, showing the average number of minutes per week devoted to each of the required subjects in the separate junior high school grades. The averages have been computed by dividing the gross number of minutes by the total number of schools, even though the subject may not have been required at all in some schools.

TABLE 10.—The average number of minutes per week devoted to required subjects for grades 7, 8, and 9, 1915-1920 and 1929-1931

Subject groups	1915-1920				1929-1931			
	Grade 7 (58)	Grade 8 (60)	Grade 9 (55)	Average	Grade 7 (59)	Grade 8 (60)	Grade 9 (60)	Average
1	2	3	4	5	6	7	8	9
English.....	343.9	336.9	230.0	306.6	332.5	310.2	266.5	299.7
Social studies.....	262.3	217.7	86.8	188.9	320.6	264.1	108.2	231.0
Mathematics.....	230.1	202.2	133.0	185.1	248.7	242.8	125.4	205.6
Science.....	55.8	63.5	53.7	57.7	62.5	108.3	59.2	76.7
Physical education.....	69.1	63.0	62.9	65.0	120.5	111.8	98.8	110.4
Fine arts.....	121.2	90.2	41.6	84.3	139.8	109.3	29.5	92.9
Manual arts.....	112.4	84.7	17.5	71.5	121.9	99.1	14.7	78.6
Home economics.....	109.2	92.0	12.3	71.2	122.9	100.9	13.9	79.2
Other.....	9.0	10.7	6.0	8.6	56.6	65.5	13.7	45.3

NOTE.—The numbers in parentheses are the numbers of schools represented.

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For 1929-1931, considering the averages for all three grades, English again ranks ahead of all other subjects, followed by the social studies and mathematics. Physical education and fine arts rank fourth and fifth, but on averages of approximately a half of those shown for the three subjects named in the first group. Home economics, manual arts, and science constitute a group ranking sixth, seventh, and eighth, respectively, on percentages about three-fourths of those shown for the second group. Subjects classified as "other," in which are represented commerce, foreign language, and such activities as clubs, home room, assembly, and the like, designated as "socializing-integrative activities," rank last with an average of 45.3 minutes per week.

Considering the averages by grade for 1929-1931, social studies in grade 7 with an average of 320.9 minutes almost equals the average of English, with mathematics a poor third. Physical education, fine arts, home economics, and manual arts constitute a second group of subjects with averages around two clock hours per week. To science and subjects classed as "other" are devoted only about one hour per week.

In grade 8, the social studies do not rank so close to English, and the average for science approaches two clock hours, but in general the subjects rank the same, with averages of about 20 minutes less than for grade 7. In the ninth grade, English stands alone with an average of four and one-quarter clock hours per week. Mathematics, social studies, and physical education are again next in rank, but with less than half the average for English. Science ranks fifth in grade 9, but with less than an hour devoted to it. Averages of less than 30 minutes are shown for the other subjects in grade 9.

Despite the fact that English ranks far ahead of all other subjects, when trends over the 10-year period are examined, it is the only subject, averages for all grades considered, which shows a loss in the number of minutes devoted to it. The increases for other subjects are not great, it is true, being most marked in the case of social studies and physical education, but they run true to the trends revealed in Chapter III in the direction of requiring more work in grades 7 and 8. As might be expected, grade 9 in the table being considered,

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does not run true to the averages shown for all grades and for grades 7 and 8. Instead of a decrease as in all other averages, English shows an increase in this grade. On the other hand, three of the subject groups for which there are increments in the other averages (mathematics and, to a lesser degree, fine arts and manual arts) have suffered a loss over the 10-year period in the averages for grade 9. It is of some significance, in view of the place occupied by mathematics in the traditional school curriculum, that it is not required to the same extent in the ninth grade of the reorganized school.

CHAPTER V : TRENDS IN 60 PROGRAMS—THE SPECIFIC COURSES OFFERED AND REQUIRED

1. SCOPE OF THE CHAPTER

Through presentation of branches of subject matter, designated as "courses," which are offered within each subject field, the present chapter affords additional opportunity for considering the degree to which trends are in the direction of realizing the peculiar functions of the junior high school. Data are presented (1) for English, social studies, mathematics, science, and foreign language, designated as the academic fields, and (2) for physical education, fine arts, commerce, manual arts, and home economics, designated as special fields.

2. NUMBER OF SEPARATE COURSES OFFERED

Before considering the subject fields separately it will be of interest to note the number of different courses which were offered in each of the subject-matter fields in 1915-1920 and in 1929-1931. The median and the range of the middle 50 per cent of the courses offered in each field are shown in Figure 3. In addition to the 10 major subject fields considered up to this point, there is also represented in the figure under the title "socializing-integrative activities" the number of activities such as auditorium, clubs, home room, and the like which were scheduled as a part of the regular daily program during the two periods represented.

The diagram is to be read as follows: For 1915-1920, in all three grades of English, the average number of courses (such as grammar, spelling, literature, and the like) given a distinct place in the program of studies is 7.4; the range in number scheduled by the middle 50 per cent of schools is from 5.2 to 9.5 courses. For 1929-1931, the median school scheduled 5.9 courses. The diagrams representing mathematics, social studies, and the remaining groups are to be read in like manner.

Seven of the 11 groups represented show a reduction in the median and in the range of the middle 50 per cent of courses

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offered. The reduction, while only slight in the field of mathematics, social studies, science, and home economics, is more noteworthy in English, foreign language, and commerce. Increments are again shown for physical educa-

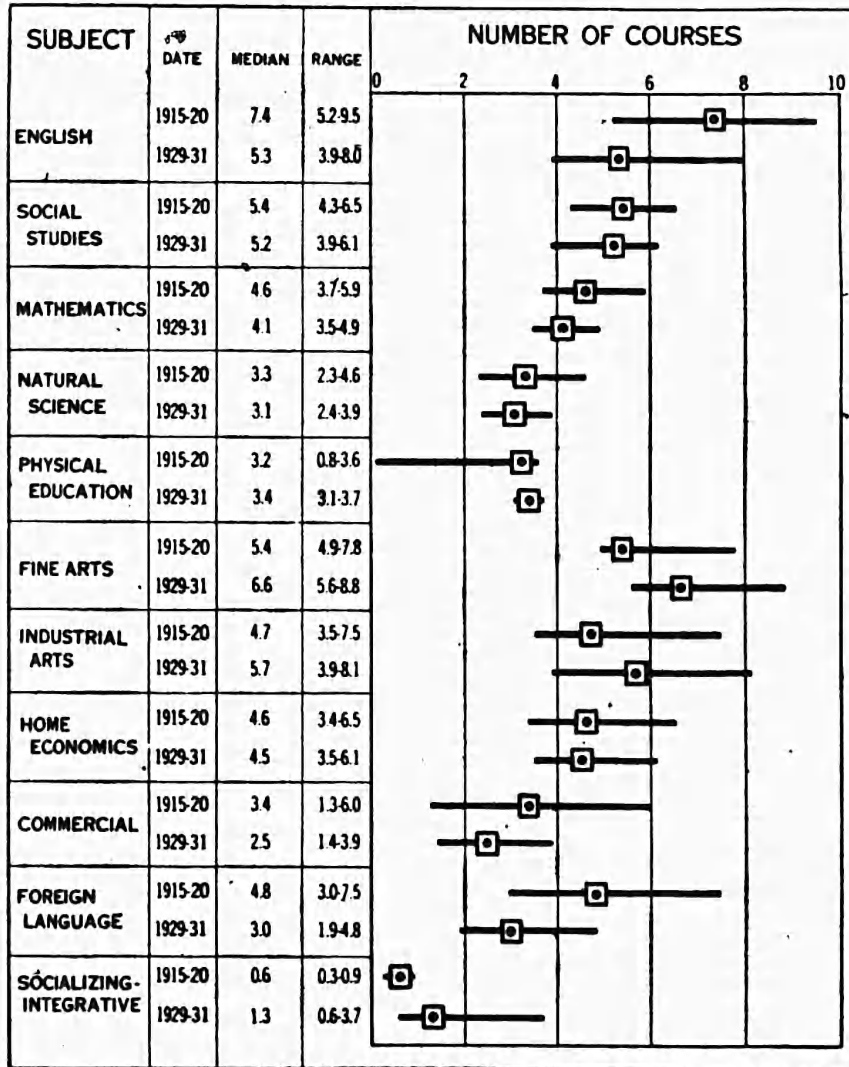


FIGURE 3.—The median and range of the middle 50 per cent of courses offered in the various subject-matter fields, 1915-1920 and 1929-1931

tion, fine arts, manual arts, and "socializing-integrative activities."

The increments last named, that is, for physical education, fine arts, manual arts, and socializing-integrative activities, may no doubt be considered as an attempt to offer a

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more varied program in these fields. Whether the reductions shown for the other fields is indicative of a narrower choice of subject matter afforded or whether it means an attempt at economy of time and greater integration through the fusion of two or more courses may be gathered from the succeeding sections in which the nature of the courses offered in each subject field are considered.

3. COURSES IN THE ACADEMIC FIELDS

English.—The idea that English is regarded as the most important subject in the junior high school program of studies has been gathered from previous tabulations showing the relative emphasis given to it. It is of considerable significance that, as shown in Table 11, English was both offered and required in each grade by all schools, both for the 1915–1920 and the 1929–1931 period. The table also reveals that there is little distinction in the specific courses offered and required in this field.

For 1915–1920, many schools offered and required separate courses in each grade in composition, grammar, literature, penmanship, and spelling. No one will dispute the value of such courses in providing training in the fundamental processes and in the worthy use of leisure time. However, for 1929–1931, instead of organizing separate courses of this nature, more than half the schools for grades 7 and 8, and almost three-fourths for grade 9 during this period, scheduled only one course, designated simply as English, but described in many instances as including training of each of these specific types. The extent of genuine fusion can not be ascertained from an examination of the program of studies alone. However, in this, as in other subject fields noted later, such correlation does indicate a clarification of the function of the courses. It is noticeable that the separate courses of the nature described are scheduled more often in grades 7 and 8 than in grade 9, which is the probable cause of the greater number of minutes being assigned to the former two grades than to the latter, as was shown in Chapter IV.

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TABLE 11.—The number of schools in which specific courses are offered and required in the academic fields. (Numbers with required courses are shown in parentheses)

Subject field and courses	1915-1920			1929-1931		
	Grade 7	Grade 8	Grade 9	Grade 7	Grade 8	Grade 9
1	2	3	4	5	6	7
ENGLISH						
English.....	33(33)	35(35)	43(43)	45(45)	46(46)	47(47)
Literature.....	23(23)	23(23)	12(12)	18(18)	18(18)	11(11)
Grammar.....	20(20)	22(22)	4(4)	9(9)	8(8)	2(2)
Composition.....	16(16)	17(17)	10(10)	11(11)	11(11)	8(8)
Penmanship and spelling.....	17(17)	15(15)	3(1)	11(11)	9(9)	1(1)
Penmanship.....	14(14)	12(12)	1(1)	14(14)	8(8)	0(0)
Spelling.....	14(14)	17(17)	7(3)	9(9)	7(6)	3(3)
Extra English.....	9(0)	9(0)	2(0)	3(0)	5(0)	4(0)
All other courses.....	14(12)	15(13)	13(5)	10(7)	19(9)	15(5)
The whole field.....	58(58)	60(60)	55(55)	59(59)	60(60)	60(60)
SOCIAL STUDIES						
Geography.....	49(48)	24(17)	3(1)	36(36)	12(11)	4(3)
United States history.....	23(22)	28(28)	2(2)	18(18)	17(17)	0(0)
History.....	22(22)	26(24)	6(2)	19(19)	21(21)	3(2)
Civics.....	7(6)	25(24)	11(6)	7(7)	20(20)	13(9)
Ancient history.....	0(0)	0(0)	21(2)	0(0)	0(0)	18(4)
Social studies.....	2(2)	2(2)	1(1)	17(17)	17(17)	13(11)
Vocations.....	1(0)	1(0)	3(0)	2(2)	6(6)	10(3)
Community civics.....	1(1)	3(3)	4(4)	0(0)	3(3)	6(3)
All other courses.....	9(8)	9(4)	15(4)	3(3)	8(8)	21(8)
The whole field.....	57(56)	58(57)	47(20)	59(59)	60(60)	55(31)
MATHEMATICS						
Arithmetic.....	51(50)	43(42)	3(0)	27(26)	23(23)	1(0)
Mathematics or general mathematics.....	6(6)	14(12)	10(5)	34(34)	39(36)	24(14)
Algebra.....	1(1)	18(14)	45(28)	1(0)	3(1)	39(17)
Commercial arithmetic.....	1(0)	7(4)	28(7)	2(1)	1(1)	20(7)
All other courses.....	2(1)	6(5)	14(6)	0(0)	1(0)	12(6)
The whole field.....	58(57)	59(57)	54(31)	59(59)	60(60)	59(30)
SCIENCE						
General science.....	4(3)	13(7)	30(10)	7(6)	23(19)	33(15)
Hygiene.....	11(7)	7(5)	2(1)	14(13)	6(6)	3(2)
Science.....	3(2)	7(7)	3(3)	6(6)	8(7)	7(5)
Physiology.....	13(12)	11(11)	0(0)	2(2)	3(3)	4(2)
Elementary science.....	5(3)	6(2)	4(0)	3(3)	6(6)	4(0)
Agriculture.....	4(0)	6(2)	6(0)	1(0)	2(1)	8(0)
Physical geography.....	2(2)	1(1)	9(0)	1(1)	4(4)	2(0)
Biology.....	0(0)	1(1)	5(1)	0(0)	1(1)	9(1)
Botany.....	0(0)	0(0)	6(0)	0(0)	0(0)	1(0)
All other courses.....	5(4)	6(3)	9(2)	1(1)	2(2)	2(1)
The whole field.....	34(27)	41(30)	47(14)	32(29)	48(42)	54(23)
FOREIGN LANGUAGE						
Latin.....	23(0)	36(0)	52(0)	8(0)	22(0)	52(0)
French.....	16(0)	19(0)	25(0)	10(0)	20(0)	34(0)
German.....	19(0)	25(0)	25(0)	4(0)	4(0)	11(0)
Spanish.....	13(0)	16(0)	19(0)	7(0)	10(0)	12(0)
Foreign language.....	1(0)	2(0)	1(0)	2(0)	4(0)	6(0)
All other courses.....	0(0)	0(0)	1(0)	2(0)	4(0)	2(0)
The whole field.....	32(0)	45(0)	55(0)	11(0)	30(0)	60(0)

¹ Represents total number of schools from which programs were secured in this grade.

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Indications of greater efforts toward genuine reorganization are to be seen in the fact that by 1929-1931, there had been an increase of courses in correlated English with a consequent decrease in the number of separate courses which were frequently offered in 1915-1920. Of special significance is the fact that the number of schools offering separate courses in grammar decreased by 50 per cent or more in each grade over the 10-year period. It seems that two of the peculiar functions of the junior high school, namely, the retention of pupils and recognition of the nature of the adolescent child, have been brought to the forefront in such schools. Furthermore, the significance of such correlation in the economy of time is not to be discounted. Provided there has been no sacrifice of essential subject matter, the reduction shown in Chapter IV in the average number of minutes devoted to English in grades 7 and 8 may be considered as meeting the purposes of genuine reorganization rather than a diminution of efforts to provide for individual differences.

While the distinction between the courses offered and required in English is not great, there is observable in a somewhat limited number of schools an increased tendency to offer elective courses in English which are calculated to provide opportunities for exploration and the beginnings of special training. Of the former type, shown in the table under "all other courses," the course in exploratory language offered in five schools in 1929-1931, is worthy of note. Of the latter type, courses which are being offered in a few schools in debating, dramatics, journalism, and vocational English may perhaps be considered as indicative of a tendency. Enrichment of a general nature seems to be afforded in only a few schools for 1915-1920, and in an even smaller number for 1929-1931, judging from the frequencies with which courses designated as "Extra English" are offered.

Social studies.—The social studies were offered in grades 7 and 8 of almost all schools for both periods, but were omitted from the offering of grade 9 in eight schools for 1915-1920 and in five schools for 1929-1931. For 1915-1920, the usual seventh grade offering appears to be United States history and geography, appearing, respectively, in 45 and 49 schools, with 10 schools offering civics or citizenship; for the eighth

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grade, the offering is commonly a continuation of history, with citizenship or civics ranking ahead of geography in the ratio of 34 schools to 21; the courses most commonly offered in the ninth grade are ancient history and civics.

For 1929-1931, United States history and geography continue to be the subjects most commonly offered in the seventh grade but there is a decided tendency, as evidenced by its appearance in 17 schools, to substitute a correlated course in social studies for separate courses in history, geography, and civics. The same tendency is to be observed in the eighth-grade offering. In the ninth grade there have been few changes in the number of schools offering ancient history, but 7 more schools have added courses in civics by the end of the 10-year period. Only 13 schools are shown as offering correlated courses in the social studies for the ninth grade. The question immediately arises as to why the same schools have not carried the correlated courses through all junior high school grades. Perhaps this was owing to the dependence of courses on textbooks and the fact that no complete series of textbooks was available at the date represented by the programs of studies analyzed.

Certain other changes over the 10-year period, which are of considerable significance to curriculum reform, are indicated in the table. For the later period, courses in vocations were offered in the eighth grade of 6 schools while in the ninth grade the same courses were offered in 10 schools. In view of the function of the junior high school to provide opportunities for exploration and the beginnings of vocational training, it seems that such courses would be offered in even more schools, but the fact that they were scarcely offered at all during the early period seems to indicate a late tendency toward a more practical recognition of this special function of the junior high school. In general it will be noted that in grades 7 and 8, the courses offered are also in most cases required. In grade 9, less than one-half for 1915-1920, but slightly more than one-half for 1929-1931, of the courses which are offered are also required.

4 *Mathematics*—While mathematics, it will be recalled, ranks third in the proportion of total periods devoted to it, it falls a little short of being offered in all grades of all schools,

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there being one school in which it was not offered for 1915-1920 in either grade 8 or grade 9, and one school in which it was not offered in grade 9 for 1929-1931. For 1915-1920, practically the only courses offered in grade 7 were arithmetic and general mathematics in the ratio of 51 schools to 6. In grade 8, arithmetic is still the most prominent offering, being listed in 43 schools. Algebra is more frequently offered in this grade than general mathematics, however, the number of schools in which each is offered being 18 and 14, respectively. Commercial arithmetic is the only other subject which appears frequently in the table, being listed in 7 schools. In grade 9, the choice is for the most part between algebra, commercial arithmetic, and general mathematics, which appear in 45, 28, and 10 schools, respectively.

The most striking changes over the 10-year period are in the increasing popularity of general mathematics in all three grades. In grades 7 and 8, it has displaced arithmetic as the course of first importance and is no doubt responsible for almost the entire elimination of algebra from the eighth grade. Although not displacing algebra, it has shown considerable increase at the expense of this subject in grade 9 and is more frequently offered than commercial arithmetic during the late period. The frequency with which courses in general mathematics are offered during the late period seems to indicate a growing tendency towards better articulation, greater opportunities for exploration, and a more enriched offering in this field, since such courses usually make possible a more gradual transition from grade to grade through the early introduction of certain aspects of senior high school mathematics.

The offering of such courses as commercial arithmetic, applied mathematics, industrial arithmetic, correlated arithmetic and bookkeeping, and vocational algebra is evidence of some attempt to provide for individual differences and the beginnings of vocational education. Such attempts, however, are very infrequent except in the case of commercial arithmetic and are more so in the late than in the early period.

For grades 7 and 8, there is practically no distinction in the number of schools offering and requiring arithmetic and

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general mathematics, which are the courses most commonly scheduled in these grades. For grade 9, only about half the schools which offer algebra or general mathematics require them of all pupils, while the schools requiring commercial arithmetic constitute only about a fourth of those in which it is scheduled. No other courses in grades 8 or 9 are required in more than 1 or 2 schools.

Science.—Only about half the schools offer courses in science in the seventh grade for either period. About two-thirds of the schools offer this subject in grade 8 and five-sixths of the schools in grade 9 for the early period, but for the late period this field is represented in five-sixths and nine-tenths of all schools for grades 8 and 9, respectively.

For both periods, the course most commonly offered in each grade is variously designated as elementary science, science, or general science, with the latter term used most frequently, especially in grades 8 and 9. For the late period, the titles, elementary science, and science do not appear often in any grade. The practice of offering correlated courses in the field of science seems to have begun earlier and to have become more widespread than in any other of the major subject fields.

In grades 7 and 8 for 1915–1920, the only other courses with which general science had to compete were those in physiology and hygiene, but in 1929, such courses had been correlated to a considerable extent with physical education. In the ninth grade, it is true, more strenuous competition was offered, but for 1929–1931, the latter course had probably been absorbed by the social studies. In case of the former course, there has been no complete absorption, but correlation is to be observed in the increased number of schools in which biology courses were offered.

The increased tendency to offer courses in general science has no doubt been a contributing cause to the decrease in the average number of periods shown for science in 1929–1931 over those allotted to the whole field in 1915–1920. Economy of time, better opportunities for exploration, and increased articulation are made possible through the correlation of courses in the major subject fields. It is probably only through such correlations that the realization of all functions

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of the junior school is possible. Although there is a tendency toward such correlation to be observed in late programs, it would make possible the introduction of additional fields of subject matter in those schools which have varied little from traditional practices, if the economies incident to such correlation were effected.

In 1915-1920, in the whole field of science, the ratio between schools in which this subject is offered and required is 34 to 27 in grade 7, 41 to 30 in grade 8, and 47 to 14 in grade 9. Over the 10-year period, however, there is a tendency for this subject to become required in most schools for grades 7 and 8, the respective ratios between the number of schools in which it is required and offered being 32 to 29 and 48 to 42. Science is required in less than a third of the schools in grade 9 for 1915-1920, but the requirement has been increased to include almost half the schools for 1929-1931. The situation with respect to grade placement of courses included in the total offering is practically the same for the required courses.

Foreign languages.—In the field of foreign languages there is a decided tendency over the 10-year period for the offering to be restricted to the pupils of grade 9. Between 1915-1920 and 1929-1931, the total of all courses offered has decreased from 74 to 34 in grade 7, and from 100 to 65 in grade 8. The ninth grade also shows a decrease, but only a small one.

These decreases are shown for all languages in one or more grades, but they are borne to the greatest extent by German. Spanish has also shown a slight decrease in all grades, while French has made small gains in grades 8 and 9. Latin shows no change in the ninth grade but has decreased in grades 7 and 8. Courses were required in this field by two schools in 1915-1920, but by no schools in 1929-1931.

4 COURSES IN THE SPECIAL FIELDS

Physical education.—Details concerning physical education and other special subjects, similar in nature to those presented for the five subject fields already considered, are shown in Table 12. Data presented in another connection in this chapter have revealed the late tendency toward increased emphasis in this field. The figures summarized at the end of the table now being considered show that while

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this subject was offered in only two-thirds of the schools in the early period, at the end of 10 years it was being offered in practically all of the 60 schools. It is also significant that there is little variation as between grades in the number of schools offering this subject.

TABLE 12.—The number of schools in which specific courses are offered and required in the special fields. (Numbers with required courses are shown in parentheses)

Subject field and courses	1915-1920			1929-1931		
	Grade 7	Grade 8	Grade 9	Grade 7	Grade 8	Grade 9
1	2	3	4	5	6	7
PHYSICAL EDUCATION						
Physical education.....	29(28)	35(34)	32(30)	38(37)	43(42)	39(36)
Health.....	2(2)	1(1)	1(1)	11(11)	11(11)	9(8)
Physical education and hygiene.....	6(6)	3(3)	1(1)	3(3)	1(1)	1(1)
All other courses.....	3(3)	4(3)	2(2)	3(3)	2(2)	2(2)
The whole field.....	41(39)	41(39)	36(32)	57(56)	58(57)	53(31)
FINE ARTS						
Music.....	55(45)	52(40)	33(16)	52(47)	54(42)	40(15)
Drawing.....	47(36)	41(26)	27(10)	45(39)	40(30)	30(8)
Chorus and vocal.....	6(3)	8(4)	10(5)	6(2)	8(3)	14(3)
Freehand drawing.....	6(5)	8(5)	15(1)	4(3)	4(2)	4(0)
Orchestra.....	4(1)	4(1)	1(0)	7(0)	7(0)	7(0)
Art.....	1(1)	1(0)	2(0)	3(3)	5(2)	8(0)
Design.....	2(1)	6(2)	5(0)	0(0)	2(2)	2(1)
Instrumental music.....	0(0)	0(0)	0(0)	5(1)	5(1)	6(0)
All other courses.....	4(1)	12(2)	6(1)	11(6)	13(4)	14(0)
The whole field.....	57(49)	54(46)	45(23)	57(53)	58(48)	54(19)
COMMERCE						
Typewriting.....	11(0)	19(0)	22(0)	3(0)	8(0)	26(0)
Commercial arithmetic.....	1(0)	7(0)	28(0)	1(0)	1(0)	20(0)
Penmanship.....	7(0)	10(0)	13(0)	4(0)	3(0)	13(0)
Bookkeeping.....	6(0)	13(0)	21(0)	0(0)	0(0)	9(0)
Stenography.....	3(0)	5(0)	14(0)	0(0)	1(0)	3(0)
Commercial geography.....	0(0)	4(0)	8(0)	0(0)	0(0)	9(0)
All other courses.....	8(0)	12(0)	13(0)	2(0)	4(0)	11(0)
The whole field.....	21(0)	33(0)	38(0)	7(0)	18(0)	51(0)
MANUAL ARTS						
Manual arts.....	34(25)	38(21)	21(2)	29(23)	30(23)	22(5)
Mechanical drawing.....	12(5)	23(6)	32(2)	9(6)	18(8)	33(0)
Shop.....	14(10)	12(9)	12(3)	12(11)	24(12)	19(2)
Woodwork.....	16(9)	11(4)	16(1)	18(13)	11(5)	16(0)
Printing.....	10(4)	14(6)	7(0)	6(4)	15(5)	12(0)
Metals.....	5(3)	4(1)	4(0)	8(5)	6(3)	8(1)
Electricity.....	4(2)	5(1)	4(0)	7(4)	7(3)	6(0)
Cabinet.....	0(0)	5(0)	3(0)	0(0)	0(0)	7(0)
All other courses.....	7(5)	10(3)	14(0)	8(5)	11(5)	14(0)
The whole field.....	52(45)	58(39)	50(6)	58(49)	58(43)	58(7)
HOME ECONOMICS						
Home economics.....	27(22)	33(22)	17(3)	26(21)	29(19)	22(7)
Clothing.....	27(18)	24(12)	24(1)	26(21)	25(18)	24(0)
Foods.....	20(12)	29(16)	21(2)	23(17)	26(19)	23(1)
Household arts.....	7(4)	5(2)	8(0)	4(3)	5(3)	8(0)
Household management.....	0(0)	3(1)	1(0)	5(4)	7(4)	4(0)
All other courses.....	10(5)	13(8)	17(0)	8(2)	7(1)	13(0)
The whole field.....	53(45)	59(42)	50(5)	57(49)	58(43)	59(9)

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While a large variety of titles do not appear in the list of courses offered, a comparison of those listed for the two periods shows a trend away from emphasis on formal gymnastics with increased attention to the correlation of health with physical education. The courses appearing as gymnasium and physical training and hygiene are offered less often in 1929-1931 than in 1915-1920, while those bearing the title health or health and physical training appear with considerably more frequency during the late period.

What was found to be the common situation in the agreement of courses offered and required in grades 7 and 8 in the fields of English, mathematics, and social studies is true for grades 7, 8, and 9 in the field of physical education. But physical education, more than any other subject in the junior high school, if scheduled at all, is almost always required.

Fine arts.—Details with respect to the fine arts indicate that some courses in this field are offered in grades 7 and 8 in practically all schools for both periods. The field is hardly represented so frequently in grade 9, although a decided increase is shown over the 10-year period. In all grades, the courses offered most often, judging from the titles listed, are general courses in the field of music and graphic art, which appear in the table as "music" and "drawing."

In the seventh grade, for either period, there are very few courses of a specialized nature listed. In the field of music a few schools list separate courses in chorus and vocal and for 1929-1931 as many as 15 schools offer courses in instrumental music. In the field of art, no specialized course is listed for the seventh grade in more than two schools. The characteristics of the music offering in the eighth grade are very similar to those of the seventh. In the field of art, however, additional courses in applied art, arts and crafts, and design are offered in the eighth grade of a few schools for 1915-1920, although these courses had decreased in number by the end of the 10-year period.

A decrease is shown for the ninth grade as compared with grades 7 and 8, in the number of schools in which general courses are listed, but there has been very little consequent increase in the number of specialized courses offered. No specialized courses in addition to those already mentioned

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appear in the offering of more than two schools, although there is a slight increase in the number of schools offering chorus and vocal.

Although a slightly greater number of schools appear to offer courses in music than in art, a summary of averages indicates that the latter is scheduled for averages of 3 and 2.9 periods for 1915-1920 and 1929-1931, respectively, and music is scheduled for corresponding averages of only 3.1 and 2.6 periods. In each instance a greater number of periods of work is offered in grade 9 than in grades 7 and 8.

It appears that for 1929-1931, the fine arts were offered in almost all schools in grades 7 and 8 and in nine-tenths of the schools in grade 9. They were required in about nine-tenths of the schools in grade 7, four-fifths of the schools in grade 8, and a third of the schools in grade 9. The proportion of schools requiring the work in grades 7 and 8 during the early period is about the same as that for the late period, but over the 10-year period there has been a decrease in the number of schools making requirements in this field in grade 9.

Commerce.—Probably there has been more change in the offering in the field of commerce than in any other subject group of the junior high school. During the early period, commerce was introduced into the seventh and eighth grades in 21 and 33 schools, respectively, but during the late period in only 7 and 18 schools. On the other hand, whereas only 38 schools offered commerce in the ninth grade in 1915-1920, it was being offered in 51 schools 10 years later. It is likely that many schools abandoned courses in this field on account of such a large number of periods being required for each course.

The seventh and eighth grade offerings during the early period consisted for the most part of bookkeeping, typewriting and penmanship. At the end of 10 years, bookkeeping continued to be offered more than any other course, but it appeared in the program of only 7 and 18 schools, respectively, for grades 7 and 8.

To the subjects offered in the seventh and eighth grades, commercial arithmetic and stenography are to be added to represent the common ninth-grade offering. Considerable change has taken place in the offerings of this grade during

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the 10-year period. Whereas junior business training was offered in only one school during the early period, for 1929-1931 it ranks third in the courses appearing most frequently, being represented in 22 schools. The number of schools offering bookkeeping has increased from 38 to 51; type-writing from 22 to 26; and stenography has decreased from 14 in 1915-1920 to only 3 schools for the 1929-1931 period.

Fifteen courses, in addition to those mentioned, are listed, but they appear in only a small number of schools. Although no requirements in this field are shown in the table, junior business training was required in the eight grade of four schools for 1929-1931.

Manual arts.—Manual arts is offered in all grades of almost all schools. A large variety of courses in this field are listed, but the course appearing most frequently is probably a general one since it is designated simply as manual arts. Other courses of frequent appearance are mechanical drawing, shop, woodwork, and printing. A great deal of variation, either in the grade placement of the respective offerings or in the frequencies with which specific courses are offered over the 10-year period is not observable. The greatest variation is in the offering of shop courses which are listed with considerably more frequency in grades 8 and 9 in 1929-1931 than in 1915-1920. The titles of the courses offered seem to indicate emphasis on exploration and enrichment rather than on specific vocational training.

Courses appearing in 1915-1920 which are not listed at all on the 1929-1931 programs are bookbinding, concrete, and painting and decorating. On the other hand, plumbing is the only course offered in 1929-1931 which was not also offered in 1915-1920.

Manual arts is required in about five-sixths of the schools in grade 7, two-thirds of the schools in grade 8, and one-ninth of the schools in grade 9. The tendency over the 10-year interval is for this subject to enter the required group in grades 7 and 8, but more frequently to be elective in grade 9. The courses offered with most frequency are also the ones most often required.

Home economics.—The status of home economics in the various schools is very similar to that just described for

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manual arts, not only with regard to the number of schools in which offered, but also in the type of courses listed in the various grades. While 19 different courses are listed in this field, in most instances the offerings appear under the titles, "Foods," "Clothing," or simply as "Home economics." Again, one would judge that the aim sought is general rather than specialized. The titles of the courses do not indicate, however, whether there is progressive development from grade to grade or considerable overlapping in the materials offered.

Two courses, somewhat more specialized, appear more often than others. Household arts are offered with some frequency during both periods, while household management shows an increase for the later period. The other 14 courses are offered in only one or two schools. Courses in embroidery and household chemistry were offered in the early but not in the late period. On the other hand, courses in child care, health and nutrition, and household sanitation were offered in 1929-1931, but not in 1915-1920. Otherwise there is little change in the offerings of the two periods.

Practically the same relationship between the work offered and required in the separate grades for manual arts is seen to exist also for home economics. It seems that the administration has tried to keep balance in the program by paralleling the courses scheduled specifically for boys and for girls.

Socializing-integrative activities.—The analysis of the specific courses offered in the various schools would be incomplete without some reference to the growing tendency in certain junior high schools to set aside periods in the regular schedule to be devoted to what are here termed "Socializing Integrative Activities." As shown in Table 13, the activities most often listed are "Clubs," "Guidance," "Assembly," and "Home Room." The titles appear in the table as they were indicated on the programs, but when the combinations are broken up, it is noted that clubs, guidance, and assembly are scheduled in about a fourth of all schools for the late period, whereas they were scheduled in only one or two schools during the early period. In almost all schools these activities are required.

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TABLE 13.—The number of schools in which specific courses in socializing-integrative activities are offered and required in grades 7, 8, and 9, 1915-1920 and 1929-1931. (Numbers with required courses are shown in parentheses)

Course	1915-1920			1929-1931		
	Grade 7	Grade 8	Grade 9	Grade 7	Grade 8	Grade 9
1	2	3	4	5	6	7
Activities.....	1 (0)	2 (1)	2 (1)	4 (3)	4 (2)	3 (1)
Auditorium or assembly.....	2 (2)	2 (2)	0 (0)	7 (7)	8 (8)	8 (7)
Clubs.....	0 (0)	0 (0)	0 (0)	4 (4)	5 (5)	6 (6)
Clubs, guidance, and assembly.....	0 (0)	0 (0)	0 (0)	8 (8)	8 (8)	6 (6)
Guidance.....	0 (0)	0 (0)	0 (0)	4 (4)	4 (4)	5 (4)
Guidance and assembly.....	1 (0)	1 (0)	0 (0)	2 (2)	1 (1)	1 (1)
Home room.....	0 (0)	0 (0)	1 (0)	2 (2)	3 (3)	3 (3)
Manners and conduct.....	1 (0)	1 (0)	1 (0)	2 (1)	1 (1)	1 (0)
The whole field of socializing-integrative activities.....	4 (2)	4 (3)	4 (1)	19 (18)	22 (19)	19 (15)

CHAPTER VI : TRENDS IN 60 PROGRAMS
A SUMMARY

1. PURPOSE OF THE CHAPTER

While certain trends have been pointed out as data have been presented in the preceding chapters, it is attempted in this chapter to focus the evidence distributed throughout the several preceding chapters around those purposes which educational leaders seem in effect to agree should underlie a reorganization of the grades concerned.

The whole junior high school movement is intimately connected with a new conception of the general function of secondary education. The idea that the secondary school should begin earlier than the traditional 4-year high school was partly the result of the conception of the secondary school as not merely an institution to train a single body of pupils for the sole purpose of entering college, but one that will provide training needed by pupils who expect to enter the vocations or who are undetermined on their future plans during their stay in the secondary school.

2. DEGREE TO WHICH SPECIAL PURPOSES ARE REALIZED

Provisions for noncollege pupil.—A review of the data for the 1915-1920 and 1929-1931 periods reveals a number of specific changes over the interval which may be marshaled to indicate an abandonment of the traditional conception of the secondary school. It has been seen that the most significant shift in the kinds of curriculums offered is the increment in the number of schools offering a "general" curriculum for the noncollege-going pupil. A consideration of the general nature of the total offering reveals that while in 1915-1920 a large number of schools had no place in their offering for such special subjects as physical education and commerce, all but one or two had introduced them by the end of the period. Grade 9, which was moved from its place in the traditional high-school organization, shows the influence of its new

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company by an increment of from 8 to 8.6 in the average number of subject fields represented in its offering.

Trends revealed by subjects most emphasized.—Further evidence may be assembled from the two chapters dealing with the total offering and requirements in the major subject fields and the specific courses within such fields. An increment in the percentage which the special subjects as a group (physical education, fine arts, manual arts, home economics, and commerce) absorb of the total periods is shown for both total offering and required work. The comparisons indicate the increasing importance attained by physical education, social studies, and fine arts, consistent in nearly all cases for all three junior high school grades. Such subjects are no doubt provided for the specific purpose of caring for needs common to all: Civic and social responsibility, health, aesthetic appreciations; needs which have not been recognized in college entrance requirements. The increasing importance attained by manual arts and home economics in the ninth-grade program of studies is also indicative of the abandonment of traditional aims. Finally, within the academic fields the retreat of such traditionally college preparatory offerings as grammar, algebra, ancient history, and physical geography in favor of correlated English, general mathematics, correlated social studies, and general science may be attributed to a reformulated conception of secondary education as a whole.

Functions not realized.—On the other hand, the facts that over the 10-year period there has been no appreciable gain in the average number of differentiated curriculums offered, that in grades 7 and 8 the total number of periods of work offered stood about the same, that there was no increase in the number of subject groups represented, but a decrease in the margin of election permitted the pupil in these grades do not point to such efforts toward exploration and meeting individual differences as advocates of thorough-going reorganization may desire. In the same connection the fact that, as contrasted with grades 7 and 8, increments are shown for grade 9 in the total periods of work and the average number of subject groups *offered* (increments accompanied by a decrease in the number of subject groups required in this

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grade) seems to point to an abrupt change rather than a continuity of policy pursued with respect to the program of studies of the traditional final year of the elementary school and initial year of the older high-school organization.

Meeting individual differences.—The junior high school curriculum has some responsibility for serving two kinds of individual differences. In the first place, it should seek to care for individual differences in the ability of pupils to acquire those habits, skills, and attitudes which are needed by all. In the second place, it has some responsibility to provide for individual differences of certain major groups of pupils whose life purposes vary. In general, the latter are of two types: Those preparing for college and those looking forward to vocations not requiring college training. Educational leaders seem fairly well agreed that the junior high school should provide prevocational training, but only a small percentage shoulder it with the responsibility of providing the beginning of definitive occupational training.

The evidence presented in Chapters IV and V is somewhat conflicting in its implications for more adequate provision for the two types of individual differences noted. Considering English, social studies, mathematics, science, physical education, and fine arts as the fields which provide most for needs common to all, we note that the trend has been toward devoting a greater proportion of time to this group than to the group composed of manual arts, home economics, commerce, and foreign language, which in some respects are considered as contributing more directly to training of a specialized nature. Especially in grades 7 and 8, has there been a marked decrease in the percentage of total periods devoted to commerce and foreign language. Work required of all pupils is obviously that calculated to care for needs common to all. An increase is shown in the average number of periods required in all fields and in all grades except for mathematics, manual arts, and fine arts in grade 9.

Exploration and prevocational training.—As evidenced by the reductions shown for foreign language and commerce in grades 7 and 8, the tendency is definitely in the direction of postponing specific training for college and for business until the final year of the junior high school. However, the increase

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in the number of schools offering courses in junior business training and manual arts, and possibly the small increment in the number of courses in general language, indicates greater effort toward exploration and prevocational training.

Health, leisure, and social responsibility.—As to provisions for individual differences in abilities and interests in fields offered on a common-to-all basis, increments in the number of separate courses offered in the fields of physical education and fine arts point to more adequate provisions for individual differences in these fields. Furthermore, the greater number of schools requiring socializing-integrative activities indicates a tendency toward providing greater opportunity for desirable self-activity calculated to develop social responsibility, initiative, and self-government.

Greater integration of academic fields.—The increase in the number of schools offering general or integrated courses in English, mathematics, social studies, and science, however, clearly indicates a tendency toward greater economy of time, and in case the theory for such fusion is carried out in practice, acquainting of pupils with the elements of more advanced courses in these fields will bring about better articulation and help to bridge the gap between the traditional elementary-school and high-school grades.

5. EXAMPLES OF TYPICAL PROGRAMS OF STUDIES

Types shown.—In order to illustrate the trends revealed in the present study, programs for both the early and late periods are presented from two schools. The program indicated as Type I is considered as typical in many ways of the general situation. The one labeled Type II is representative in many ways of practices in schools considered as embracing to a greater extent theories advanced by educational leaders.

PROGRAM OF STUDIES

TYPE I

GRADE 7

Required work

1919-20 (Length of period, 45 minutes)		1929-30 (Length of period, 60 minutes)	
Course	Periods per week	Course	Periods per week
Grammar, composition, literature, penmanship, and spelling.....	8	English, literature, penmanship, and spelling.....	8
Mathematics.....	5	Mathematics.....	5
Geography.....	5	Social studies.....	5
Citizenship and civics.....	$\frac{1}{2}$	Physical education.....	2
Hygiene.....	$\frac{3}{4}$	Chorus.....	2
Physical education.....	2	Art.....	2
Music.....	$1\frac{1}{2}$	Manual training or home economics.....	5
Industrial work and related arts.....	$7\frac{1}{2}$	Total	29
Total	30		

Elective work

None.

None.

GRADE 8

Required work

Grammar, composition, literature, penmanship, and spelling.....	8	English, literature, penmanship, and spelling.....	8
Mathematics.....	5	Mathematics.....	5
American history.....	5	Social studies.....	5
Citizenship and civics.....	1	Physical education.....	2
Physical education.....	2	Art.....	2
Music.....	$1\frac{1}{2}$	Chorus.....	2
Total	$22\frac{1}{2}$	Manual training or home economics.....	5
		Total	29

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Elective work

1919-20		1929-30	
(Length of period, 45 minutes)		(Length of period, 60 minutes)	
Course	Periods per week	Course	Periods per week
Industrial work and related		None.	
arts.....	7½		
Design.....	7½		
Pottery.....	7½		
Printing (for girls).....	7½		
Gas engine.....	2½		
Art metal.....	5		
Penmanship and business			
forms.....	1½		
Machine operating.....	1½		
Latin.....	3½		
French.....	3½		
Spanish.....	1½		
Total.....	49½		

GRADE 9

Required work

Grammar, composition and literature, penmanship, and spelling.....	7½	Composition and literature.....	5
Physical education.....	2	Social studies.....	5
Chorus.....	1½	Physical education.....	2
		Chorus.....	2
Total.....	11	Total.....	14

Elective work

Mathematics.....	5	Mathematics.....	5
World history.....	5	Elementary science.....	5
General science.....	5	Art.....	5
Art.....	7½	Music.....	5
Music.....	7½	Manual training or home economics.....	5
Industrial work.....	7½	Commercial geography.....	2½
Commercial geography.....	5	Commercial arithmetic.....	2½
Machine operating and book-keeping.....	7½	Commercial penmanship.....	5
Latin.....	5	Typewriting.....	5
French.....	5	Latin.....	5
Spanish.....	5		
Total.....	65	Total.....	45

PROGRAM OF STUDIES

Trends illustrated by Type I.—Certain trends revealed in the study as a whole which are illustrated by changes in the single school are as follows: In grades 7 and 8 over the 10-year period grammar and composition have merged with English; courses offered as geography, history, citizenship, and civics in 1919-20 were scheduled in 1929-30 as a single course in the social studies; hygiene, which was offered as a separate course in 1919-20, has merged with physical education during the 10-year interval; separate courses in art are required at the later period. Of especial significance is the fact that while approximately 50 periods of work were offered as elective in grade 8 in 1919-20, the entire curriculum was required in this grade in 1919-30. Training in the industrial arts has not been sacrificed on this account, since it is in the required work of 1929-30, but the elimination of electives in commerce and foreign language has postponed entirely opportunities in these fields until the ninth grade.

The most typical changes in the ninth-grade program in addition to the fusion of courses noted in grades 7 and 8 have been the inclusion of social studies in the required work, a reduction in the time allotted to commercial geography, and the elimination of certain electives in foreign language. In grades 8 and 9 the reduction in the number of periods of work offered is somewhat compensated for by an increment of 10 minutes in the length of the period.

Trends illustrated by Type II.—To illustrate trends considered as more typical of special purposes advocated, changes in the program of another school are shown.

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TYPE II

GRADE 7

Required work

1919-20 (Length of period, 60 minutes)		1929-30 (Length of period, 50 minutes)	
Course	Periods per week	Course	Periods per week
English.....	3	English.....	5
Spelling and penmanship.....	2	English enrichment, library and remedial, general lan- guage (second semester for pupils looking to college).....	4
Arithmetic.....	3	Mathematics.....	5
History and geography.....	3	Social studies.....	4
Drawing.....	1	General science.....	1
Music.....	1	Physical education.....	2
Household arts or manual training.....	2	Drawing.....	1
Total.....	15	Music.....	1
		Practical arts.....	2
		Assembly and club activities.....	2
		Guidance.....	3
		Total.....	30

Electives

Latin.....	5	None.
French.....	5	
Household arts or manual training.....	5	
Total.....	15	

GRADE 8

Required work

English.....	3	English.....	5
Spelling and penmanship.....	2	Mathematics.....	5
Arithmetic.....	3	Social studies.....	4
History and geography.....	3	General science.....	1
Drawing.....	1	Physical education.....	2
Music.....	1	Drawing.....	1
Household arts or manual training.....	2	Music.....	1
Total.....	15	Practical arts.....	2
		Assembly and club activities.....	2
		Guidance.....	3
		Total.....	26

PROGRAM OF STUDIES

Elective work

1919-20 (Length of period, 60 minutes)		1929-30 (Length of period, 60 minutes)	
Course	Periods Per week	Course	Periods Per week
Latin.....	5	Latin.....	4
French.....	5	French.....	4
Household arts or manual training.....	5	Junior business training.....	4
		Additional practical arts.....	4
Total.....	15	Total.....	16

GRADE 9

Required work

English.....	4 to 5	English.....	5
Community civics.....	2	Community civics.....	3
General science.....	2	General science.....	2
Music.....	1	Physical education.....	1
		Music.....	1
Total.....	9 to 10	Assembly and clubs.....	2
		Guidance.....	3
		Total.....	17

Elective work

Algebra ¹	5	Algebra ¹	5
Business arithmetic ²	5	General mathematics ⁴	4
Penmanship and spelling ³	1	Ancient history ¹	4
Latin ¹ or.....	5	Bookkeeping ²	5
French or.....	5	Penmanship and spelling ³	2
Spanish.....	5	Latin ¹ or.....	4
Household arts or manual arts.....	5	French.....	3 or 4
Mechanical or free hand draw- ing ³	1	Practical arts ^{2 4}	2 to 8
		Total.....	36
Total.....	32		

Certain changes in the programs of Type II are of the same nature as those of Type I—the postponement of electives in the special fields until the later junior high school years, increased requirements in grades 7 and 8, and correlation of courses in mathematics and social studies. There are certain

¹ Required for college preparatory curriculum.

² Required for commercial curriculum.

³ Required for scientific curriculum.

⁴ Required for industrial curriculum.

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features of the 1929-30 program of Type II, not appearing in the other programs, however, to which especial attention is called.

Attainment of additional purposes sought.—In the first place it will be noted that in grade 7 of the 1929-30 program, a course designated as "English enrichment" is required of all pupils. During the first semester they are given library and remedial work, indicative of special efforts to inculcate habits of leisure-time enjoyment and to bring all pupils up to the level needed in the use of the mother tongue. During the second semester, however, those pupils intending to go to college are given an exploratory course in general language with a view to determining their interests and abilities in the field of foreign languages. An exploratory course is likewise offered in this grade in the field of practical arts. With their interests explored in these two fields in grade 7, opportunities for their development are provided in the electives in grades 8 and 9. Likewise among the electives in grade 8 is an exploratory course provided for those interested in commerce, which is followed by electives offering further opportunities for developing these interests in grade 9.

Another indication of the better articulation of the 1929-30 program is seen in the requirement of general science and in the provision for guidance in all three grades. The requirement of assembly and club activities for each grade may be taken as indicative of an attempt to develop social activities and group responsibilities of the junior high school pupil.

General conclusion.—Although the number of elective courses provided in this program is not great, the introduction of exploratory courses, provisions for guidance, and opportunities for continuing work in the fields explored may assist in attaining such special purposes as meeting individual differences, exploration and prevocational training, gradual transition between traditional elementary-school and high-school grades, and economy of time.

CHAPTER VII : TRENDS IN 14 COMMONWEALTH FUND SCHOOLS

1. NATURE OF THE STUDY

Plan of this chapter.—In 1924, Glass published a study of "Curriculum Practices in the Junior High School and Grades 5 and 6"¹ in which was presented a detailed examination of the curriculum in 14 centers which were "representative of the country's best practices." Through a subvention from the commonwealth fund it was possible for Glass to visit each of the cities included. Because of the widespread interest in this study and in keeping with the policy in the National Survey of Secondary Education to undertake a report of practices considered outstanding, a comparison is presented in this chapter of certain of the practices reported by Glass for the second semester of the school year 1922-23 with practices in the same schools for the second semester of the year 1930-31.

Method of the study.—Insofar as it was possible, the exact plans followed by Glass were repeated in conducting this study. A letter was addressed, requesting cooperation, to the superintendents of schools in the 14 cities following: Atlanta, Berkeley, Birmingham, Cleveland, Decatur (Ill.), Denver, Detroit, Kansas City (Mo.), Los Angeles, Okmulgee, Pittsburgh, Rochester (N. Y.), St. Louis, and Somerville (Mass.). In each case, cooperation was assured and names given of officials to whom forms could be sent. Copies of the forms as originally used were secured from Glass. Since not all items were to be repeated, an adaptation of these forms was devised and sent to officials in each of the cities. The information assembled for this study is that reported on these forms.

Limitations of this study.—Although funds were insufficient to allow a repetition of all the details included by Glass, many of the major items which he studied are included in this report. No attempt was made to gather any information

¹ Glass, James M. Supplementary Educational Monograph No. 25, the University of Chicago, Chicago, Ill.

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relative to grades 5 and 6. For grades 7, 8, and 9 data were not collected as to the units of teaching comprising each course, and, due to lack of space, some of the tables representing subject divisions of the constants and electives of the programs of studies are omitted. It is the purpose of this report, however, to indicate important comparisons with respect to the time devoted to major divisions of subject matter at the two periods, and to show in some measure the degree to which recommendations made by Glass have been carried out. The study is presented under the following chief headings: (1) The general plan of organization; (2) the required work; (3) the elective work.

1. THE GENERAL PLAN OF ORGANIZATION

Organization of school grades.—In the year 1922-23, 10 of the 14 systems are reported as organized on the 6-3-3 plan, that is, with the first six grades administered as elementary schools, grades 7 to 9 administered as junior high schools, and grades 10 to 12 as senior high schools. In the same year 3 systems had 7 years in the elementary school and 4 in the high school, while the fourteenth school had 6 years in the elementary organization and 6 years under an organization designated as the junior-senior high school. In 1930-31, only 9 systems followed the 6-3-3 plan; none was organized on the 7-4 plan, but 2 followed the 8-4 plan; 1 followed the 6-6 plan and 1 was divided between the 6-6 and 6-3-3 plans; the fourteenth school was in transition to the 6-2-3 plan of organization.

Length of school day.—In 1930-31 there was more uniformity in the length of the school day than in 1922-23. For each of grades 7, 8, and 9, the lowest school provided 270 minutes and the highest 400 minutes in 1922-23, as against 300 and 375 minutes, respectively, for the lowest and the highest in 1930-31. The average school in 1922-23 provided 325, 339, and 329 minutes, respectively, in grades 7, 8, and 9 compared to 350, 348, and 347 minutes, respectively, for these same grades in 1930-31. The tendency over the 8-year period is for a longer school day. Noon recesses or lunch periods are not included in these figures. Only 12 schools are represented in the 1930-31 averages.

PROGRAM OF STUDIES

Types of programs.—The administrative arrangement of programs according to types was not shown in Glass' study. Practices among the 14 schools in 1930-31, classified according to the definition of Koos reported in Chapter III, section 3, of this report, are presented in Table 14. The table shows that from grade 7 to grade 9 there is a decrease in the number of the single-curriculum type with a resulting increase in the constants-with-variables and the combination types. The multiple-curriculum type was employed very seldom.

TABLE 14.—The number of schools having certain administrative arrangements of programs of studies in 1930-31

Type of program	Grade 7	Grade 8	Grade 9
1	2	3	4
Single-curriculum.....	1 8½	4	.....
Multiple-curriculum.....	1	2	2
Constants-with-variables.....	4½	6½	7
Combination.....	.....	1½	5
Total.....	14	13	14

¹ In some cases the type of program indicated prevails during only 1 semester of the year's work.

² Since Kansas City was organized on the 7-4 and 6-2-3 plans, no eighth grade is represented for this system.

Kinds of curriculums.—The seven schools which employ the multiple-curriculum or the combination type of program offered an average of 5.6 curriculums in 1930-31. In this, as well as in other particulars, it will be noted that averages for the 14 schools here considered are greater than those shown in the study of trends for 60 schools in Chapters III to V. The kinds of curriculums as offered in 1930-31 are classified under six headings and presented in Table 15. The

TABLE 15.—The number of certain kinds of curriculums offered in seven schools in 1930-31

Kind of curriculum	Grade 7	Grade 8	Grade 9
1	2	3	4
College preparatory.....	2	1 4½	10
Commercial.....	1	1 2½	6
General.....	1	1 1½	4
Industrial arts.....	1	1 2½	7
Household arts.....	1	1 2½	6
Fine arts.....	.....	.....	1
Total.....	6	12½	34

¹ In some cases the type of curriculum indicated prevails in only one semester of the year's work.

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college preparatory curriculum is offered most often and the fine arts curriculum is offered least often. There is little variation in the frequency with which the commercial, general industrial arts, or household arts curriculums are offered. Only a few curriculums are offered in grades 7 and 8.

3. THE REQUIRED WORK.

Program suggested by Glass.—The number of periods to be allotted to constants, or subjects required of all pupils, in a 30-period week was recommended by Glass for the junior high school program. This suggested arrangement, together with the average number of periods of work actually required by the 14 schools in six major subject fields in 1922-23 and in 1930-31 is shown in Table 16. Prior to initial elective, which Glass thinks should be grade 7 and the first half of grade 8, English and social studies are required by the average school for a greater number of periods, and mathematics and fine arts are required for a less number of periods than that recommended, both in 1922-23 and in 1930-31. Natural science and geography and health were required less in 1922-23, but the former is required more in 1930-31 and the latter is required for the same number of periods in 1930-31 as was recommended by Glass. Although averages for social activities and guidance were not reported for 1922-23, they were required to less extent than recommended in 1930-31. Averages for health, mathematics, and fine and practical arts have tended, over the 8-year period, to approach the recommended allotments, but those for English, social studies, and natural science and geography seem to move in the opposite direction. In all cases, here and in subsequent tabulations, averages are obtained by dividing the total periods of work by the number of schools offering rather than by all 14 schools.

PROGRAM OF STUDIES

TABLE 16.—A comparison of the number of periods per week suggested by Glass as time allotments for constants of the junior high school program, with the averages computed for 1922-23 and for 1930-31

Subject field or activity	Prior to initial elective ¹			Following initial elective		
	Number of periods suggested by Glass	Number of periods found by Glass, 1922-23	Average number of periods for 1930-31	Number of periods suggested by Glass	Number of periods found by Glass, 1922-23	Average number of periods for 1930-31
1	2	3	4	5	6	7
English.....	5.0	5.2	5.4	4.0	4.8	5.5
Social studies.....	4.0	4.3	4.5	4.0	3.4	4.5
General mathematics.....	5.0	4.2	4.5	4.0	4.0	4.4
Natural science and geography.....	4.0	3.8	4.7	3.0	3.2	3.5
Health.....	3.0	2.7	3.0	3.0	2.7	3.5
Fine and practical arts.....	5.0	4.3	4.1	4.0	5.0	4.3
Social activities.....	3.0	(?)	1.2	3.0	(?)	1.4
Guidance.....	1.0	(?)	0.1	None.		
Elective.....	None.			5.0	(?)	11.0

¹ Glass suggests the second semester of grade 8 as the time for the initial elective. Included under "prior to initial elective," therefore, are averages for grade 7 and the first half of grade 8.
² These items are not reported for 1922-23.

Following initial elective, English and social studies in 1930-31 again exceed the recommendation, together with excesses for health and natural science and geography. Although mathematics and fine and practical arts also exceed the recommendation, their tendency during the 8-year period has been to approach the recommended number of periods. The greatest variance from the recommended allotment, both prior to and following the initial elective, is in the case of the social activities and guidance. They are required in only a few schools.

Number of schools requiring major subject fields.—Although Glass recommended that the first six constants indicated in the table be included in the program for each grade, data assembled in Table 17, showing the number of schools which require each subject field in each grade, indicate that in grade 9 the majority of schools do not require science, fine arts, or industrial arts at either period, and in 1930-31 mathematics was also not required by half of all schools. English and health are required in all three grades in practically all schools, while in grades 7 and 8 social studies, mathematics, fine arts, and industrial arts are also required in practically

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all schools. There is still a lack of integration in the junior high school program, judging from the differences in the requirements of grades 7 and 8 from those of grade 9.

TABLE 17.—The number of centers in which the major subject fields are required

Subject field	Grade 7		Grade 8 ¹		Grade 9	
	1922-23	1930-31	1922-23	1930-31	1922-23	1930-31
	2	3	4	5	6	7
English.....	14	14	11	13	14	14
Social studies.....	14	14	11	13	7	7
Geography.....	10	9	3	2		
Mathematics.....	14	14	11	12	9	5
Science.....	6	8	7	9	3	6
Health.....	14	14	11	13	12	13
Music.....	13	13	11	10	9	3
Art.....	12	12	10	7	4	
Industrial arts.....	12	12	10	10	5	1
Home economics.....	11	13	9	11	3	2

¹ Since Kansas City is organized on the 6-2-3 and 7-4 plans, eighth-grade work for 1930-31 is not included for this school. In 1922-23 only 11 schools reported for the eighth grade.

Number of minutes per week allotted to the constants.—A comparison of the number of minutes per week allotted to English, social studies, geography, mathematics, and science, designated as the academic fields, is offered in Figure 4. The figure represents the range and the average number of minutes included in each grade. To English, mathematics, and science a less number of minutes is devoted in all three grades in 1930-31 than in 1922-23. A less number is also devoted at the late period to social studies in grades 7 and 8, but in grade 9 a considerable increment is shown for 1930-31. Geography shows a slight increase for grade 7, but a considerable decrease for grade 8. Although the changes shown, except in the field of science, are not very great, they indicate a trend toward less attention to the academic subjects in late years.

Similar data to those just reported are shown for health, art, music, industrial arts, and home economics, designated as the special fields, in Figure 5. Again the changes shown are in most cases small. Health shows a greater number of minutes for 1930-31 in all three grades. There is very little change in music and art for grades 7 and 8, but a considerable

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decrease for each in grade 9. In the industrial arts a decrease from the early to the late period is indicated in grades 7 and

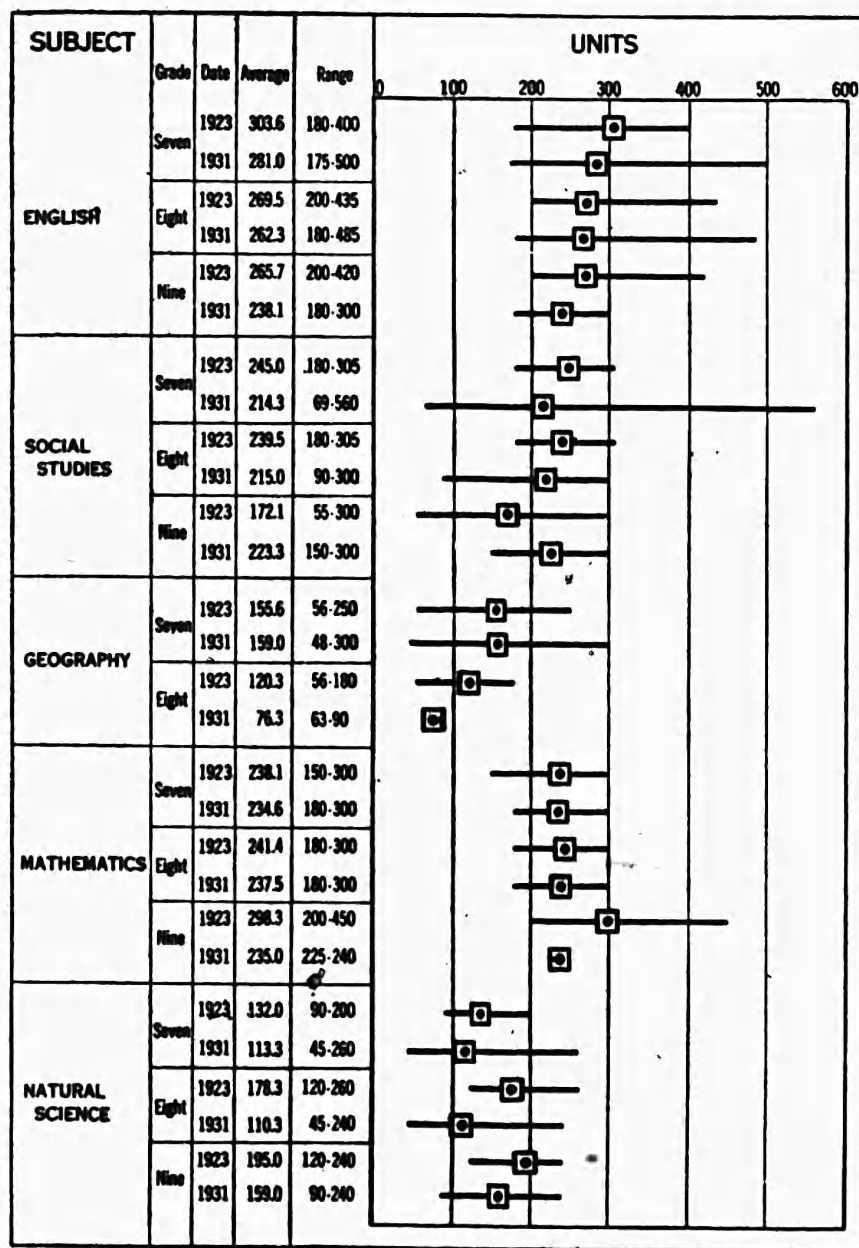


FIGURE 4.—The range and the average number of minutes per week devoted to the academic fields in grades 7, 8, and 9, 1922-23 and 1930-31

8, but an increase is shown for grade 9. There is a slight increase for home economics in grades 7 and 9, but a decrease in grade 8. Although lack of data for 1922-23 does not make

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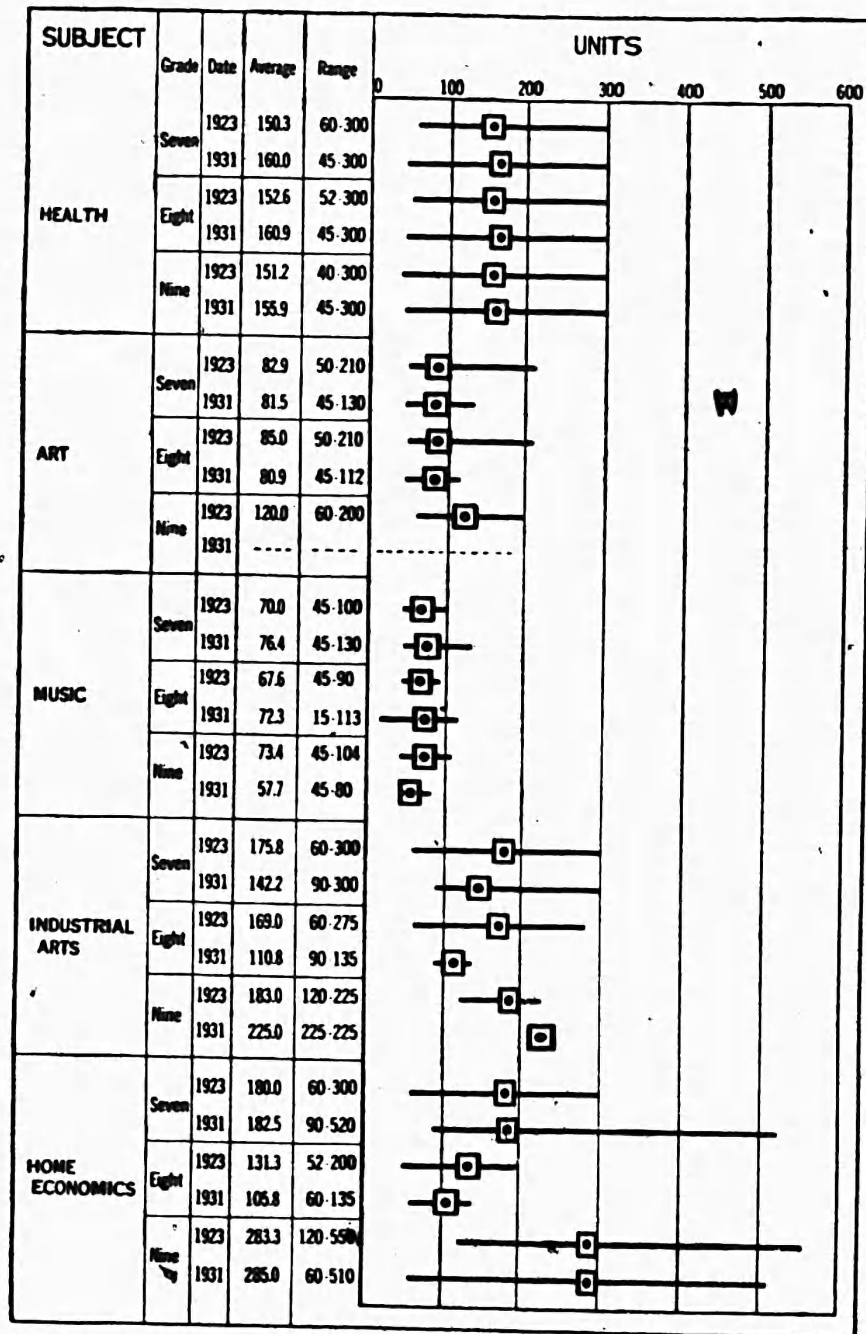


FIGURE 5.—The range and the average number of minutes per week devoted to the special fields in grades 7, 8, and 9, 1922-23 and 1930-31

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a comparison possible, it is likely that a much greater proportion of the school day is devoted to extracurriculum or socializing-integrative activities during the late period.

Time allotments to divisions of constants.—An idea as to the distribution of time among the various divisions of subject matter grouped under each of the constants may be obtained from Table 18. The range and the average number of minutes devoted to each division of the subject groups in grades 7, 8, and 9, for 1922-23 and 1930-31, are shown in the table. As is to be expected, in the light of data from the preceding sections, in most instances a decrease is shown. An exception is to be noted for health, however, which shows an increment for each grade. A less amount of time is devoted to composition, literature and reading, and spelling in the field of English in 1930-31 than in 1922-23. More time, however, is spent on grammar and on library work. In the social studies emphasis in late years is more on community and economic civics than on history. The figures for mathematics are not altogether comparable, since the divisions of general mathematics were not shown by some schools for 1930-31. For this reason the discrepancies in the figures of the late period over the early period in algebra and in geometry are shown to be greater than is the actual case.

In the field of industrial arts Glass shows averages in three instances which are not reported in the table. In grade 7 applied science was offered in one school for 180 minutes; manual training and mechanical drawing were given in one school for 60 minutes and in grades 7, 8, and 9 "option of special shops" is indicated in 2, 5, and 3 schools, respectively, for averages of 142.5, 217 and 210 minutes for these respective grades. In some cases in this field, lower averages are reported for 1930-31 than for 1922-23 but more time is devoted in 1930-31 to practical courses. It is to be noted that in home economics more time is devoted during the late period to materials relating to home and family and in the field of science an increment is shown for nature study. It must be borne in mind in interpreting these results that the average time as computed is not that devoted to each course by all 14 schools, but is the average for the schools which offer the course only.

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TABLE 18.—The number of minutes per week allotted to the subject divisions of the constants

Subject field and courses	Grade 7				Grade 8				Grade 9			
	Average		Range		Average		Range		Average		Range	
	1922-23	1930-31	1922-23	1930-31	1922-23	1930-31	1922-23	1930-31	1922-23	1930-31	1922-23	1930-31
1	3	3	4	5	6	7	8	9	10	11	13	13
ENGLISH												
Composition.....	82.4	66.6	33.0-147.0	33.0-90.0	80.4	66.5	38.0-147.0	26.0-90.0	88.9	74.9	25.0-174.0	13.0-136.0
Grammar.....	83.1	77.5	33.0-140.0	30.0-120.0	63.3	76.4	33.0-126.0	38.0-125.0	49.0	60.1	6.0-105.0	13.0-120.0
Literature and reading.....	116.8	106.2	60.0-183.0	45.0-170.0	110.3	97.5	60.0-183.0	22.5-150.0	118.4	104.4	75.0-183.0	45.0-160.0
Spelling.....	38.9	38.6	10.0-75.0	12.3-94.0	31.3	29.8	10.0-60.0	11.3-75.0	26.0	23.3	10.0-50.0	11.3-30.0
Library.....	11.3	11.3	11.3-11.3	11.3-11.3	22.5	22.5	22.5-22.5	22.5-22.5	22.5	22.5	22.5-22.5	22.5-22.5
SOCIAL STUDIES												
Ancient, medieval, and early modern history.....	103.2	154.0	22.0-260.0	16.0-204.0	123.6	130.0	45.0-187.0	40.0-204.0	300.0	60.0	60.0-210.0	52.0-225.0
Community civics.....	173.0	173.0	173.0-173.0	173.0-173.0	45.0	150.0	45.0-45.0	150.0-150.0	182.0	142.4	60.0-210.0	52.0-225.0
Economic civics.....	216.1	198.0	144.0-300.0	80.0-300.0	169.7	173.9	33.0-260.0	80.0-300.0	92.5	57.3	55.0-130.0	52.0-60.0
Vocational civics.....	55.2	64.4	50.0-85.0	60.0-68.8	110.0	110.0	45.0-204.0	45.0-204.0	92.5	57.3	55.0-130.0	52.0-60.0
HEALTH												
Hygiene.....	45.4	66.4	5.0-20.0	13.0-120.0	40.7	68.1	5.0-85.0	13.0-150.0	41.0	51.5	5.0-85.0	13.0-112.5
Physical education.....	114.4	147.6	50.0-200.0	13.0-300.0	115.6	152.1	37.0-240.0	13.0-300.0	123.8	147.4	40.0-240.0	13.0-300.0
MATHEMATICS												
Algebra.....	52.6	42.5	23.0-82.0	42.5-42.5	104.3	59.4	69.0-150.0	23.3-120.0	215.6	232.5	100.0-300.0	225.0-240.0
Arithmetic.....	192.1	220.2	100.0-275.0	99.0-275.0	165.2	204.0	75.0-275.0	120.0-300.0	175.0	175.0	100.0-225.0	100.0-225.0
Geometry.....	90.0	53.7	9.0-150.0	20.0-81.0	75.4	77.0	8.0-105.0	14.0-40.0	84.7	84.7	60.0-125.0	60.0-125.0
General mathematics.....	130.0	130.0	130.0-130.0	130.0-130.0	73.6	73.6	60.0-87.0	60.0-87.0	240.0	240.0	240.0-240.0	240.0-240.0

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SCIENCE												
General science.....	142.5	96.6	120.0-200.0	60.0-180.0	178.8	122.2	120.0-260.0	45.0-240.0	195.0	151.2	120.0-240.0	90.0-240.0
Nature study.....	60.0	75.0	60.0-60.0	75.0-75.0	62.5	62.5		-62.5				
INDUSTRIAL ARTS												
Mechanical drawing.....	40.7	57.7	17.0-60.0	48.0-65.0	72.0	48.0	6.0-120.0	48.0-48.0	75.6	63.8	75.6-75.6	63.8-63.8
General shop.....	180.0	90.0	180.0-180.0	90.0-90.0	90.0	82.5	90.0-90.0	60.0-90.0	142.5		60.0-225.0	
Machins shop.....	98.6	74.6	60.0-180.0	48.0-100.0	90.0	75.1	60.0-100.0	48.0-112.5		63.8		63.8-63.8
Woodwork.....	44.2	54.5	32.5-60.0	48.0-64.0	115.0	54.5	60.0-170.0	48.0-65.0				
Metal work.....	37.5	59.5	32.5-42.5	48.0-65.0	90.0	48.0	90.0-90.0	48.0-48.0		63.8		63.8-63.8
Electricity.....					90.0		90.0-90.0			63.8		63.8-63.8
Auto mechanics.....					90.0							
Household mechanics.....	240.0	145.0	240.0-240.0	50.0-240.0	90.0	50.0	90.0-90.0	50.0-50.0				
Printing.....		54.5		48.0-65.0	90.0	46.5	90.0-90.0	45.0-48.8				
HOME ECONOMICS												
Clothing.....	117.0	104.8	60.0-208.0	36.0-240.0	77.9	65.5	60.0-100.0	30.0-120.0	111.2	170.0	60.0-184.0	170.0-170.0
Foods.....	75.0	113.6	40.0-130.0	36.0-260.0	67.8	65.5	30.0-100.0	30.0-120.0	86.0	116.0	80.0-153.0	60.0-170.0
Home and family.....	35.4	60.0	10.0-75.0	60.0-60.0	31.7	121.3	20.0-45.0	112.5-130.0	86.0	170.0	80.0-183.0	170.0-170.0

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4. THE ELECTIVE WORK

Number of schools offering electives in each of the major subject fields.—In grade 7 there is a reduction in the number of schools offering courses in music, industrial arts, each of the foreign languages, and commerce. (See Table 19.) This diminution is especially noticeable in music and commerce. No decrease in grade 8 from the early to the late period is shown in any field, but an especially substantial increase in English is indicated. In grade 9 there are slight decreases in one or two fields, a rather significant one in the social studies, and noteworthy increments in the number of schools offering electives in mathematics and music. The increase of electives in mathematics is to be accounted for by the decrease shown in Table 17 in the number of schools requiring this subject field in 1930–31.

TABLE 19.—*The number of centers in which the major subject fields are elective, 1922-23 and 1930-31*

Subject field	Grade 7		Grade 8 ¹		Grade 9	
	1922-23	1930-31	1922-23	1930-31	1922-23	1930-31
1	2	3	4	5	6	7
English.....	1	1	1	4	2	8
Social studies.....					10	6
Mathematics.....				1	5	10
Science.....	2	2	1	1	8	8
Music.....	13	9	10	11	11	14
Art.....	3	3	5	6	11	12
Industrial arts.....	7	5	9	10	13	14
Home economics.....	5	5	8	9	13	13
Latin.....	4	3	8	8	14	13
French.....	4	3	8	8	12	12
Spanish.....	5	3	5	6	8	8
Commerce.....	6	2	10	10	13	12

¹ Since Kansas City is organized on the 6-2-3 and 7-4 plans, eighth-grade work for 1930-31 is not included for this school. In the 1922-23 data, only 11 schools reported for the eighth grade.

Number of elective courses offered in each field.—Due to lack of space, there is reported in Table 20 only the number of elective courses offered by subject fields rather than a designation of the number of each of the specific courses which is offered. The totals show a less number of courses offered in 1930–31 than in 1922–23. The most noticeable change in grade 7 is a decrease in the number of courses offered in commerce during the late period. In grade 8, there is likewise a significant decrease in this field, but a more noticeable one in industrial arts. Only small differ-

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ences are to be noted in these grades for the remaining subject fields, except for an increase in the number of courses offered in 1930-31 for grade 8 in foreign languages. Changes in grade 9 are, in most fields, greater. Rather marked decreases are noted for social studies, industrial arts, and commerce, while English, mathematics, music, art, and foreign languages show significant increments.

TABLE 20.—The number of elective courses offered in each of the major subject fields, 1922-23 and 1930-31

Subject field	1922-23			1930-31		
	Grade 7	Grade 8	Grade 9	Grade 7	Grade 8	Grade 9
1	2	3	4	5	6	7
English.....	2	1	4	1	4	12
Social studies.....			17			13
Mathematics.....			7		1	13
Science.....	2	1	10	2	1	8
Music.....	27	21	34	20	19	32
Art.....	3	5	11	3	7	17
Industrial arts.....	14	42	56	13	26	39
Home economics.....	11	22	33	12	22	28
Foreign language.....	13	21	34	15	28	40
Commerce.....	12	20	35	3	13	21
Total.....	84	133	241	69	121	223

Average number of minutes devoted to elective courses.—Lack of space also prevents the tabulation of the average number of minutes devoted to each course offered in the several major subject fields. There is presented in Table 21, however, the number of minutes devoted to certain of the important courses in each field. As in other tabulations, the averages are positive in that only the number of schools offering was divided into the total number of minutes offered. Some of the most marked increments are those shown for journalism in the field of English; for economic and vocational civics in the field of social studies; for all courses shown in music; for all courses shown in home economics; and for junior business training, in the field of commerce. Decreases of some significance, on the other hand, are to be noted for ancient and Greek history, several courses in the industrial arts, commercial geography, and stenography. In several courses there has been slight change, from early to late period, in the number of minutes allotted.

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TABLE 21.—The average number of minutes a week allotted to certain elective courses, 1922-23 and 1930-31

Subject field and courses	Grade 7		Grade 8		Grade 9	
	1922-23	1930-31	1922-23	1930-31	1922-23	1930-31
1	2	3	4	5	6	7
ENGLISH						
Journalism.....	68.8				80.0	275.0
Library practice.....				137.5	252.5	160.0
Oral English.....				48.0	84.0	96.0
Public speaking.....	68.8	63.8	68.75		275.0	275.0
SOCIAL STUDIES						
Ancient and Greek history.....					171.7	146.0
Economic civics.....					81.9	112.5
Vocational civics.....					78.8	181.3
Current events.....					27.5	51.0
MATHEMATICS						
Algebra.....					247.0	246.0
General mathematics.....					217.5	250.0
SCIENCE						
General science.....	200.0	200.0			258.6	246.7
Biology.....					250.0	250.0
MUSIC						
Band.....	76.7	85.0	100.0	105.0	76.7	105.0
Orchestra.....	103.0	117.0	110.8	152.3	108.1	149.1
Glee club.....	50.0	56.7	50.0	62.5	50.0	163.8
Chorus.....	75.0	287.0	250.0	220.2	81.7	159.5
Instrumental.....	91.4	60.3	70.0	66.0	53.3	120.3
ART						
General.....	82.9	160.8	196.8	174.7	209.1	220.0
INDUSTRIAL ARTS						
Auto mechanics.....		100.6	90.0	100.6		278.0
Electricity.....			248.4	48.0	590.0	177.7
Machine shop.....			495.0	360.0	630.0	360.0
Mechanical drawing.....	173.8	107.0	148.4	125.6	243.8	218.4
Metal.....	64.4	76.9	277.5	166.0	150.0	199.9
Printing.....	220.0	137.5	214.8	152.3	321.0	329.2
Woodwork.....	147.7	113.8	142.2	139.8	208.8	217.9
HOME ECONOMICS						
Foods.....	106.5	157.9	117.9	151.6	127.9	159.3
Clothing.....	124.1	97.1	130.3	131.9	138.3	199.3
FOREIGN LANGUAGES						
Latin.....	181.9	190.0	228.4	179.0	250.7	250.4
French.....	200.6	190.0	223.4	166.0	250.8	246.5
Spanish.....	180.5	190.0	223.0	145.0	235.6	238.0
COMMERCE						
Bookkeeping.....			117.5		233.5	280.0
Business arithmetic.....	102.5		140.0		210.0	217.0
Junior business training.....		90.0		217.0		287.5
Commercial geography.....			120.0	120.0	200.0	
Stenography.....	106.0		210.0		222.5	
Typewriting.....	112.7	90.0	160.0	131.0	191.1	263.3

5. SUMMARY OF FINDINGS

1. It must be borne in mind in considering the trends indicated for the 14 schools represented, that the practices described are those of schools selected because they were considered outstanding.

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2. In 1930-31, the average number of periods tended toward the number recommended by Glass in mathematics, social activities, and guidance; they were in the direction of a lesser number of periods in fine and practical arts; they were in the direction of a greater number of periods than those recommended in English, social studies, natural science, health, and electives.

3. There have been few changes in the number of schools requiring each subject field in grades 7 and 8; in grade 9 the majority of schools do not yet place mathematics, science, the fine and the practical arts (all of which were recommended by Glass) in the required program. In all but science, a decrease is shown for each of these fields over the 8-year period.

4. The average number of minutes devoted to required work in the major subject fields indicates less time, for the most part, to the academic fields, with gains in some of the nonacademic fields. The most significant increments are for health in all grades and for social studies in grade 9.

5. Average time allotments indicate a loss for separate courses in composition, literature and reading, ancient and Greek history, algebra, and geometry. More time, on the other hand, is being given to library, community and economic civics, health, and to the more practical courses in the industrial arts such as electricity, auto mechanics, printing, home and family.

6. The tendency to integrate the work in certain junior high school fields by combining two or more courses into a general one may be assigned as one cause for the decrease in the number of courses elective in 1930-31 as compared with 1922-23. This applies more to grades 7 and 8 than to grade 9. Increments are shown for work in this grade in several fields, most of which are nonacademic.

7. A comparison of averages in minutes allotted to elective courses shows increments in such courses as journalism, economics and vocational civics, junior business training, and all courses in music and home economics.

CHAPTER VIII : TRENDS IN 39 RECENTLY REVISED PROGRAMS

1. STATEMENT OF THE PROBLEM

Recent changes sought.—In April 1931, a request was made of 120 school superintendents, in cities varying in size and location, that they send copies of their recently revised junior and senior high school programs of studies, together with the programs in use immediately preceding revision. Through comparisons in this investigation of the two programs from the same school, it is sought to reveal the recent changes which have taken place in selected secondary schools of the country.

A selected group of schools.—The schools approached were selected on the basis of replies to a general inquiry form, returns from which were had from several thousand schools. On this form space was provided for indication as to whether revision had been made within the past five years, and if so, whether the revision was considered noteworthy. The changes revealed in this study are therefore representative of what schoolmen regarded as outstanding revisions which were made within the 5-year period immediately preceding. As is true of other investigations in this monograph, in each case the changes are actual in that comparisons are made of modifications which were made in an identical group of schools rather than a comparison of two distinct groups at different periods.

Source of the materials.—Replies were received from the majority of the schools approached, but only in the case of 39 was the information considered sufficiently complete for the purposes of this study. Of the schools represented, 4 are in cities located in the New England States, 10 represent the Middle Atlantic States, 6 the South, 15 the Middle West, and 4 schools are in cities in the far West. Nine of the cities were of more than 100,000 population according to the Federal census of 1930, 18 had between 35,000 and 100,000

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inhabitants, 8 from 10,000 to 35,000 inhabitants, and 4 were cities with fewer than 10,000 residents.

Method of conducting study.—Of the 39 schools represented, 35 sent programs for the six grades included in the secondary-school organization, or, for what we have termed the junior and senior high school grades. In the case of the remaining four, programs were received for the junior high school organization only. Data for the senior or 4-year high school organization are treated in Chapter XVIII, while the data of the present chapter represent grades 7, 8, and 9. They are treated under three main divisions as follows: (1) The general plan of organization; (2) the major fields offered and required; (3) the specific courses offered and required.

3. THE GENERAL PLAN OF ORGANIZATION

Types of grade organization.—Schools are classified in Table 22 according to the number of grades included in the elementary, junior, and senior high school organization. The figures indicate few changes as a result of revision—a slight increase in the 6-3-3 and 6-4-2 types and small decreases in the 6-2-4, 6-6, and 8-4 types. The fact that information was not sufficient for classifying six schools after revision, however, prevents any conclusions.

TABLE 22.—The number of schools having certain types of organization of grades, before and after revision

Type of organization	Before revision	After revision	Type of organization	Before revision	After revision
6-3-3.....	24	25	7-5.....		1
6-4-2.....		1	8-4.....	2	1
6-2-4.....	4	2	Unknown.....	3	6
6-6.....	4	2	Total.....	30	30
7-2-3.....	1	1			
7-1-4.....	1				

The classification of programs of studies according to types.—Again using the classification devised by Koos, as cited in Chapter III, Section 3, the arrangement of programs according to types, before and after revision, is shown in Table 23. It will be noted that, in general, slight decreases in the number of schools employing the single-curriculum, multiple-curriculum, and combination types of programs have

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resulted in increments for the number employing the constants-with-variables type. At each period, however, the single-curriculum type is employed by the majority of schools in grade 7.

TABLE 23.—The number of schools having certain types of programs of studies, before and after revision

Type of program	Grade 7		Grade 8		Grade 9	
	Before	After	Before	After	Before	After
1	3	3	4	5	6	7
Single-curriculum	28	27	20	17	1	1
Multiple-curriculum	4	3	6	5	2	1
Constants-with-variables	5	5	12	15	20	25
Combination		1	1		16	11
Unknown		2		2		2
Total	1 37	1 37	39	39	39	39

¹ Seventh grade program not secured from two schools.

The number and kinds of curriculum offered.—Since schools employing multiple-curriculum and combination types of programs offer more than one curriculum, it is of interest to note changes which have taken place in the number offered as a result of revision. A compilation of averages indicates a decrease in the number of curriculums offered as a result of revision. Before revision, the average school offered 3.6 curriculums, which was reduced to 3.2 curriculums for the average school as a result of revision.

The kinds of curriculums offered have been classified under seven headings, indicated in Table 24. The table shows decreases in the number of college preparatory, general, commercial, industrial arts, and home economics curriculums, but an increase in the offering of fine arts curriculums. Although decreases are due in some measure to a diminution in the number of schools offering the multiple-curriculum and combination types of programs, the results shown do not indicate a tendency on the parts of schools employing these two types of programs to provide, in junior high school grades, for many distinct life-purposes of the student body which a greater variety of curriculums would indicate.

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TABLE 24.—The number of junior high schools offering certain kinds of curriculums, before and after revision

Curriculum	Number of schools		Curriculum	Number of schools	
	Before (18 schools)	After (12 schools)		Before (18 schools)	After (12 schools)
College preparatory.....	12	8	Home economics.....	5	3
General.....	7	3	Normal training.....	1	1
Commercial.....	10	7	Fine arts.....		4
Industrial arts.....	8	7			

3. THE MAJOR FIELDS OFFERED AND REQUIRED

Number of schools in which certain subjects are offered and required.—In this section of the chapter it is attempted to show changes which have taken place in the total offering through presentation of data showing, before and after revision, the number of schools offering the major subject fields, the average number of periods of work offered, and the separate courses or divisions of the subject fields which are offered at the two periods. Data showing the number of schools offering and requiring the major subject fields such as English, social studies, mathematics, etc., and activities such as clubs, home room, and assembly (designated as socializing-integrative activities) are presented in Table 25. They

TABLE 25.—The number of schools in which the major subject fields are offered and required, before and after revision. (Numbers with required courses are shown in parentheses)

Subject field	Before revision			After revision		
	Grade 7 ¹	Grade 8	Grade 9	Grade 7 ¹	Grade 8	Grade 9
1	2	3	4	5	6	7
English.....	37(37)	29(29)	29(29)	37(37)	29(29)	30(30)
Social studies.....	37(37)	29(29)	34(24)	37(37)	28(28)	37(26)
Mathematics.....	37(37)	29(28)	29(20)	37(37)	28(28)	30(23)
Science.....	16(15)	28(22)	35(18)	19(19)	29(25)	37(21)
Physical education.....	37(37)	29(29)	35(24)	37(37)	29(28)	30(37)
Music.....	34(32)	26(22)	31(11)	35(32)	37(30)	34(14)
Art.....	34(28)	28(27)	25(4)	33(29)	32(28)	30(5)
Industrial arts.....	26(23)	28(20)	37(6)	25(23)	37(26)	30(8)
Home economics.....	23(20)	25(26)	25(4)	25(22)	37(25)	37(7)
Foreign language.....	4(-)	21(4)	28(-)	4(-)	21(3)	37(-)
Commerces.....	17(4)	17(4)	24(-)	(-)	13(4)	32(-)
Socializing-integrative activities.....	11(11)	11(11)	7(7)	16(16)	17(17)	15(15)

¹ Programs of studies for grade 7 were secured from only 37 schools.

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indicate that all fields except science, foreign language, commerce, and socializing-integrative activities are offered in all three grades of almost all schools. An increment is shown, as a result of revision, in the number of schools offering work in science, music, physical education, home economics, and the socializing-integrative activities. Increases are also shown for grade 9 in the social studies, art, and industrial arts. Except in foreign languages and commerce, the trend seems to be toward a greater representation of all subject fields in the offerings of grades 7, 8, and 9. The increment is most noteworthy for the socializing-integrative activities. Data for the number of schools requiring each of the major subject fields show that English, social studies, mathematics, and physical education are the courses which are most often required, followed by music, art, industrial arts, and home economics. As a result of revision, the most significant increments in required work are in the field of science and the socializing-integrative activities. Mathematics, social studies, music, physical education, industrial arts, and home economics are likewise required more in grade 9 as a result of the revision. Art is the only field in which a decrease is shown.

Average number of periods of work offered.—Indicative also of present-day trends are the changes which have taken place in the number of periods of work offered and required in the various subject fields to make room, through necessity in some cases, for the admittance of new fields. This information is shown in Table 26. It will be noted that, on the whole, increments are shown in the total offering of practically all grades for physical education, music, industrial arts, and socializing-integrative activities, all of which are members of the special fields as distinguished from the academic fields. Despite the fact that a decrease is recorded for the number of schools offering foreign language, a fuller offering seems to be provided by those schools which include it in their programs.

In some cases, averages for grade 9 show a different trend for those grades 7 and 8. For example, in grades 7 and 8 an increment is shown for home economics, but a diminution

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in the average for the same field is indicated for grade 9. Just the opposite is true, on the other hand, for art and the social studies. As will be shown later, the decreases shown for English and social studies may be accounted for in some measure through correlation of two or more divisions of a subject field into a single offering. The courses included under the designation "other" are for the most part listed as religious education in the program of studies.

In the required work, an increase is shown for science, physical education, and the socializing-integrative activities and a decrease for English, social studies, and art. In grade 9 the industrial arts and home economics are seldom required, and foreign language and commerce, except in a few schools requiring general courses, are not required at all.

TABLE 26.—*The average number of periods of work offered and required in the major subject fields, before and after revision. (Required periods are shown in parentheses)*

Subject field	Before			After		
	Grade 7	Grade 8	Grade 9	Grade 7	Grade 8	Grade 9
1	2	3	4	5	6	7
English.....	7.1(6.8)	7.2(6.5)	6.6(5.2)	6.8(6.7)	6.9(6.1)	6.3(5.1)
Social studies.....	6.9(6.9)	5.4(5.3)	4.3(2.5)	6.6(6.6)	5.2(5.2)	5.3(2.9)
Mathematics.....	4.8(4.8)	5.1(4.6)	5.9(2.4)	4.8(4.8)	5.6(4.8)	5.8(2.8)
Science.....	1.2(1.1)	2.1(1.5)	5.1(1.8)	1.5(1.4)	2.6(1.9)	4.8(2.2)
Physical education.....	2.5(2.5)	2.5(2.5)	2.1(2.0)	2.4(2.4)	2.7(2.6)	2.5(2.4)
Music.....	2.5(1.7)	3.2(1.7)	4.2(0.4)	3.1(1.7)	4.2(1.6)	5.5(0.5)
Art.....	1.8(1.7)	2.2(1.2)	3.0(0.1)	1.7(1.5)	1.9(0.9)	3.9(0.1)
Industrial arts.....	2.7(2.4)	3.7(2.2)	8.3(0.4)	2.9(2.7)	4.1(1.9)	9.6(0.6)
Home economics.....	2.7(2.4)	3.3(2.0)	6.2(0.2)	3.0(2.6)	3.7(1.8)	5.4(0.5)
Foreign language.....	0.4(-)	3.3(0.3)	10.0(-)	0.4(-)	3.7(0.2)	10.6(-)
Commerce.....		1.9(0.2)	6.3(-)	0.2(-)	1.4(0.2)	6.3(-)
Socializing-integrative activities.....	0.6(0.6)	0.6(0.6)	0.3(0.3)	1.0(1.0)	1.2(1.2)	1.1(1.1)
Other.....	0.1(-)	0.1(-)	0.1(-)			0.2(-)

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TABLE 27.—The number of schools in which certain courses in the academic fields were offered and required, before and after revision. (Numbers with required courses are shown in parentheses)

Subject field and courses	Before revision			After revision		
	Grade 7	Grade 8	Grade 9	Grade 7	Grade 8	Grade 9
1	2	3	4	5	6	7
ENGLISH						
English.....	33(33)	35(34)	30(30)	36(36)	37(36)	29(29)
Composition.....	1(1)	2(2)	—	2(2)	2(2)	2(2)
Literature.....	3(3)	7(6)	1(1)	6(6)	6(5)	4(4)
Grammar or language.....	4(4)	6(6)	—	3(3)	5(5)	1(1)
Penmanship.....	11(10)	12(9)	6(2)	9(9)	10(5)	3(—)
Spelling.....	11(10)	—	2(2)	9(9)	7(6)	2(1)
Library.....	3(3)	5(4)	4(1)	8(8)	7(7)	4(2)
Public speaking and expression.....	2(1)	3(1)	3(—)	4(2)	5(1)	2(—)
Oral English.....	—	1(1)	1(—)	2(2)	—	3(2)
Dramatics.....	1(—)	1(—)	2(—)	—	—	5(—)
Other (reviews, special English, journalism).....	—	—	4	2(2)	1	4(2)
SOCIAL STUDIES						
Social studies.....	10(10)	13(13)	10(8)	22(22)	24(24)	20(15)
Geography.....	23(23)	12(12)	2(1)	19(19)	7(7)	1(—)
History.....	16(16)	16(16)	1(—)	9(9)	10(10)	1(1)
United States history.....	9(9)	5(5)	—	3(3)	2(2)	—
World history.....	—	—	1(—)	—	—	6(—)
Ancient history.....	—	—	6(1)	—	—	4(—)
Civics.....	5(5)	10(9)	7(6)	4(4)	4(4)	3(1)
Vocational civics.....	—	3(3)	3(3)	—	1(1)	3(3)
Economics civics.....	—	2(2)	4(4)	—	—	2(2)
Community civics.....	1(1)	4(4)	6(3)	1(1)	4(4)	6(4)
Occupations.....	1(1)	2(2)	3(3)	1(1)	1(1)	4(3)
Other (medieval, European, Greek, State history).....	1(1)	1(1)	2(—)	—	1(1)	3(2)
MATHEMATICS						
Mathematics.....	17(17)	18(17)	12(9)	24(24)	24(24)	15(14)
General mathematics.....	5(5)	7(7)	6(2)	5(5)	6(6)	6(2)
Arithmetic.....	15(15)	14(13)	2(1)	8(8)	8(8)	—
Algebra.....	—	3(2)	21(7)	—	1(1)	27(6)
Other (applied, industrial, practical mathematics).....	—	3(2)	7(—)	—	2(2)	6(1)
SCIENCE						
Science.....	5(5)	9(6)	8(4)	9(8)	11(9)	10(5)
General or elementary science.....	7(6)	16(13)	28(10)	9(9)	20(15)	27(13)
Biology.....	—	—	10(3)	—	—	9(3)
Hygiene.....	2(2)	2(1)	1(1)	4(4)	2(2)	1(1)
Psychology.....	1(—)	2(—)	5(—)	1(—)	1(—)	—
Physiology.....	1(1)	2(2)	2(2)	1(1)	1(1)	1(—)
Agriculture.....	—	2(1)	1(—)	—	—	—
Nature study.....	2(2)	1(1)	—	2(2)	2(2)	—
FOREIGN LANGUAGE						
Foreign language.....	—	3(—)	5(—)	2(—)	2(—)	1(—)
General language.....	—	3(1)	—	3(—)	4(3)	—
Latin.....	1(—)	14(1)	36(—)	2(—)	16(—)	38(—)
French.....	3(—)	10(—)	22(—)	—	10(—)	26(1)
Spanish.....	—	2(—)	10(—)	—	4(—)	13(—)
German.....	1(—)	1(—)	4(—)	—	2(—)	6(—)

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4. THE SPECIFIC COURSES OFFERED AND REQUIRED

The courses offered and required in the academic fields.—Included in Table 27, are those specific courses offered in English, social studies, mathematics, science, and foreign languages, designated as the academic fields. All courses offered in three or more fields are listed. In the field of English will be noted decreases in traditional courses such as penmanship, spelling, and grammar, through correlation of such work under a general course termed "English." Increments are shown, on the other hand, in new fields of subject matter such as library, public speaking, dramatics, and oral English. Likewise among the social studies geography, history and United States history, ancient history, and civics show decreases, while the more general courses in social studies and world history have increased. This same tendency is revealed in mathematics and science by a decrease in the arithmetic offering and an increase in the course designated as mathematics in the former field, and by increments in the latter field in courses in science and general science. Few changes in the offering of foreign languages in grades 7 and 8 have taken place as a result of revision, but increases are to be noted for grade 9 in Latin, French, Spanish, and German. Likewise for the required work, English, social studies, mathematics, and science show decreases in certain of the traditional courses, resulting in an increase in generalized courses in these fields. Efforts to provide newer and richer materials may be judged from the increments shown in such courses as library, public speaking, hygiene, and general language.

The courses offered and required in the special fields.—Data of a similar nature to those tabulated for the academic fields are presented in Table 28 for the special fields, in which physical education, music, art, industrial arts, home economics, commerce, socializing-integrative activities, and "other" fields are included. Under the latter term are grouped exploratory, broadening and finding, and Bible courses. Comparisons indicate an increase of the health course in physical education, for glee club, band, orchestra, and appreciation, and for art, arts and crafts, and appreciation. Only slight changes are indicated for other courses in

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these three fields. The vocational courses have increased for the most part as a result of revision. This is especially true of mechanical drawing, woodwork, home mechanics, shop, sheet metal, and printing in the industrial arts; of home economics and homemaking in the field of home economics; and of an orientation course in junior business training in the field of commerce. The socializing-integrative activities likewise show a marked increase for all courses. For the required work, there has been an increase in the number of schools requiring health, music in grade 9, appreciation in music and art, home economics, and the socializing-integrative activities. Other courses show only slight changes.

TABLE 28.—The number of schools in which certain courses in the special fields were offered and required, before and after revision. (Numbers with required courses are shown in parentheses)

Subject field and courses	Before revision			After revision		
	Grade 7	Grade 8	Grade 9	Grade 7	Grade 8	Grade 9
1	2	3	4	5	6	7
PHYSICAL EDUCATION						
Physical education.....	24(24)	23(23)	26(26)	23(23)	24(23)	25(24)
Health.....	8(8)	8(8)	7(6)	8(8)	10(10)	8(8)
Physical education and hygiene.....	6(6)	7(6)	5(4)	2(2)	2(2)	1(1)
Health and physical training.....	1(1)	2(2)	1(1)	5(5)	3(3)	3(3)
Other (dancing, swimming).....	2(-)	2(-)	3(1)	1(1)	1(1)	3(2)
MUSIC						
Music.....	32(31)	35(31)	23(9)	32(30)	32(27)	22(18)
Chorus.....	1(1)	3(1)	5(2)	4(1)	4(1)	3(-)
Glee club.....	1(-)	3(-)	8(-)	1(-)	3(-)	10(-)
Band.....	2(-)	6(-)	8(-)	5(-)	10(-)	8(-)
Orchestra.....	3(-)	8(-)	11(-)	5(-)	9(-)	13(-)
Instrumental.....		1(-)	3(-)		2(-)	2(-)
Theory.....			2(-)			2(-)
Appreciation.....			2(-)	2(1)	2(2)	5(1)
ART						
Art.....	22(20)	25(17)	20(3)	27(22)	29(17)	24(1)
Freehand drawing.....	12(12)	13(9)	8(-)	6(6)	4(3)	6(2)
Commercial art.....		1(-)	1(-)		1(-)	1(-)
Design.....	1(1)	3(3)	3(1)		1(-)	3(1)
Arts and crafts.....					1(-)	2(-)
Appreciation.....			1(-)	2(1)	2(2)	3(1)
INDUSTRIAL ARTS						
Industrial or manual arts.....	27(25)	29(21)	13(3)	24(21)	26(14)	16(2)
Mechanical drawing.....	3(3)	8(4)	16(2)	4(4)	6(2)	24(1)
Woodwork.....	6(4)	5(1)	7(-)	4(4)	5(1)	12(-)
Shop.....	4(4)	5(3)	9(2)	5(5)	10(5)	18(3)
Machine shop.....		1(1)	2(1)			3(1)
Auto shop.....			3(-)			5(-)
Sheet metal.....	2(1)	4(1)	2(-)	2(2)	4(2)	6(-)
Electricity.....	2(1)	4(-)	1(-)	1(1)	2(1)	3(1)
Printing.....	3(2)	4(2)	6(1)	2(1)	2(1)	10(2)
Patternmaking.....			3(-)			2(-)
Vocational agriculture.....			3(-)			1(-)
Other (reed work, plumbing, etc.).....	1(1)	8(3)	3(-)	3(1)	8(1)	5(-)

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TABLE 28.—The number of schools in which certain courses in the special fields were offered and required, before and after revision. (Numbers with required courses are shown in parentheses)—Continued

Subject field and courses	Before revision			After revision		
	Grade 7	Grade 8	Grade 9	Grade 7	Grade 8	Grade 9
1	2	3	4	5	6	7
HOME ECONOMICS						
Home economics.....	10(8)	10(7)	10(2)	15(12)	16(8)	14(2)
Practical arts.....	4(4)	6(2)	2(-)	6(6)	6(4)	1(-)
Homemaking.....	4(4)	5(5)	7(-)	2(2)	7(3)	10(1)
Foods.....	10(10)	14(10)	18(2)	7(6)	9(4)	16(3)
Clothing.....	14(12)	14(9)	16(2)	12(11)	13(8)	16(1)
Other (laundry, household accounting, etc.).....		1(-)	6(-)	1(-)	2(-)	3(-)
COMMERCE						
Commerce.....	1(-)	1(-)	3(-)		3(-)	3(-)
Junior business training.....	1(-)	15(5)	15(-)		12(4)	23(-)
Typewriting.....	1(-)	2(-)	11(-)		2(-)	14(-)
Bookkeeping.....			13(-)			6(-)
Commercial arithmetic.....		3(-)	16(-)			11(-)
Other (investments, accounting, etc.).....	3(-)	3(1)	7(-)		1(-)	5(-)
SOCIALIZING-INTEGRATIVE ACTIVITIES						
Guidance.....	4(4)	5(5)	2(2)	8(8)	10(10)	10(10)
Assembly.....	4(4)	4(4)	2(2)	6(6)	6(6)	7(6)
Auditorium.....	5(4)	5(4)	4(3)	6(6)	6(6)	5(4)
Clubs.....	4(4)	4(4)	2(2)	5(5)	5(5)	6(6)
Home room.....	3(3)	3(3)	3(3)	5(5)	5(5)	6(6)
Activities.....	1(1)	1(1)		3(3)	3(3)	3(3)
Other (exploratory courses, Bible).....	2(1)	4(1)	3(-)	4(4)	4(4)	5(3)

6. SUMMARY OF FINDINGS

1. Incident to revision few changes resulted in types of grade organization or in the types on which the program was arranged. Slight increments for the constants-with-variables type are shown at the expense of the other three types of curriculums. A decrease is shown in the number of curriculums offered.

2. The number of schools offering science, physical education, music, home economics, and socializing-integrative activities has increased as a result of revision, and a decrease is indicated for the number offering commerce.

3. In the required work increments are shown in the number of schools requiring science and socializing-integrative activities. In grade 9 are also to be found increments in mathematics, social studies, physical education, music,

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industrial arts, and home economics. Art is the only field for which a decrease is shown.

4. In almost all of the nonacademic fields, namely, physical education, music, industrial arts, home economics, and the socializing-integrative activities, increments are shown for the average number of periods of work offered. Increments are also shown for grade 9 in social studies, foreign language, and art. Diminutions indicated in the academic fields are the result, in some measure, of the correlation of two or more courses.

5. Increments in the number of periods required are shown for science, physical education, and socializing-integrative activities.

6. Increments are also shown in the following courses offered within the various fields: Library, public speaking, dramatics, oral English, general courses in social studies, mathematics, science, health, world history, Latin, French, Spanish, German, glee club, band, orchestra, appreciation of music and of art, arts and crafts, mechanical drawing, woodwork, shop, and printing.

CHAPTER IX : PROGRAMS BEFORE AND AFTER JUNIOR HIGH SCHOOL REORGANIZATION

1. NATURE OF THE INVESTIGATION

Purpose and method of the study.—In the preceding chapters have been presented trends in junior high school programs of studies within the same schools over a period of years. It is the purpose of the present chapter to indicate those changes which have taken place in 36 schools when they were shifted from the traditional 8-4 or 7-4 plan of organization of grades to organization on the junior high school plan. All changes represented in the present study were made within the 5-year period, 1926 to 1931.

The study is confined to cities of less than 35,000 population according to the Federal census of 1930. As a matter of fact, two-thirds of the 36 cities had less than 10,000 population. Five cities are located in the New England States, 7 are in the Middle Atlantic section, 5 are in the South, 8 in the Middle West, and 11 are in Western States. The data may therefore be assumed to be somewhat representative of small cities or towns in all sections of the country.

Attention is called to the fact that two programs of studies are presented from each of the 36 cities—1 before and 1 after reorganization. Thus, the changes shown will be actual changes rather than differences in separate groups of communities. Furthermore, since the programs included represent reorganizations made between 1926 and 1931, only recent changes are shown.

The methods followed in the present study parallel those indicated in the preceding studies. The data will show (1) the general plan of organization within the programs represented; (2) the major fields offered and required; (3) the specific courses offered and required.

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2. THE GENERAL PLAN OF ORGANIZATION

The administrative arrangement of programs according to types.—Following the division of programs of studies into types arranged by Koos and described in Chapter III, section 3, data from the 36 schools are presented in Table 29.

TABLE 29.—*The administrative types of programs represented in grades 7, 8, and 9*

Type of program	Before reorganization			After reorganization		
	Grade 7	Grade 8	Grade 9	Grade 7	Grade 8	Grade 9
1	2	3	4	5	6	7
Single-curriculum.....	35	23	7	30	22	5
Multiple-curriculum.....			3			4
Constants-with-variables.....		1	15	4	12	17
Combination.....	1	2	9	2	2	10
Not indicated.....			2			
Total.....	36	36	36	36	36	36

It will be noted that the greatest changes are decreases in the single-curriculum type and increments in the constants-with-variables and combination types, especially in the former. Although the constants-with-variables and the combination types are those most often employed, a large number of schools is shown, even after reorganization, employing the single-curriculum type in grades 7 and 8.

Number of curriculums offered.—The average number of separate curriculums offered by schools employing the multiple-curriculum and the combination types of programs was three for each of grades 7 and 8 before reorganization and five for each of the same grades after reorganization. There were only two schools, however, at each of these periods in which a choice of curriculums was allowed. In grade 9 the average school offered 4.6 curriculums before reorganization, but after reorganization the average was almost one curriculum less, namely, 3.7 curriculums.

Kinds of curriculums offered.—As indicated in Table 29, most schools which organize the subjects into curriculums do not begin to do so until the ninth grade. Under the traditional organization, the ninth grade was a part of the 4-year

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high school and the change of this grade to the junior high school organization has seemed to affect curricular offerings very little. These facts are shown in Table 30. In this table all curriculums are classified as of five types. For

TABLE 30.—The kinds of curriculums offered in grade 9, before and after reorganization

Kind of curriculum	Number of schools offering—		Kind of curriculum	Number of schools offering—	
	Before reorganization	After reorganization		Before reorganization	After reorganization
College preparatory.....	17	17	Fine arts.....	7	3
Commercial.....	13	11	Practical arts.....	12	10
General.....	6	13	Total.....	55	54

example, the college preparatory curriculum includes those designated as scientific, academic, technical, classical, and the like. The college preparatory, commercial, and practical arts curriculums show little change, but there is a decided increase shown for the general curriculum. A decrease has taken place in the fine arts curriculum, after reorganization.

3. THE MAJOR FIELDS OFFERED AND REQUIRED

Average number of total periods of work offered.—Figure 6 shows the total number of classroom periods of work offered in all fields by the median and range of the middle 50 per cent of the schools, before and after reorganization. The figure shows that, incident to reorganization, the number of periods of work offered changed very little in grades 7 and 8. In grade 9, however, there was a decided increase after reorganization. Furthermore, the average length of period computed for the 15 schools from which data were available showed that an average period of 34.3 minutes before reorganization had increased to 48.7 minutes after reorganization. A comparison of the averages shown after reorganization with the averages shown in the first study for the 60 junior high schools in 1930–31 indicates a greater average offering of from 6 to 12 periods to be shown by the latter. It will be recalled,

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however, that the schools represented in the present study are much smaller than those in the study of trends.

Number of schools offering and requiring the major subject fields.—The status of each of 11 major subject fields, such as English, social studies, and the like, and of such activities as home room, clubs, guidance, assembly, etc. (which are designated as socializing-integrative activities), before and after reorganization, is indicated in Table 31. Organization on the junior high school plan has not affected greatly the representation of English, mathematics, and the social studies since

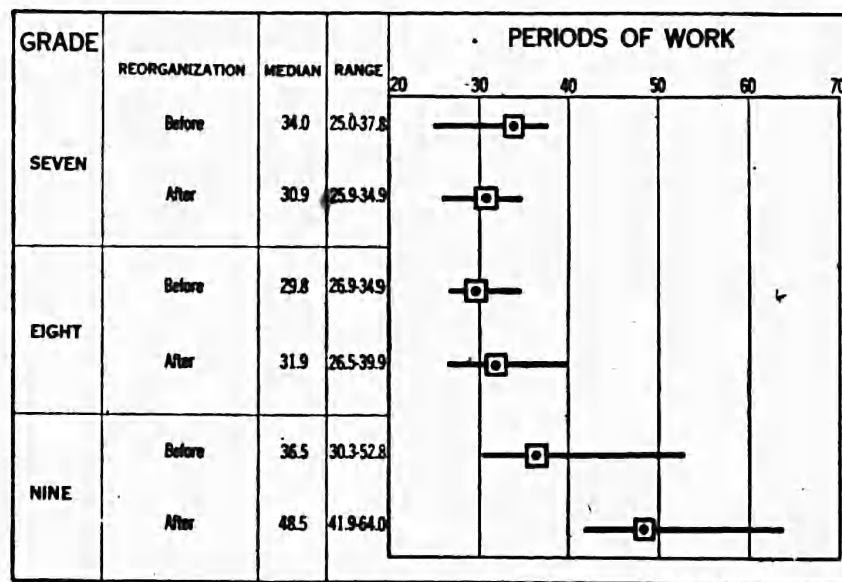


FIGURE 6.—The number of periods of work offered by the median and the range of the middle 50 per cent of the schools, before and after reorganization

they were well represented in the traditional type of organization. It has, however, afforded children attending the new type of organization much greater opportunities in the fields of physical education, industrial arts, home economics, and the socializing-integrative activities, as the increments shown in the table for these fields reveal. The greater offerings in these fields apply to all three grades, but in addition, increments for the ninth grade incident to its membership in the new type of organization, are revealed in fine arts, commerce, and social studies. The junior high school plan seems also to have caused a slight decrease in the number of schools

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requiring mathematics in this grade. Science and foreign language indicate little change incident to reorganization, except for the depression of the latter into the eighth grade under the junior high school plan.

TABLE 31.—The number of schools offering and requiring the major subject fields before and after reorganization. (Numbers with required courses are shown in parentheses)

Subject field	Before reorganization			After reorganization		
	Grade 7	Grade 8	Grade 9	Grade 7	Grade 8	Grade 9
1	2	3	4	5	6	7
English.....	36(36)	36(36)	33(33)	36(36)	36(36)	36(36)
Social studies.....	36(36)	36(36)	27(14)	36(36)	36(36)	31(16)
Mathematics.....	36(36)	36(36)	23(21)	36(36)	36(36)	34(18)
Science.....	26(25)	20(20)	28(16)	23(21)	22(18)	31(13)
Physical education.....	12(12)	13(13)	13(9)	27(26)	26(26)	26(25)
Music.....	28(27)	27(26)	16(3)	28(28)	22(22)	28(7)
Art.....	23(22)	22(21)	10(1)	24(20)	23(17)	20(5)
Industrial arts.....	13(12)	16(16)	21(2)	29(24)	28(22)	27(4)
Home economics.....	13(13)	15(14)	19(3)	27(24)	28(23)	25(5)
Foreign language.....			27(3)	1(-)	10(3)	26(2)
Commerce.....	1(-)	1(1)	15(1)		9(7)	22(2)
Socializing-integrative activities.....	5(5)	5(5)	11(5)	16(15)	17(15)	18(12)

¹ Programs from the ninth grade before reorganization are represented from 33 of the schools only.

Average number of periods offered and required in the major subject fields.—The position of the subject fields in the two types of organizations is indicated from another angle through presentation, as in Table 32 of the average number of periods of work offered and required in each field, before and after reorganization. The averages represented were secured by dividing the total periods offered in all schools by the total number of all schools rather than by the total number of schools contributing to the total periods. It will be noted that, as in the table immediately preceding, the most decided increments are shown after reorganization in the fields of physical education, industrial arts and home economics, and socializing-integrative activities. Increments for the ninth grade are likewise shown in fine arts, commerce, and social studies. Science also shows an increase after reorganization in the number of periods of work offered in grades 8 and 9.

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The most noteworthy decreases after reorganization are in the fields of English and social studies. As will be shown subsequently, however, this is due largely to correlation of the work in these fields. Mathematics also shows slight decreases in grades 7 and 8, but has the same average, before and after reorganization; in grade 9. A less number of periods of work is required in this grade, however, after reorganization.

TABLE 32.—The average number of periods of work offered and required, before and after reorganization, in each subject field. (Required periods are shown in parentheses)

Subject field	Before reorganization			After reorganization		
	Grade 7	Grade 8	Grade 9	Grade 7	Grade 8	Grade 9
1	2	3	4	5	6	7
English.....	11.7(11.7)	10.3(10.3)	7.5(6.1)	7.2(7.0)	6.4(6.3)	6.4(5.5)
Social studies.....	7.8(7.8)	7.6(7.6)	4.9(2.1)	7.1(7.1)	6.3(6.3)	5.4(2.1)
Mathematics.....	5.1(5.0)	5.1(4.8)	5.5(3.2)	4.8(4.8)	4.8(4.8)	5.5(2.5)
Science.....	2.2(2.2)	1.7(1.7)	4.9(2.5)	2.2(2.0)	2.4(1.5)	5.9(1.8)
Physical education.....	0.9(0.8)	1.0(0.8)	0.9(0.6)	2.0(1.9)	2.0(1.9)	2.1(1.8)
Music.....	1.6(1.5)	1.6(1.5)	2.4(0.1)	2.7(1.3)	2.6(1.0)	4.0(0.3)
Art.....	1.0(1.0)	1.0(1.0)	1.5(-)	1.3(1.0)	1.0(0.6)	2.2(0.2)
Industrial arts.....	0.8(0.8)	1.4(1.3)	4.7(0.6)	2.3(2.2)	2.9(2.1)	7.9(0.5)
Home economics.....	0.9(0.9)	1.0(1.0)	4.3(0.8)	2.3(2.1)	3.0(2.0)	5.4(0.5)
Foreign language.....			6.3(0.4)	0.1(-)	1.4(0.2)	5.6(0.1)
Commerce.....	0.1(-)	0.3(-)	2.6(-)	0.03(-)	0.9(0.8)	4.4(0.1)
Other (exploratory, Bible).....	0.2(0.2)	0.4(-)	0.8(0.1)	0.8(-)	1.6(-)	0.8(-)

4. THE SPECIFIC COURSES OFFERED AND REQUIRED

The academic fields.—The specific courses in English, social studies, mathematics, science, and foreign language, designated as the academic fields, which were offered and required before and after reorganization are tabulated in Table 33. All courses offered and required in as many as three schools are named in the table. All other courses are listed under "other".

In the field of English, a decided increment will be noted in grades 7 and 8 in the number of courses designated as "English," after reorganization. This is accompanied by a decided decrease in these grades in such courses as spelling, writing, reading, grammar, and language. These changes may be interpreted as an attempt, after reorganization, to correlate many courses, such as those named, under the general course of "English." Few changes are to be noted in the frequencies of such courses as literature, composition,

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oral English, and public speaking, but the reorganized schools make greater provisions for a course in the use of the library.

Likewise, in the field of social studies, mathematics, and science such general courses as "social studies," "mathematics" or "general mathematics," and "science" or "general science" appear with greater frequency after reorganization. This increment in the course "social studies" is accompanied by a decrease in separate courses in geography, history, and United States history; increments in mathematics by decreases in arithmetic and algebra; and increments in science or general science by decreases, after reorganization, in physiology and "other" courses. Although evidence is not sufficient from an examination of programs of studies alone to conclude that general terminology indicates genuine fusion, such terminology does indicate a clarification of the function of the courses.

Other tendencies to be noted in social studies are increments in grades 7 and 8, after reorganization, for the course in community civics. There are few changes for these grades in courses in civics or civil government, and for the ninth grade, in courses in vocational civics. In science, there has been an increase in biology in the ninth grade after reorganization. Foreign language shows little change for grade 9, but there is a tendency, after reorganization, to offer more exploratory courses in grade 8.

TABLE 33.—The number of schools in which certain courses in the academic fields are offered and required. (Numbers with required courses are shown in parentheses)

Subject field and courses	Before reorganization			After reorganization		
	Grade 7	Grade 8	Grade 9	Grade 7	Grade 8	Grade 9
1	2	3	4	5	6	7
ENGLISH						
English.....	19(19)	19(19)	31(31)	30(30)	29(29)	30(30)
Spelling.....	28(27)	28(24)	4(2)	15(14)	12(11)	1(-)
Writing.....	27(26)	24(23)	3(1)	12(11)	9(8)	2(-)
Reading.....	13(13)	13(13)	.....	5(5)	9(9)	.....
Grammar.....	12(12)	10(10)	4(4)	6(6)	8(8)	4(4)
Literature.....	9(9)	8(8)	5(4)	7(7)	7(7)	6(5)
Composition.....	7(7)	6(6)	4(4)	6(6)	5(5)	6(6)
Language.....	8(8)	7(7)	.....	.....	.....	.....
Library.....	.....	2(-)	3(-)	4(4)	4(3)	4(3)
Oral English.....	2(1)	1(-)	6(-)	2(1)	3(2)	3(2)
Public speaking.....	4(-)	3(-)
Other (Special English, dramatics, etc.)...	5(3)	4(2)	3(-)	2(-)	3(1)	3(-)

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TABLE 33.—The number of schools in which certain courses in the academic fields are offered and required. (Numbers with required courses are shown in parentheses)—Continued

Subject field and courses	Before reorganization			After reorganization		
	Grade 7	Grade 8	Grade 9	Grade 7	Grade 8	Grade 9
1	2	3	4	5	6	7
SOCIAL STUDIES						
Social studies.....	1(1)	1(1)	2(1)	13(13)	14(14)	8(7)
Geography.....	32(32)	18(18)	-----	22(22)	17(17)	-----
United States history.....	15(15)	16(16)	-----	11(11)	10(10)	1(-)
History.....	15(15)	17(17)	2(-)	10(10)	12(12)	2(-)
Community civics.....	2(2)	5(6)	5(3)	14(14)	13(11)	3(-)
Civics or civil government.....	5(5)	15(15)	4(3)	4(4)	13(13)	6(3)
Vocational civics.....	-----	2(2)	7(6)	-----	1(1)	9(6)
Ancient history.....	-----	-----	11(5)	-----	-----	10(3)
Vocations or occupations.....	-----	1(1)	4(2)	-----	2(2)	2(-)
World history.....	1(1)	-----	4(1)	-----	1(1)	1(-)
MATHEMATICS						
Mathematics.....	2(2)	2(2)	-----	15(15)	15(15)	6(4)
General mathematics.....	1(1)	2(1)	-----	6(6)	6(6)	2(2)
Arithmetic.....	33(33)	32(31)	1(-)	15(15)	14(14)	-----
Algebra.....	1(1)	2(2)	31(19)	-----	-----	27(11)
Shop mathematics.....	-----	-----	1(-)	-----	-----	1(-)
SCIENCE						
General science.....	1(1)	2(2)	22(11)	5(4)	17(13)	27(9)
Science.....	-----	-----	2(-)	5(5)	3(3)	5(-)
Physiology.....	13(13)	10(9)	1(1)	5(5)	2(2)	1(1)
Hygiene.....	15(15)	9(8)	2(2)	12(12)	3(3)	1(1)
Biology.....	-----	-----	3(2)	-----	-----	7(2)
Other (nature study, elementary science, etc.).....	3(3)	2(2)	6(3)	-----	1(-)	5(3)
FOREIGN LANGUAGE						
General or exploratory.....	-----	-----	-----	-----	5(2)	1(-)
Latin.....	-----	-----	27(3)	-----	3(1)	26(1)
French.....	-----	-----	9(-)	-----	2(-)	8(-)
Spanish.....	-----	-----	8(-)	1(-)	2(-)	9(-)
Other (German, Italian).....	-----	-----	2(-)	-----	1(-)	1(-)

The special fields.—Data similar to those shown for the academic fields are tabulated in Table 34 for physical education, music, art, industrial arts, home economics, and commerce, designated as the special fields. In physical education, the general course designated as "physical education" doubled in frequency in grades 7 and 8 incident to reorganization, and with a decided increment in grade 9. In the fine arts, there is a decided increment, after reorganization, in art with increments also in such courses in music as orchestra, band, music appreciation, and "other" music.

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Grades 7 and 8 participate more than does grade 9 in increments, after reorganization, in industrial arts and home economics. Courses in mechanical drawing and printing, however, show decided increments in grade 9. The greatest change in the commercial field is an increase in the number of exploratory courses which are offered in junior business training in grades 7 and 8. A more decided tendency is shown after reorganization for the inclusion of such activities as home room, assembly, clubs, guidance, and auditorium.

On the whole, the academic and special fields show similar tendencies in that changes for the most part are in attempts to provide better correlation and exploration after reorganization. This is more decided in grades 7 and 8, however, than in grade 9.

TABLE 34.—The number of schools in which certain courses in the special fields are offered and required. (Numbers with required courses are shown in parentheses)

Subject field and courses	Before reorganization			After reorganization		
	Grade 7	Grade 8	Grade 9	Grade 7	Grade 8	Grade 9
1	2	3	4	5	6	7
PHYSICAL EDUCATION						
Physical education.....	10(10)	10(10)	11(9)	19(19)	20(20)	24(22)
Health.....	3(3)	3(3)	2(2)	7(7)	6(6)	3(3)
Other (gymnasium, dancing).....		1(1)	1(-)	4(4)	4(4)	3(2)
MUSIC						
Music.....	27(26)	26(25)	9(3)	27(25)	23(20)	11(5)
Orchestra.....		1(-)	7(-)	9(-)	10(-)	13(-)
Band.....			2(-)	7(-)	8(-)	11(-)
Chorus.....			6(2)	1(1)	3(1)	4(1)
Appreciation.....	1(-)	1(-)	2(-)	4(3)	3(2)	3(1)
Other (glee club, instrumental, etc.).....		1(-)	7(-)	4(2)	8(2)	20(-)
ART						
Art.....	9(9)	8(8)	3(-)	17(14)	16(10)	7(2)
Drawing.....	8(7)	8(7)	4(2)	6(6)	6(6)	3(2)
Freehand drawing.....	6(6)	3(3)	5(2)	3(1)	1(1)	3(1)
Other (design, arts and crafts, etc.).....		1(1)	7(1)	2(-)	2(-)	3(-)
INDUSTRIAL ARTS						
Manual training or industrial arts.....	8(7)	11(10)	13(1)	14(12)	14(12)	12(1)
Mechanical drawing.....			1(-)	2(1)	3(2)	9(1)
Shop.....	2(2)	3(3)	3(-)	5(4)	8(5)	7(2)
Woodwork.....	6(6)	6(6)	5(1)	4(3)	2(-)	8(-)
Printing.....			1(-)		1(-)	5(-)
Other (electricity, welding, etc.).....			4(-)	6(2)	5(1)	12(1)

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TABLE 34.—The number of schools in which certain courses in the special fields are offered and required. (Numbers with required courses are shown in parentheses)—Continued

Subject field and courses	Before reorganization			After reorganization		
	Grade 7	Grade 8	Grade 9	Grade 7	Grade 8	Grade 9
1	2	3	4	5	6	7
HOME ECONOMICS						
Home economics.....	3(3)	4(4)	7(1)	10(9)	10(9)	14(3)
Domestic science or cooking.....	6(6)	6(5)	8(-)	9(8)	10(9)	8(3)
Domestic art or sewing.....	4(3)	5(4)	6(-)	8(7)	10(7)	9(2)
Other (homemaking, laundry, etc.).....	1(1)	1(1)	3(1)	2(1)	4(2)	1(-)
COMMERCE						
Junior business training.....			4(-)		6(3)	12(1)
Business arithmetic.....			8(-)	1(1)		8(-)
Typewriting.....		1(-)	2(-)		2(1)	8(-)
Bookkeeping.....	1(-)	1(-)	4(-)			4(-)
Other (stenography, office practice).....	1(-)	1(-)	3(-)		2(1)	4(-)
SOCIALIZING-INTEGRATIVE ACTIVITIES						
Home room.....			1(1)	9(9)	9(9)	8(8)
Assembly.....	8(5)	5(5)	3(3)	8(8)	8(8)	7(7)
Clubs.....	2(1)	2(1)	2(-)	6(6)	6(5)	5(4)
Guidance.....				5(5)	6(6)	4(4)
Other (auditorium, activities).....				4(4)	3(3)	3(3)

5. SUMMARY OF FINDINGS

1. After reorganization, a decrease is shown in the number of programs arranged on the single-curriculum plan, but an increase results for the constants-with-variables and the combination types. The average number of curriculums offered shows a decrease, incident to reorganization. Increments, after reorganization, in the number of general, as distinct from specialized offerings, seem to indicate increased attention to the needs of pupils not going to college.

2. A marked increase—from 34.3 minutes to 48.7 minutes—is shown in the length of the classroom period as a result of reorganization.

3. Little change is indicated as a result of reorganization in the number of schools offering English, mathematics, and seventh- and eighth-grade social studies. The increment is rather marked, however, for such nonacademic fields as physical education, industrial arts, home economics, and socializing-integrative activities. The number of schools offering ninth-grade social studies, fine arts, and commerce

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has also increased. Despite the recommendation of the National Committee on Mathematical Requirements in 1921, the number of schools requiring mathematics in grade 9 has decreased.

4. Changes shown in the average number of periods of work offered and required are very similar to those indicated for the number of schools offering and requiring the various fields.

5. As to the specific courses offered, increments are shown for general courses in the academic fields and physical education, and for such special courses as library, community civics, biology, appreciation of the fine arts, orchestra, band, printing, junior business training, and all of the socializing-integrative activities.

CHAPTER X : PROGRAMS IN REORGANIZED AND UNREORGANIZED SCHOOLS

1. PLAN OF THE STUDY

A comparison of programs of studies in grades 7, 8, and 9 of two groups of cities is presented in this chapter. In 23 cities which have some schools organized on the junior high school plan and some organized on the traditional 8-4 plan, a comparison is made of programs representative of each of the two types of schools; programs of studies in 30 cities organized exclusively on the junior high school plan are also compared with programs of studies from 16 cities organized exclusively on the traditional 8-4 plan. Thus data from this chapter, combined with those presented in the preceding chapter, afford a contrast of programs in grades 7, 8, and 9 just before and just after reorganization, in reorganized and in unreorganized schools under the same city administration, and between reorganized schools in one group of cities with unreorganized schools in another group of cities.

The cities having both reorganized and unreorganized schools are all of more than 35,000 population and 14 of them have more than 100,000 inhabitants, according to the Federal census of 1930. All but one of the cities represented in a comparison of 30 schools in reorganized centers with 16 schools in unreorganized centers range from 10,000 to 35,000 in population. On the other hand, two-thirds of the cities represented in the study outlined in the chapter immediately preceding, were of less than 10,000 population. Comparison is thus afforded of programs of studies in groups of cities of varying size. The geographical location of the two groups of cities included in the present study may be obtained from Table 35.

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TABLE 35.—*The geographical location of cities from which programs of studies were secured*

Section	More than 35,000 population		Less than 35,000 population	
	Unreorganized	Reorganized	Unreorganized	Reorganized
1	2	3	4	5
New England.....	5	5	7	3
Middle Atlantic.....	5	5	4	5
Southern.....	2	2	3	2
Middle West.....	7	7	5	3
West.....	4	4	11	3
Total.....	23	23	30	16

All sections are seen to be represented, but the Southern group is hardly so large as either of the other four.

The schools represented in the present study are entirely distinct from those represented in the studies immediately preceding, but the methods used in collecting and organizing the data are the same. This chapter will treat of (1) the general plan of organization of programs of studies; (2) the major subject fields which are offered and required; (3) the specific courses which are offered and required.

1. GENERAL PLAN OF ORGANIZATION OF PROGRAMS OF STUDIES

Types of programs represented.—A classification of the programs of studies according to the types defined by Koos, as given in chapter III, section 3, is presented in Table 36, for the groups of schools in cities of more than 35,000 and less than 35,000 in population. The single-curriculum type in which all pupils take the same work is employed considerably less in grades 7 and 8 of the reorganized than of the

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TABLE 36.—The administrative arrangement of programs of studies according to types in reorganized and in unreorganized schools in two groups of cities

Type of program	Cities of more than 35,000 population						Cities of less than 35,000 population					
	Unreorganized			Reorganized			Unreorganized			Reorganized		
	Grade 7	Grade 8	Grade 9	Grade 7	Grade 8	Grade 9	Grade 7	Grade 8	Grade 9	Grade 7	Grade 8	Grade 9
1	2	3	4	5	6	7	8	9	10	11	12	13
Single-curriculum.....	20	19	.....	14½	5½	.....	15	14	1	24	15	.....
Multiple-curriculum.....	1	1	5	2	3	5	.....	.....	3	.....	1	2
Constants-with-variables.....	1	1	6	2½	10½	12	1	2	5	3	13	16
Combination.....	.....	1	8	2	4	6	.....	.....	7	1	1	12
Unknown.....	1	1	4	2	.....	.....	.....	.....	.....	2	.....	.....
Total.....	23	23	23	23	23	23	16	16	16	30	30	30

¹ In some cases the type of program indicated prevails in only one semester of the year's work.

unreorganized schools in cities of more than 35,000 population, but the reverse is true in cities of less than 35,000 population. In the smaller cities it seems that in the arrangement of programs the reorganized are more conservative than the unreorganized schools. The larger reorganized schools offer a more varied program for grades 7 and 8. In both groups of cities, however, there has been a considerable shift in grade 9 for reorganized schools to the constants-with-variables and the combination types of programs.

Number of curriculums offered.—Since a choice of curriculums is provided for pupils in schools employing the multiple-curriculum and the combination type of program, it will be of interest to note differences in the number of curriculums employed in unreorganized and in reorganized schools. In cities of more than 35,000 population, the 13 unreorganized schools employing these two types of programs in grade 9 offered an average of 6.1 curriculums, while 11 reorganized schools offered an average of 4.3 curriculums in the same grade. In cities of less than 35,000 the 10 unreorganized schools offered an average of 4.5 curriculums in grade 9, while the 14 reorganized schools have an average of 3.6 curriculums in the same grade. In other words, more curriculums are

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offered for both groups of cities in the ninth grade under the 4-year high school organization than in the ninth grade under the junior high school organization.

Few schools offer the multiple-curriculum or the combination type of program in grades 7 and 8. In cities of more than 35,000 population, two unreorganized schools offer an average of 3.5 curriculums in grade 8 while seven reorganized schools show an average of 3.6 curriculums for the same grade. Since only 1 or 2 schools offer programs of this type in all other cases, averages are not shown.

Kinds of curriculums offered.—Schools employ no definite terminology in naming the curriculums which are offered. For example, 22 separate names were employed by the schools represented in this study to designate what is here termed the “college preparatory” curriculum. For the purposes of this study, all curriculums have been classified under five designations and are presented in this manner in Table 37. Only schools employing the multiple-curriculum and the combination type of program are represented.

TABLE 37.—The number of unreorganized and reorganized schools in two groups of cities presenting certain kinds of curriculums ¹.

Curriculum	Cities of more than 35,000						Cities of less than 35,000					
	Unreorganized			Reorganized			Unreorganized			Reorganized		
	Grade 7	Grade 8	Grade 9	Grade 7	Grade 8	Grade 9	Grade 7	Grade 8	Grade 9	Grade 7	Grade 8	Grade 9
1	2	3	4	5	6	7	8	9	10	11	12	13
College preparatory.....	1	2	28	3	7	14			13	1	2	18
General.....	1	2	9	3	4	8			8	1	1	11
Commercial.....	1	2	13	3	6	10			9			10
Fine arts.....			3			2			1	1	1	1
Practical arts.....	1	1	20	4	8	13			7	1	2	10
Total.....	4	7	73	13	25	47			38	4	6	50

¹ In cities of more than 35,000 population, tabulations represent 13 unreorganized and 11 reorganized schools. In cities of less than 35,000 population 10 unreorganized schools are compared with 14 reorganized schools.

In both groups of cities the college preparatory curriculum is offered more than any other. It is followed, in the order named, by the practical arts, commercial, general, and fine

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arts curriculums. The fine arts curriculum is offered, however, in only a few schools. Reorganized schools in cities of more than 35,000 show a decrease most marked in the number of college preparatory and practical arts curriculums offered. In cities of less than 35,000, however, a slightly greater number of curriculums are offered in reorganized schools. In reorganized schools the size of the city does not seem to affect materially the number of curriculums offered in grade 9, but in grades 7 and 8 the larger cities offer more curriculums. In unreorganized schools more curriculums are offered in each grade by the group of larger cities.

3. THE MAJOR FIELDS OFFERED AND REQUIRED

The total periods of work offered.—Before indicating the offering in the major subject fields, there is presented in Figure 7 the total number of periods of work offered, by grades, in the median and middle 50 per cent of schools, for both groups of cities. In almost all cases the figures show a greater number of classroom periods to be offered in reorganized schools. Exceptions are for grade 7 in cities of less than 35,000 population and grade 9 in cities of more than 35,000 population. Just why variation should occur in these cases is not clear. It must be borne in mind, however, that the period is much shorter in unreorganized schools. In cities of more than 35,000 population averages for 12 schools show a period of 50.1 minutes in reorganized and of 45.4 minutes in unreorganized schools. In cities of less than 35,000 population, reorganized schools have an average period of 50.4 minutes, while the average for unreorganized schools is 44.4 minutes.

Number of schools offering and requiring the major subject fields.—The number of reorganized and unreorganized schools in cities of more than 35,000 population which offer and require each of 11 major subject fields as well as activities such as home room, clubs, assembly, and the like (designated as "socializing-integrative activities"), are indicated in Table 38. Similar data for schools in cities of less than 35,000 population are shown in Table 39. In cities of more than 35,000 population there is little difference between reorganized and unreorganized schools in the offering and require-

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ment for grades 7 and 8 in the fields of English, social studies, mathematics, physical education, music, and art, since these subjects are required in practically all schools. In all of these cases, however, a larger number of reorganized schools offer and require these fields in grade 9. For all grades, too, a larger number of reorganized schools offer work in industrial arts, home economics, commerce, and socializing-integrative activities. While not so marked, foreign language and science

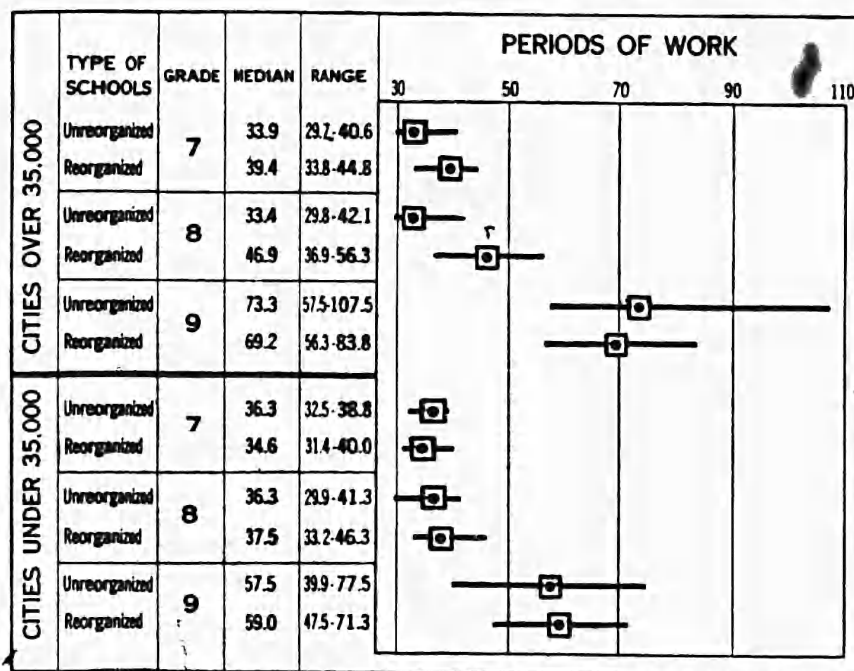


FIGURE 7.—Number of periods of work offered in the median and in the range of the middle 50 per cent of reorganized and unreorganized schools in two groups of cities

are also shown as being represented in a larger number of reorganized schools.

An examination of Table 39 indicates that differences reported as to the representation of the major subject fields in cities with more than 35,000 inhabitants apply also to the two types of schools in cities of less than 35,000 inhabitants. The unreorganized schools, however, do not compare so favorably with the reorganized schools in the smaller cities. This is true especially of the ninth-grade offering in the fields of music, art, industrial arts, home economics, social studies, and physical education.

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TABLE 38.—The number of schools in which the major subject fields are required and elective in cities of more than \$5,000 population. (Numbers with required courses are shown in parentheses)

Subject field	Unreorganized (23 schools)			Reorganized (23 schools)		
	Grade 7	Grade 8	Grade 9	Grade 7	Grade 8	Grade 9
1	2	3	4	5	6	7
English.....	23(23)	23(23)	20(20)	21(21)	23(23)	23(23)
Social studies.....	23(23)	23(23)	16(9)	21(21)	23(23)	22(14)
Mathematics.....	23(23)	23(23)	19(10)	21(21)	23(23)	21(11)
Science.....	15(15)	19(19)	20(5)	13(11)	18(15)	23(12)
Physical education.....	23(23)	23(23)	20(13)	21(21)	23(22)	23(22)
Music.....	21(21)	21(21)	19(2)	20(20)	23(19)	21(8)
Art.....	21(21)	21(21)	13(1)	20(20)	21(15)	20(3)
Industrial arts.....	21(21)	21(20)	18(-)	21(19)	23(12)	23(1)
Home economics.....	19(18)	19(17)	18(-)	21(19)	23(12)	23(1)
Foreign language.....	1(-)	2(1)	20(-)	5(2)	15(1)	22(1)
Commerce.....		1(-)	16(-)		12(3)	20(1)
Socializing-integrative activities.....	15(15)	14(14)	7(6)	17(17)	18(18)	18(17)

¹ Only 21 schools are represented in the seventh-grade program.

TABLE 39.—The number of schools in which the major subject fields are required and elective in cities of less than \$5,000 population. (Numbers with required courses are shown in parentheses)

Subject field	Unreorganized (16 schools)			Reorganized (30 schools)		
	Grade 7	Grade 8	Grade 9	Grade 7	Grade 8	Grade 9
1	2	3	4	5	6	7
English.....	16(16)	16(16)	16(16)	28(28)	30(30)	30(30)
Social studies.....	16(16)	16(15)	13(3)	28(28)	30(30)	27(15)
Mathematics.....	16(16)	16(16)	16(8)	28(28)	30(30)	29(12)
Science.....	9(9)	11(10)	16(7)	13(13)	26(23)	28(11)
Physical education.....	10(10)	10(10)	8(8)	27(27)	28(28)	25(23)
Music.....	15(15)	15(15)	8(1)	27(22)	30(22)	22(3)
Art.....	12(12)	12(12)	9(0)	24(21)	25(18)	23(1)
Industrial arts.....	10(10)	10(9)	10(1)	26(26)	27(26)	29(2)
Home economics.....	10(10)	9(8)	14(1)	26(24)	29(23)	29(2)
Foreign language.....	2(-)	3(-)	14(-)	1(-)	12(1)	29(3)
Commerce.....		2(-)	13(-)	1(-)	11(2)	22(-)
Socializing-integrative activities.....	6(6)	6(6)	2(2)	19(17)	20(16)	13(11)

¹ Only 28 schools are represented in the seventh-grade program.

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TABLE 40.—The average number of periods of work offered and required in each subject field in cities of more than 35,000. (Required periods are shown in parentheses)

Subject field	Unreorganized schools (23)			Reorganized schools (23)		
	Grade 7	Grade 8	Grade 9	Grade 7	Grade 8	Grade 9
1	2	3	4	5	6	7
English.....	10.3(10.3)	10.3(10.2)	6.6(5.0)	7.1(6.9)	6.7(6.1)	6.0(5.1)
Social studies.....	6.2(6.2)	6.1(6.1)	6.5(1.9)	5.7(5.4)	5.0(4.9)	4.8(2.5)
Mathematics.....	5.2(4.8)	5.2(4.8)	5.7(2.4)	4.7(4.7)	4.7(4.5)	4.6(2.1)
Science.....	1.3(1.3)	2.0(2.0)	5.9(0.8)	1.2(0.9)	2.1(1.6)	4.5(1.8)
Physical education.....	2.9(2.9)	3.0(3.0)	1.6(1.4)	2.7(2.6)	2.6(2.5)	3.0(2.6)
Music.....	2.2(1.8)	2.1(1.7)	7.6(0.1)	2.2(1.6)	3.1(1.1)	4.1(0.5)
Art.....	1.7(1.7)	1.7(1.7)	4.6(0.1)	2.0(1.9)	2.1(1.1)	3.3(0.2)
Industrial arts.....	3.8(2.3)	3.7(2.3)	12.0(-)	4.4(3.7)	5.9(2.0)	11.5(0.3)
Home economics.....	2.8(2.1)	2.7(2.3)	8.1(-)	4.3(3.3)	4.9(1.7)	7.6(0.3)
Foreign language.....	0.2(0.1)	0.4(-)	14.5(0.3)	1.3(0.1)	5.0(-)	11.0(-)
Commerce.....		0.1(-)	7.9(-)		1.8(0.3)	7.1(0.1)
Socializing-integrative activities.....	1.0(0.9)	1.0(0.9)	1.2(0.8)	3.4(2.5)	3.2(2.4)	2.9(2.3)

TABLE 41.—The average number of periods of work offered and required in each subject field in cities of less than 35,000 population. (Required periods are shown in parentheses)

Subject field	Unreorganized schools (16)			Reorganized schools (30)		
	Grade 7	Grade 8	Grade 9	Grade 7	Grade 8	Grade 9
1	2	3	4	5	6	7
English.....	11.2(10.8)	10.6(10.3)	6.4(5.7)	7.7(7.7)	7.3(6.9)	6.1(5.1)
Social studies.....	8.8(8.8)	7.2(6.3)	6.1(0.6)	6.9(6.9)	5.4(5.4)	5.3(2.4)
Mathematics.....	5.1(4.9)	4.9(4.9)	6.3(2.5)	4.9(4.9)	6.0(4.9)	6.1(4.9)
Science.....	1.0(1.0)	2.1(1.5)	6.1(2.0)	1.2(1.1)	2.9(2.4)	5.2(1.4)
Physical education.....	1.5(1.5)	1.5(1.5)	1.3(1.3)	2.8(2.7)	2.3(2.2)	2.0(1.7)
Music.....	2.2(2.1)	2.3(2.2)	3.3(0.1)	3.1(1.4)	3.3(1.1)	3.7(0.1)
Art.....	1.8(1.8)	1.8(1.8)	3.1(-)	1.4(1.1)	1.6(0.9)	2.7(-)
Industrial arts.....	1.5(1.5)	1.8(1.6)	8.8(0.5)	3.0(2.6)	3.8(2.7)	8.9(0.1)
Home economics.....	1.6(1.4)	1.8(1.3)	5.7(0.2)	2.8(2.4)	3.2(2.3)	5.4(0.1)
Foreign language.....	0.2(-)	0.9(-)	7.2(-)	0.1(-)	2.6(0.2)	9.0(0.1)
Commerce.....		0.8(-)	5.4(-)	0.04(-)	1.2(-)	4.9(0.2)
Socializing-integrative activities.....	0.9(0.7)	0.9(0.7)	0.3(0.3)	1.6(1.4)	1.9(1.5)	1.3(0.8)

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Number of periods of work offered and required.—The average number of periods of work offered and required in each of the major subject fields has been computed and all are presented for reorganized and for unreorganized schools of the larger and smaller cities in Tables 40 and 41. Both tables indicate that the unreorganized schools devote a greater number of periods of work to such academic fields as English, social studies, and mathematics, while in the reorganized schools more attention is given to such special fields as industrial arts, home economics, fine arts, physical education, and socializing-integrative activities. Commerce and foreign language also receive more time in grades 7 and 8 of the reorganized schools. The differences between reorganized and unreorganized schools again appear greater in the smaller group of cities, due perhaps in some measure to the fact that parents in cities in which part of the schools are reorganized demand some of the features of reorganized schools for the unreorganized schools.

4. THE SPECIFIC COURSES OFFERED AND REQUIRED

The academic fields.—In Tables 42 and 43 have been tabulated for both types of schools of the two groups of cities, courses offered and required in the fields of English, social studies, mathematics, science, and foreign language, designated as the academic fields. The most striking differences revealed between reorganized and unreorganized schools is the tendency in the former schools to offer such general courses as English, social studies, mathematics or general mathematics, and science or general science. The offering of these general courses has resulted, through correlation, in a decided reduction in reorganized schools of such courses as composition, language, grammar, literature and reading, penmanship and spelling in the field of English; of geography, history, and civics in the field of social studies; of arithmetic and algebra in the field of mathematics; and of nature study, physiology, and hygiene in the field of science. The foreign languages show an increase, especially in grade 8, of the reorganized schools.

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TABLE 42.—The number of schools in which certain courses in the academic fields are offered and required in cities of more than 35,000 population. (Numbers with required courses are shown in parentheses)

Subject field and courses	Unreorganized (23 schools)			Reorganized (23 schools)		
	Grade 7	Grade 8	Grade 9	Grade 7	Grade 8	Grade 9
1	2	3	4	5	6	7
ENGLISH						
English.....	14(14)	14(14)	17(17)	20(19)	22(21)	22(20)
Spelling.....	17(17)	16(16)	3(2)	4(4)	5(4)	2(-)
Penmanship.....	17(17)	17(17)	1(-)	8(8)	7(5)	2(-)
Reading.....	5(5)	5(5)		1(1)	1(1)	
Language.....	4(4)	4(4)				
Literature.....	14(14)	15(14)	4(3)	6(6)	5(5)	4(4)
Grammar.....	10(10)	9(9)	2(2)	2(2)	3(3)	
Composition.....	11(11)	11(11)	4(3)			1(1)
Library.....	2(2)	2(2)	1(-)	6(6)	4(4)	3(3)
Oral English.....	2(2)	3(3)	2(1)			
Other.....	1(1)	1(1)	8(-)	2(2)	4(2)	8(5)
SOCIAL STUDIES						
Social studies.....	8(8)	7(7)	4(1)	12(12)	10(10)	9(4)
Geography.....	15(15)	13(13)		10(9)	7(7)	
United States history.....	7(7)	8(8)	2(-)	4(4)	4(4)	
History.....	5(5)	6(6)	2(1)	5(4)	6(6)	3(1)
Civics or civil government.....	6(6)	10(10)		2(2)	8(7)	2(2)
Vocational civics.....			3(1)			1(1)
Community civics.....	2(2)	6(6)	10(4)		2(2)	5(4)
Vocations or occupations.....	3(3)	4(4)	1(-)	1(1)	3(3)	3(2)
Ancient history.....			9(3)			5(3)
World history.....			2(1)			3(1)
Other.....	2(2)	2(2)	1(-)		1(1)	3(2)
MATHEMATICS						
General mathematics.....	2(1)	2(1)	4(1)	3(3)	2(2)	3(2)
Mathematics.....	4(4)	4(4)	4(2)	11(11)	12(11)	7(2)
Arithmetic.....	18(18)	18(18)	3(1)	7(7)	9(9)	2(2)
Algebra.....			15(6)	2(2)	4(4)	12(7)
Other.....	2(1)	1(-)	2(-)	1(1)	1(1)	2(1)
SCIENCE						
Science or elementary science.....	6(6)	7(7)	4(3)	5(3)	9(6)	3(2)
General science.....	2(2)	5(5)	12(-)	6(6)	9(8)	16(7)
Physiology.....	7(7)	7(7)	4(-)		2(1)	
Hygiene.....	9(9)	9(9)	3(1)	3(3)	4(4)	3(2)
Nature study.....	4(4)	3(3)				
Biology.....			5(1)			5(1)
Other.....			2(-)			
FOREIGN LANGUAGE						
General language.....		1(1)	3(-)	2(1)	3(-)	1(-)
Latin.....	1(-)		16(-)	3(1)	11(1)	20(1)
French.....		1(-)	13(-)	2(-)	8(-)	13(-)
Spanish.....			12(-)	1(-)	4(-)	9(-)
German.....			10(-)		4(-)	7(-)
Italian.....			3(-)		1(-)	2(-)
Other.....			1(-)	1(-)	2(-)	2(-)

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TABLE 43.—The number of schools in which certain courses in the academic fields are offered and required in cities of less than 35,000 population. (Numbers with required courses are shown in parentheses)

Subject field and courses	Unreorganized (16 schools)			Reorganized (30 schools)		
	Grade 7	Grade 8	Grade 9	Grade 7	Grade 8	Grade 9
1	2	3	4	5	6	7
ENGLISH						
English.....	6(6)	6(6)	16(16)	24(24)	26(26)	26(26)
Spelling.....	11(11)	10(10)	3(2)	10(10)	7(6)	2(2)
Writing.....	12(12)	10(10)	2(1)	7(7)	6(5)	1(-)
Reading.....	7(7)	7(7)	-----	2(2)	1(1)	-----
Grammar.....	7(7)	7(7)	1(1)	6(6)	6(6)	3(3)
Literature.....	7(7)	7(7)	-----	14(14)	13(12)	7(7)
Composition.....	4(4)	1(1)	-----	5(5)	5(5)	6(6)
Language.....	4(4)	4(4)	-----	-----	-----	-----
Oral English.....	2(2)	2(2)	1(1)	2(2)	2(2)	3(-)
Other.....	2(1)	1(1)	3(1)	2(2)	3(3)	5(1)
SOCIAL STUDIES						
Social studies.....	3(3)	3(3)	1(-)	10(10)	10(10)	7(5)
Geography.....	12(12)	8(8)	1(-)	17(17)	5(5)	-----
United States history.....	7(7)	6(6)	-----	7(7)	11(11)	-----
History.....	5(5)	6(6)	1(-)	8(8)	9(9)	1(-)
Community civics.....	-----	1(1)	3(1)	1(1)	3(3)	5(3)
Civics or civil government.....	6(6)	5(5)	5(2)	2(2)	10(10)	7(6)
Vocational civics.....	-----	-----	-----	-----	1(1)	3(2)
Ancient history.....	-----	1(-)	7(-)	-----	-----	10(2)
Vocations or occupations.....	-----	-----	2(-)	-----	1(1)	4(1)
Current events.....	1(1)	1(1)	1(-)	5(5)	5(5)	-----
Other.....	-----	-----	4(-)	1(1)	2(2)	4(-)
MATHEMATICS						
General mathematics.....	1(1)	1(1)	3(-)	6(6)	8(7)	6(2)
Mathematics.....	1(1)	1(1)	1(-)	10(10)	12(12)	8(6)
Arithmetic.....	14(14)	14(14)	1(1)	12(12)	12(12)	-----
Algebra.....	-----	2(2)	14(7)	-----	-----	22(4)
Other.....	1(-)	-----	2(-)	1(-)	-----	2(-)
SCIENCE						
Science or elementary science.....	1(1)	2(2)	3(1)	5(5)	7(7)	4(2)
General science.....	2(2)	3(2)	12(3)	5(5)	18(15)	23(5)
Physiology.....	5(5)	5(5)	-----	1(1)	-----	1(1)
Hygiene.....	4(4)	4(4)	-----	2(2)	-----	1(1)
Biology.....	-----	-----	5(3)	-----	-----	5(-)
Nature study.....	3(3)	3(3)	-----	1(1)	1(1)	-----
Other.....	-----	-----	1(-)	1(1)	2(-)	2(-)
FOREIGN LANGUAGE						
General or exploratory.....	-----	-----	-----	-----	7(3)	-----
Latin.....	1(-)	3(-)	13(-)	1(-)	6(-)	28(1)
French.....	1(-)	1(-)	5(-)	5(-)	4(-)	14(-)
Spanish.....	-----	-----	3(-)	-----	2(-)	12(1)
German.....	-----	-----	-----	-----	1(-)	3(-)
Other.....	-----	-----	2(-)	-----	1(-)	-----

The special fields.—Data for physical education, fine arts, industrial arts, home economics, commerce, and socializing-integrative activities, of a nature similar to those indicated for the academic fields, are presented for courses in the

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special fields in Tables 44 and 45. In physical education in addition to the increment for the whole field already noted for reorganized schools, little difference appears in the nature of the courses offered in unreorganized and in reorganized schools. For the most part, a general course designated as physical education is offered, with a few schools offering separate courses designated as health and as hygiene. The same comment applies to fine arts. In industrial arts more of the reorganized schools offer courses in printing and in electricity; in home economics more reorganized schools offer a course designated as home economics. Greater provision for exploration is sought in the reorganized schools in the field of commerce, judging from the larger number of schools offering courses in junior business training. Greater care for the social interests of the child seems also shown by the reorganized schools through the greater provision of such activities as home room, clubs, guidance, and assembly.

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TABLE 44.—The number of schools in which certain courses in special subject fields are offered and required in cities of more than 35,000 population. (Numbers with required courses are shown in parentheses)

Subject field and courses	Unreorganized (23 schools)			Reorganized (23 schools)		
	Grade 7	Grade 8	Grade 9	Grade 7	Grade 8	Grade 9
1	2	3	4	5	6	7
PHYSICAL EDUCATION						
Physical education.....	19(19)	19(19)	18(13)	18(18)	20(20)	22(21)
Health.....	4(4)	4(4)	2(1)	3(3)	3(3)	2(2)
Hygiene.....	2(2)	2(2)	—	3(3)	2(2)	2(2)
Other.....	6(6)	6(6)	5(1)	3(3)	3(3)	3(1)
FINE ARTS						
Music.....	20(20)	19(19)	8(—)	20(19)	22(16)	13(6)
Orchestra.....	4(—)	4(—)	9(—)	5(—)	6(—)	7(—)
Band.....	1(—)	1(—)	7(—)	4(—)	5(—)	5(—)
Chorus.....	1(1)	1(1)	8(2)	5(2)	6(1)	8(2)
Glee club.....	1(—)	1(—)	4(—)	1(—)	—	—
Music appreciation.....	2(2)	2(2)	5(—)	—	1(1)	—
Art.....	14(14)	15(15)	9(1)	14(13)	16(9)	16(3)
Drawing.....	5(5)	4(4)	6(—)	6(6)	5(5)	1(—)
Freehand drawing.....	2(2)	2(2)	5(—)	1(1)	1(1)	2(—)
Other music.....	3(—)	3(—)	11(—)	1(—)	2(—)	1(—)
Other art.....	1(1)	1(1)	11(—)	—	—	3(—)
INDUSTRIAL ARTS						
Manual arts.....	17(16)	16(15)	6(—)	15(11)	16(7)	11(—)
Mechanical drawing.....	3(3)	3(3)	15(—)	3(3)	6(2)	10(—)
Wood work.....	2(1)	2(1)	7(—)	4(4)	5(3)	7(1)
Metal work.....	—	—	6(—)	3(3)	2(1)	5(1)
Shop.....	3(3)	4(4)	9(—)	6(5)	9(4)	9(—)
Printing.....	1(—)	1(—)	2(—)	4(4)	4(2)	7(1)
Electricity.....	1(—)	1(—)	2(—)	2(2)	2(1)	3(—)
Other.....	1(1)	1(—)	4(—)	1(1)	—	3(—)
HOME ECONOMICS						
Domestic science or cooking.....	8(7)	10(9)	10(—)	12(10)	13(8)	10(1)
Domestic art or sewing.....	8(6)	7(5)	11(—)	10(10)	12(6)	11(1)
Home economics.....	9(8)	8(7)	7(—)	9(7)	11(3)	11(—)
Other.....	4(2)	3(2)	6(—)	5(4)	4(2)	4(1)
COMMERCE						
Junior business training.....	—	1(—)	10(—)	—	7(3)	10(—)
Commercial arithmetic.....	—	—	9(—)	—	1(—)	5(—)
Typewriting.....	—	—	5(—)	—	4(—)	9(1)
Bookkeeping.....	—	—	1(—)	—	2(—)	3(—)
Other.....	—	—	8(—)	—	7(—)	9(—)
SOCIALIZING-INTEGRATIVE ACTIVITIES						
Assembly.....	7(7)	7(7)	3(3)	14(14)	13(13)	14(14)
Home room.....	2(2)	1(1)	3(3)	9(9)	6(6)	8(8)
Clubs.....	4(4)	4(4)	4(2)	12(9)	11(8)	13(9)
Guidance.....	—	—	2(2)	4(4)	4(4)	5(5)
Auditorium.....	2(2)	2(2)	—	2(2)	1(1)	—
Activities.....	1(1)	1(1)	1(1)	2(2)	2(2)	2(2)
Character education.....	1(1)	—	—	—	—	—
Conferences.....	—	—	—	1(1)	2(2)	1(1)

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TABLE 45.—The number of schools in which certain courses in the special fields are offered and required in cities of less than 35,000 population. (Numbers with required courses are shown in parentheses)

Subject field and courses	Unreorganized (16 schools)			Reorganized (30 schools)		
	Grade 7	Grade 8	Grade 9	Grade 7	Grade 8	Grade 9
	2	3	4	5	6	7
PHYSICAL EDUCATION						
Physical education.....	4(4)	4(4)	7(7)	22(22)	22(22)	22(20)
Health.....	3(3)	3(3)	1(1)	9(9)	7(7)	2(1)
Hygiene.....				5(5)	3(3)	3(3)
Other.....	3(3)	3(3)	1(1)	4(3)	5(4)	4(3)
FINE ARTS						
Fine arts.....	1(1)	1(1)		3(3)	1(1)	
Music.....	13(13)	13(13)	3(1)	21(17)	25(19)	11(2)
Orchestra.....	2(-)	2(-)	6(-)	10(-)	11(-)	13(-)
Band.....	1(1)	1(1)	5(-)	7(-)	8(-)	9(-)
Chorus.....	2(2)	2(2)	4(-)	7(3)	8(3)	10(1)
Glee club.....			3(-)	2(-)	4(-)	5(-)
Music appreciation.....	1(1)	1(1)	1(-)	2(1)	3(2)	2(-)
Other music.....	1(-)	1(-)	6(-)	4(-)	4(-)	4(-)
Art.....	5(5)	5(5)	3(-)	18(14)	20(12)	19(1)
Drawing.....	5(5)	5(5)	2(-)	5(4)	6(5)	2(-)
Freehand drawing.....	1(1)	1(1)	3(-)	3(3)	2(1)	4(-)
Other art.....	1(1)	1(1)	4(-)	4(4)	4(4)	5(-)
INDUSTRIAL ARTS						
Manual arts.....	7(7)	8(7)	4(-)	14(13)	15(12)	14(2)
Mechanical drawing.....			7(-)	3(3)	7(5)	10(-)
Woodwork.....	1(1)	1(1)	6(-)	12(8)	8(5)	9(-)
Metal work.....	1(1)	1(1)	1(-)	3(1)	5(3)	3(-)
Shop.....	1(1)		2(-)	4(4)	6(6)	8(-)
Printing.....	1(1)	1(1)		3(2)	2(-)	5(-)
Electricity.....			1(-)	3(2)	3(1)	1(-)
Other.....			7(1)		2(1)	7(-)
HOME ECONOMICS						
Domestic science or cooking.....	4(4)	6(6)	10(1)	11(10)	14(12)	11(2)
Domestic arts or sewing.....	5(5)	2(2)	10(-)	15(14)	12(10)	15(-)
Home economics.....	1(1)	1(1)	3(-)	7(6)	9(6)	8(-)
Other.....	2(2)	2(1)		3(3)	6(2)	5(-)
COMMERCE						
Junior business training.....			5(-)		7(2)	11(-)
Commercial arithmetic.....			10(-)			9(-)
Typewriting.....		1(-)	1(-)		2(-)	6(-)
Bookkeeping.....						2(-)
Other.....		2(-)	4(-)	1(-)	3(-)	5(-)
SPECIALIZING-INTEGRATIVE ACTIVITIES						
Assembly.....	5(4)	5(4)	2(2)	11(11)	11(10)	8(6)
Home room.....	3(2)	3(2)	2(2)	10(10)	9(9)	7(7)
Clubs.....	1(-)	1(-)		4(2)	5(2)	3(-)
Guidance.....				2(2)	3(3)	1(1)
Auditorium.....			1(1)	3(3)	3(3)	2(2)
Activities.....	2(2)	2(2)		1(1)	1(1)	1(1)
Character education.....				1(1)		

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5. SUMMARY OF FINDINGS

1. Both in cities of more than 35,000 and in those of less than 35,000 population, reorganized schools employ the constants-with-variables type of program to a greater extent. In both classes of cities the average number of curriculums offered is less in reorganized schools.

2. In both classes of cities a greater number of classroom periods of work is offered in reorganized schools and the period is about five minutes longer.

3. In cities of more than 35,000 population a greater number of reorganized schools offer work in industrial arts, home economics, commerce, and socializing-integrative activities. Although in grades 7 and 8 the distinction is not so great, a larger number of reorganized schools in grade 9 offer and require work in social studies, mathematics, science, foreign language, physical education, music, and art.

4. In cities of less than 35,000 population, except that the changes are greater, the same trends as those indicated for the larger reorganized schools are observable.

5. In unreorganized schools, in both classes of cities, more time is given to the academic fields, while in the reorganized the average number of periods devoted to physical education, industrial arts, home economics, fine arts, and socializing-integrative activities is greater. Again, differences in the same direction are greater in smaller cities.

6. More general or correlated courses are offered in reorganized than in unreorganized schools. A greater offering is also shown for reorganized schools of such courses as printing, electricity, home economics, junior business training, and all socializing-integrative activities.

DIVISION II : THE SENIOR OR 4-YEAR HIGH SCHOOL
PROGRAM OF STUDIES

CHAPTER XI : RECENT TRENDS IN 152 PROGRAMS
THE NATURE OF THE PROJECT

1. REASONS FOR THIS STUDY

To say that the American high school has undergone many changes within the past two decades has become almost platitudinous. Few comparative studies, however, present factual evidence on a Nation-wide basis, of the specific nature of changes which have taken place in identical schools. This is especially true as it relates to the small or medium-sized schools, which, although numerically constituting a larger percentage of the total number of high schools, do not have accessible, as extensively as do those in the larger cities, records of their early administrative and curriculum practices.

The purpose of the present study is to show changes over a period of years in senior or 4-year high school programs of studies in two groups of cities which were reported in 1920 as having a population of from 2,500 to 20,000. Such a study is made possible through the use of data for 1914-15 and 1924-25 which are reported in an investigation made by Bradley,¹ and through first-hand collection of data for 1930-31 from the same schools for which the early practices are reported. Attention is specifically called to the fact that the trends revealed are actual changes which have taken place within identical schools rather than variations in practice among different groups of schools.

2. SOURCES OF THE DATA

Source of Bradley's data.—In the spring of 1925, Bradley secured printed or mimeographed copies of programs of studies current for that year directly from superintendents

¹ Bradley, Raymond J. The American High-School Program of Studies. Ph. D. thesis, 1929. The University of Minnesota.

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and high-school principals of 152 cities within the population range already indicated. The source of the 1914-15 data which he secured for comparative purposes from 54 schools, Bradley describes as follows:

An especial attempt was made to secure the earlier programs from the schools which were represented in the later study with the result that 40 of the 54 programs are from schools included in both lists. This large degree of identity in the two lists insures that comparisons will show changes rather than differences between two different sets of schools. That the two groups are relatively similar in size is evidenced by the fact that the population of the median city selected for the study of practices in 1914 was 6,667 and the population of the median city selected in 1924 was 5,364 according to the Federal census [estimate] of 1924.

Source of more recent data.—For the purposes of the present study, printed or mimeographed copies of current programs of studies were requested during the second semester of the school year 1930-31 from city superintendents of schools both in the 54 schools represented by programs for 1914-15 and in the 152 schools represented by programs for 1924-25. That hearty cooperation was given is indicated from the fact that the information requested was received from 148 of the group of 152 schools and from all members of the group of 54 schools. Thus, the data assembled for this study offer opportunity for noting trends in programs of studies from 54 schools in cities of between 2,500 and 20,000 population over a period of 16 years and from 152 schools within the same population range over a period of 6 years.

In most instances printed or mimeographed programs are the sources of the tabulations for 1931. If not available in such form, the data represent information assembled by local school officials in the manner suggested by a sample program of studies enclosed with the original letter of request. Data were secured for grade 9 whether or not it was a part of the junior high school organization. Many of the systems had effected junior high school reorganization during the intervening period.

Size of cities.—The cities of Group I, representing 54 cities, had an average population of 8,922 by the Federal

PROGRAM OF STUDIES

census of 1930 as compared with 6,667 computed by Bradley for 1915; the cities of Group II, comprising 152 cities (only 148 of which are represented with 1930-31 programs), had an average of 9,670 in 1930 as compared with 5,364 for 1925. The trends shown will therefore typify the high school of medium size rather than all high schools of the country. The communities represented show a normal growth over the periods of time represented and the changes shown may be considered normal to such growth.

Sections represented.—The geographical areas represented by the 54 schools of Group I and by the 152 schools of Group II, for the periods 1914-15, 1930-31 and 1924-25, 1930-31, are shown in Table 46. For each period there is a moderately representative sampling of the States from each geographical section.

3. ORDER OF PRESENTING THE DATA

General outline.—The remarkable increase in the enrollment of the high schools, an increase represented to a considerable extent within the 16-year period covered by the present study, has resulted in a redefinition of the functions of the high school in terms of the needs of society and of the individual rather than in terms of college entrance. Just what changes have been brought about in plans of organization for administering the program, in the extent and nature of the subjects offered, and in the extent and nature of the subjects required of all pupils in order that these new educational purposes may be accomplished will here be considered. Chapter XII deals with the general plan of organization, Chapter XIII with the total offering, and Chapter XIV with the required work in the schools represented at the two periods. As has already been pointed out, all but 14 of the group of 54 schools for which 1914-15 and 1930-31 practices are compared are represented in the group of 152 schools for which 1924-25 and 1930-31 practices are compared. The schools representing the 16-year period are therefore so nearly comprised by those representing the 6-year interval that, wherever possible, data for the two groups parallel each other in the plan of presentation followed.

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TABLE 46.—*Distribution of two groups of cities whose programs of studies are represented*

Geographical area and States represented ¹	Group I		Group II	
	1914-15 (54 schools)	1930-31 (54 schools)	1924-25 (152 schools)	1930-31 (148 schools)
1	2	3	4	5
NORTH				
Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, Ohio, Oklahoma, South Dakota, Wisconsin.....	21	21	61	58
SOUTH				
Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee, Texas, Virginia, West Virginia.....	12	12	32	31
EAST				
Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont.....	15	15	42	42
WEST				
Arizona, California, Colorado, Idaho, New Mexico, Oregon, Washington, Wyoming.....	6	6	17	17
Total.....	54	54	152	148

¹ The States are assembled in each area according to the grouping employed by Bradley.

CHAPTER XII : RECENT TRENDS IN 152 PROGRAMS
THE GENERAL PLAN OF ORGANIZATION

1. PURPOSE OF THE CHAPTER

Of equal importance with the nature of the subjects which are given a place as required or elective in the program of studies is the extent to which administrative plans enable the pupil to make contact with those fields of organized experience, usually called "subjects," which are best suited to social and individual needs. Three phases of organization are considered in this chapter which may be determinative to a greater or less degree of the extent to which the pupil is exposed to those subjects in the program which come nearest meeting these needs and interests. These phases are treated in the order enumerated: (1) The administrative grouping of school grades; (2) the administrative arrangement of programs of studies according to types; (3) the organization of courses into curriculums (where programs are of the type characterized by such arrangement).

2. THE ADMINISTRATIVE GROUPING OF SCHOOL GRADES

Before the beginning of the period represented in this study, educational leaders were pointing out that the redefined functions of the American secondary school can best be realized through reorganization of grades on other than the traditional 8-4 basis. It is therefore of interest to note the extent to which their arguments have borne fruit as revealed through changes in plans of organization that have taken place within the schools represented in this study. Since data for 1914-15 are not available, there is represented in Table 47 the different types of organization in operation only in the 152 and 148 schools representing the 1924-25 and 1930-31 periods, respectively. In general, the table reveals that at the end of the 6-year period, the proportion of schools operating either on the 6-3-3, 6-6, 6-2-4, or 5-2-4 plan of organization had increased from about one-half to about three-fifths of the total number.

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TABLE 47.—The number of schools having certain types of organization of school grades in 1924-25 and 1930-31

Type of organization	1924-25 (150 schools)		1930-31 (148 schools)	
	Number	Percent- age	Number	Percent- age
1	2	3	4	5
6-3-3.....	27	18	45	30
6-6.....	9	6	22	15
6-2-4.....	34	23	23	16
5-2-4.....	3	2	0	0
Total reorganized.....	73	49	90	61
8-4.....	50	33	45	30
7-4.....	11	7	6	4
Total unreorganized.....	61	40	51	34
Other form or not listed.....	16	11	7	5
Total all schools.....	150	100	148	100

Especially noteworthy are the increments in the number of schools shifting to the 6-6 and 6-3-3 types of organization, for the most part at the expense of schools operating on the 6-2-4 and 5-2-4 plans of organization. It seems that organization on the 6-2-4 and 5-2-4 plan is often merely a preliminary step toward reorganization on the 6-3-3 or 6-6 plan.

3. THE ADMINISTRATIVE ARRANGEMENT OF PROGRAMS
ACCORDING TO TYPE

Types defined by Koos.—The subject offerings which go to make up the program of studies are, for the purpose of facilitating proper selection on the part of the individual pupil, arranged administratively in different ways. Koos,¹ distinguishes four types of subject arrangements, or programs of studies, as follows:

1. *The single-curriculum type* in which all pupils take identical work.

2. *The pure multiple-curriculum type*, providing for two or more curriculums to be pursued by as many groups of pupils, and which, once being elected, are fully prescribed.

3. *The constants-with-variables type*, in which, without formal classification into curriculums, are listed certain

¹ Koos, Leonard V. *The American Secondary School*. Boston, Ginn & Co., 1927. pp. 518-521.

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required subjects to be pursued by each pupil enrolled in a grade, and certain additional elective subjects from which he may choose under guidance.

4. *The combination type*, which "is a hybrid of the two types last illustrated, its characteristics being drawn from both. It provides for two or more curricula, as does the pure multiple-curriculum type and, at the same time, allows for election of a part of the work during one or more of the four years."

Comparison by periods.—The frequency with which the four types enumerated appear in the two groups of schools is indicated in Table 48, by number and by percentage, respectively, for the intervals previously reported, that is, 1914-15 to 1930-31 and 1924-25 to 1930-31. With respect to the specific types, the total of all geographical sections for the schools of both Groups I and II, shows that while in 1914-15 and 1924-25 a few schools employed the single and the pure multiple-curriculum types, by 1930-31 both these types had disappeared entirely. For both groups, therefore, at both periods, most schools employ either the constants-with-variables or the combination type of program. Although for the early period in both groups the latter type was favored in the ratio of approximately 2 to 1, the later period shows a slight decrease in this ratio at the expense of the combination type.

Variations by sections.—The preference for one or the other of the two types varies, however, as do the nature of the shifts, when the four geographical areas are considered separately. In the East a more decided preference is shown for the combination type of program, while the South, on the other hand, shows a slight preference for the constants-with-variables type. In these more conservative sections there have been few shifts in types of program in the schools representing either the 16-year or the 6-year interval.

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TABLE 48.—The number and percentage by geographical divisions of two groups of schools in which each of four types of programs of studies was in use: 1914-15 and 1930-31, 1924-25 and 1930-31

Type of program of studies	Group I (54 schools)				Group II (152 schools)			
	1914-15		1930-31		1924-25		1930-31	
	Num-ber	Per-cent-age	Num-ber	Per-cent-age	Num-ber	Per-cent-age	Num-ber	Per-cent-age
1	2	3	4	5	6	7	8	9
EAST								
Constants-with-variables.....	3	20.0	-----	-----	3	7.1	3	7.1
Combination.....	12	80.0	15	100.0	39	92.9	39	92.9
Total.....	15	100.0	15	100.0	42	100.0	42	100.0
SOUTH								
Single.....	1	8.3	-----	-----	-----	-----	-----	-----
Multiple.....	-----	-----	-----	-----	1	3.1	-----	-----
Constants-with-variables.....	7	58.4	7	58.3	17	53.2	17	54.8
Combination.....	4	33.3	5	41.7	14	43.7	14	45.2
Total.....	12	100.0	12	100.0	32	100.0	31	100.0
NORTH								
Multiple.....	2	9.5	-----	-----	1	1.6	-----	-----
Constants-with-variables.....	6	28.6	13	61.9	19	31.2	25	43.1
Combination.....	13	61.9	8	38.1	41	67.2	33	56.9
Total.....	21	100.0	21	100.0	61	100.0	58	100.0
WEST								
Constants-with-variables.....	1	16.7	2	33.3	3	17.6	7	41.2
Combination.....	5	83.3	4	66.7	14	82.4	10	58.8
Total.....	6	100.0	6	100.0	17	100.0	17	100.0
ALL SECTIONS								
Single.....	1	1.9	-----	-----	-----	-----	-----	-----
Multiple.....	2	3.7	-----	-----	2	1.3	-----	-----
Constants-with-variables.....	17	31.5	22	40.7	42	27.6	52	35.1
Combination.....	34	62.0	32	59.3	108	71.1	96	64.9
Total.....	54	100.0	54	100.0	152	100.0	148	100.0

In the case of the Northern section, however, consisting of schools in those States within the arc of the North Central Association of Colleges and Secondary Schools, there has been a decided shift in the representation of the two types. For the 54 schools in Group I, the 16-year interval reveals a complete reversal from preference for the combination type at the beginning of the period, to a no less decided preference for the constants-with-variables type in 1930-31. For the 152 schools of Group II, the combination type is still favored in 1930-31, but the constants-with-variables type has, over the 6-year interval, obtained a significant increment at its expense. The trends for the schools of the Western section

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are very similar to those shown for the Northern section, although not so many schools are represented.

4. THE ORGANIZATION OF COURSES INTO CURRICULUMS

Number of curriculums offered.—Schools in which the multiple-curriculum or combination type of program is employed should obviously offer separate curriculums arranged to care for the life purposes of each major group represented in the school. An idea of the extent to which these various purposes are cared for in the schools represented may therefore be gained from a consideration of the number and kinds of curriculums offered. Data as to the number of separate curriculums offered, for Groups I and II, are presented in Table 49.

Considering the total for all geographical sections, in the 54 schools comprising Group I, the average number of curriculums has increased from 3.85 to 4.72 over the 16-year period. In other words, the average school of Group I offered about five specialized curriculums in 1930-31. Practically the same average is shown for 1930-31 by the 148 schools of Group II, but there has been little increase between 1924-25 and 1930-31.

TABLE 49.—The number of 4-year curriculums offered by two groups of senior or 4-year high schools: 1914-15 and 1930-31; 1924-25 and 1930-31

Schools and period	Number of curriculums										Total number of curriculums	Total number of schools	Average number of curriculums
	2	3	4	5	6	7	8	9	10	More than 10			
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Group I:													
1914-15	4	10	10	5	2	2					131	34	3.85
1930-31	1	5	12	4	5	4	1				151	32	4.72
Group II:													
1924-25	12	19	33	18	13	5	3	2	1	2	495	108	4.58
1930-31	3	22	36	9	11	8	4	1	1	1	445	96	4.64

Greatest number in Western section.—All geographic sections contribute to the increments shown for the combined schools of Group I over the 16-year period. Considered separately, the greatest gains are shown for the schools in

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the Southern and Western groups. On the other hand, over the 6-year period the schools comprising these same sections in Group II show a reduction in the average number of curriculums offered. In all instances, the schools in the Western section offer the greatest number of curriculums, with an average of almost seven curriculums offered in 1930-31. The average number of curriculums offered in each of the three remaining geographical sections is approximately the same for 1930-31.

Names of curriculums offered.—Some idea as to the future life purposes of pupils which schools employing the combination type of programs aim to serve may be had from a consideration of the names given to the different curriculums which are offered. Although quite a variety of names have been employed to designate curriculums, all have been combined in Table 50 under eight major types. In this table are shown the number of separate titles which are combined within each of the major types of curriculums designated, and the number and percentage of schools offering a curriculum of a title included within each designated type.

TABLE 50.—A comparison of the relative frequency with which various kinds of curriculums were offered in two groups of cities: 1914-15 and 1930-31; 1924-25 and 1930-31

Kind of curriculum	Group I ¹						Group II ²					
	Number of separate names employed		Number of curriculums offered		Percentage of all curriculums		Number of separate names employed		Number of curriculums offered		Percentage of all curriculums	
	1914-15	1930-31	1914-15	1930-31	1914-15	1930-31	1924-25	1930-31	1924-25	1930-31	1924-25	1930-31
1	2	3	4	5	6	7	8	9	10	11	12	13
College preparatory.....	15	18	61	53	46.6	35.1	25	36	204	168	41.2	35.5
Commercial.....	2	5	24	32	18.3	21.2	6	16	107	106	21.7	23.8
General.....	3	4	23	24	17.6	15.9	5	7	57	72	11.8	16.2
Manual or practical arts.....	6	8	9	12	6.9	7.9	13	12	39	35	7.9	7.9
Home economics.....	2	3	4	12	3.0	7.9	9	5	35	32	7.1	7.2
Agriculture.....	1	2	3	9	2.3	6.0	3	2	23	19	4.6	4.3
Normal training.....	4	4	7	4	5.3	2.7	2	2	19	13	3.8	2.9
Fine arts.....	4	4	5	5	3.3	3.3	6	4	11	10	2.2	2.2
Total.....	33	48	131	151	100.0	100.0	69	83	495	445	100.0	100.0

¹ In the schools of Group I, 34 schools are represented in 1914-15 and 32 schools in 1930-31.
² In the schools of Group II, 106 schools are represented in 1924-25 and 96 schools in 1930-31.

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Need of definite terminology.—Examining first the columns in which are listed the numbers of different curriculum names represented in each major type, the general impression is that of need of definite terminology. Thus, in what is designated the college preparatory type for Group I, 15 and 18 names were employed, respectively, in 1914-15 and in 1924-25 by the different schools to designate this type of curriculum. Not so great a variety of nomenclature appears in the case of the other seven groups, but altogether at the two periods, 33 and 48 different names, respectively, were employed to designate curriculums which are considered as grouped with sufficient distinctiveness under the eight types designated in the table. For 1924-25 and 1930-31, the corresponding figures for Group II, in which a greater number of schools are represented, are 25 and 36 names, respectively, for the college preparatory curriculums, and 69 and 83 different names for all curriculums.

Less emphasis on college preparatory curriculum.—With respect to the number of types which were offered in the schools of Group I during the two periods, again the college preparatory group appears for each period more often than any other. It is noteworthy, however, that there is a tendency to offer fewer of such curriculums in 1930-31 than in 1924-25. Turning to the column showing percentages, the decrease in emphasis on the college preparatory curriculum is shown even more markedly, since there are fewer schools represented in the early than the late period. The tendency to place less emphasis on the college preparatory curriculum over the more recent 6-year period is likewise revealed in the offerings of the 152 schools of Group II.

Increase for general curriculum in Group II.—Following the college preparatory curriculum in frequency in the schools of Group I are the commercial and general curriculums, in the order named. In the schools of Group I, the former shows a gain from 1914 to 1930, while the latter shows a slight decrease. The normal training curriculum shows a loss with the advancing years, while the fine arts, agricultural and home economics curriculums have made small gains. The trends revealed by the data representing the schools of

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Group II for a 6-year interval are similar to those described for Group I in the case of the commercial and normal training curriculums. As the percentages for the other types of curriculums are compared, there is seen to be little change for the manual arts, home economics, fine arts, and agricultural curriculums, but during the later period greater emphasis seems to be given to the general curriculum.

More curriculums for noncollege-going pupils.—For the years 1914-15 and 1930-31 curriculums intended for other than college preparatory pupils in the schools of Group I constitute 53.4 and 64.9 per cent, respectively, of all curriculums offered. In the schools of Group II the corresponding percentages are 58.8 and 64.5 per cent. Although enrollments in the separate curriculums are not reported, the data seem to indicate that with the advance of years the traditional conception of the American high school as a college preparatory institution is being abandoned.

CHAPTER XIII : RECENT TRENDS IN 152 PROGRAMS THE TOTAL OFFERING

I. PLAN OF THE CHAPTER

Attention is directed in the first part of this chapter to the total offering in general; that is, to the gross number of units of work, all subjects considered, which are offered in the schools represented. In the second part of the chapter, to which most space is devoted, separate consideration is given to the number of units and the nature of the courses offered in each of the major divisions of subject matter, such as English, mathematics, science, and the like. Conclusions as to the place occupied by each of 14 great divisions of subject matter¹ in the high-school program at different intervals of time are thus possible.

I. THE GROSS NUMBER OF UNITS OFFERED

The constants-with-variables type of program.—The advance of years has seen a rather steady increase in the gross number of units of work offered in the American high school, judging from data shown for the schools of Groups I and II. The number of units representing the total offering of the school at the first quartile, the median, and the third quartile positions are shown for 1914-15, 1930-31, and for 1924-25, 1930-31 in Figure 8. Averages are shown separately for schools employing the constants-with-variables type and for those employing the combination type of programs. With attention first to the schools representing the constants-with-variables type, in Group I an increment of approximately 10 units is shown over the 16-year period for the schools at the first quartile, the median, and the third quartile positions. The number of units shown at the first and third quartile positions represents the upper and lower extremity of the range in the middle 50 per cent of schools, while the number at the median position represents the

¹ In the study on which this project is based, Bradley has classified all subjects offered in the various schools as falling within 14 major fields, such as English, mathematics, science, etc. The same classification was necessarily followed in the present project.

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number offered by the middle-most school. Although the increment has not been so marked over the 6-year period, as represented by the schools of Group II, and although the schools of this group do not offer on the average so many units of work in 1930-31 as do the schools of Group I, the increase over the shorter period is still significant.

The combination type of program.—Corresponding data for the combination type of program indicate that on the whole the school employing this type offers more work than does the school employing the constants-with-variables type.

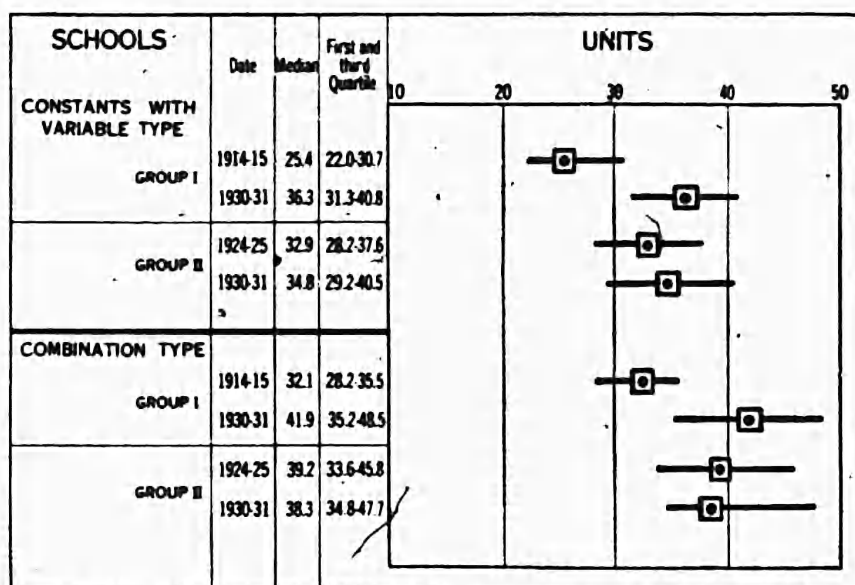


FIGURE 8.—The number of units of work offered by the schools at the first quartile, median, and third quartile positions: 1914-15 and 1930-31; 1924-25 and 1930-31

Increments for schools representing the latter type have, however, been more consistent. For the schools employing the combination type in Group II, over a 6-year interval, the increment has been very small for the schools at the first quartile and at the third quartile positions, and the school at the median position actually offers a less number of units in 1930-31 than in 1924-25.

3. THE TOTAL OFFERING IN THE MAJOR FIELDS

Data treated.—Just how the increments which have been seen to exist in the number of units of work offered in schools

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employing one of the two prevailing types of programs are distributed over the different subject fields will be next revealed. In this section is presented the number of units of work offered by the median school and the range of the middle 50 per cent of units offered, in each subject field, by the schools of Groups I and II. Data are not available as to the specific courses offered in the separate fields for the schools of Group I. Data of this nature are therefore considered for the schools of Group II only in the section immediately following the present division.

The constants-with-variables type of program.—Characteristics of the offering among schools of Groups I and II which employ the constants-with-variables type of program are shown in Table 51. The table indicates, for each subject field, the percentage of schools offering, the number of units of work offered in the median school, and the range of units offered in the middle 50 per cent of schools at the separate periods of time. The number of units shown for the constants-with-variables type will be the total offering in these schools, but this will not necessarily be true for the offering in the separate curriculums which receive like treatment later. The offering in the constants-with-variables type of program is therefore treated more fully as is also the offering in special curriculums related to it.

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TABLE 51.—The percentages of schools (employing the constants-with-variables type of program) offering work in each subject field and the median and range of the middle 50 per cent of units offered

Subject field	Group I						Group II					
	Percent- age of schools offering		Num- ber of units offered in me- dian school		Range of middle 50 per cent		Percent- age of schools offering		Num- ber of units offered in me- dian school		Range of middle 50 per cent	
	1914-16 (17 1)	1930-31 (22 1)	1914-16 (17 1)	1930-31 (22 1)	1914-16 (17 1)	1930-31 (22 1)	1924-26 (42 1)	1930-31 (52 1)	1924-26 (42 1)	1930-31 (52 1)	1924-26 (42 1)	1930-31 (52 1)
1	2	3	4	5	6	7	8	9	10	11	12	13
English.....	100.0	100.0	4.0	4.4	3.7-4.2	3.9-6.1	100.0	100.0	4.1	4.4	3.8-4.5	3.9-5.5
History.....	100.0	100.0	3.2	2.8	2.7-3.8	1.8-3.4	100.0	100.0	3.0	2.9	2.6-3.4	2.3-3.4
Social studies.....	76.8	100.0	0.2	2.1	1.0-4.1	1.6-2.8	97.6	98.1	1.8	1.9	1.1-2.2	1.3-2.5
Mathematics.....	100.0	100.0	4.2	3.8	3.4-5.3	3.2-4.2	100.0	100.0	3.6	3.6	3.0-4.1	3.0-4.2
Science.....	100.0	100.0	2.9	4.0	2.2-4.1	3.5-4.4	100.0	100.0	3.9	4.0	3.2-4.5	3.5-4.5
Physical education.....	.....	72.7	.....	0.6	.....	0.0-1.2	26.2	69.2	.....	.....	.....	0.0-1.7
Music.....	35.3	63.6	.....	0.8	0.0-0.2	0.0-2.4	42.9	55.8	.....	.....	0.0-2.0	0.0-2.6
Art.....	23.3	27.3	.....	.....	.....	0.0-0.1	19.0	26.9	.....	.....	.....	.....
Industrial arts.....	27.3	81.8	.....	3.0	0.0-2.1	1.0-4.3	61.9	73.1	1.0	2.1	0.0-2.1	0.0-3.8
Home economics.....	53.0	95.5	0.8	2.4	0.0-2.4	1.7-3.4	90.5	92.3	2.1	2.2	1.3-3.6	1.6-3.4
Foreign language.....	100.0	100.0	6.4	5.5	4.8-8.3	5.6-7.4	100.0	100.0	6.0	5.7	4.4-7.1	3.9-6.7
Commerce.....	60.1	100.0	.....	5.3	0.0-2.9	4.2-7.6	88.1	94.2	4.7	5.6	1.8-6.6	4.1-7.6
Agriculture.....	11.8	45.5	.....	.....	.....	0.0-2.0	33.3	30.8	.....	.....	0.0-1.9	0.0-1.8
Teacher training.....	11.8	.....	.....	.....	.....	.....	14.3	7.7	.....	.....	.....	.....

¹ Indicates total number of schools of Group I which offered the constants-with-variables type of program.
² Indicates the total number of schools of Group II which offered the constants-with-variables type of program.

English.—That the high school of to-day is making greater provision for individual needs and interests of pupils in the field of English may be concluded from the tendency toward an increased offering in this field which the table reveals. The number of units offered by the median school of Groups I and II are the same in 1930-31, but the increment is hardly so great over the 6-year period as it is for the 16-year period.

History and Social Studies.—Following the classification employed by Bradley, data for history and social studies are tabulated separately. The number of courses in history which are offered show a slight decrease for both Groups I and II from early to late periods. An average of hardly three years of work is offered by the median school under either type of program. The emphasis which has of late been placed on education for social needs is reflected in the in-



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creased number of units which are offered in the social studies by the schools of Group I. A similar tendency is shown by the schools of Group II, but, as may be expected, it is not so great over the shorter period represented by these schools.

Mathematics and foreign language.—Mathematics was one of the favored subjects in the traditional high-school program of studies, but it has not increased its status in recent years, judging from the results shown in this table. There is little difference in the number of units offered in the early and in the late periods. Like mathematics, foreign language constituted one of the principal subjects of the traditional high-school curriculum, and the table indicates that it, too, has not fared so well in late years. A slight decrease is indicated for each group, both by the median school and in the range of the middle 50 per cent of units offered.

Science.—Most of the increments in science seem to have been attained between 1914-15 and 1924-25 rather than between 1924-25 and 1930-31, judging from the averages shown. The table indicates only a slight increase for this subject field within the 6-year period.

Physical education.—The showing made by physical education is all the more significant because it does not have the force of tradition to bolster its place in the program of studies. It has also shared somewhat in the number of units added to the total offering, although in many schools it is offered without credit. The percentage of schools offering physical education shows a remarkable increase for the schools of Group I and of Group II.

Fine arts.—Both for the 54 schools representing 16-year trends and for the 148 schools representing 6-year trends, increments are shown from early to late periods in the number of units offered in music. Art, however, while showing a slight increase in the percentage of schools offering, has not fared so well.

Practical arts.—The most marked tendency on the part of the 1930-31 programs of studies appears to be the inclusion of more courses from the practical arts. The increase in number of units offered in commerce is very marked in both

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Groups I and II. In the industrial arts and home economics also a decided increment is indicated for the late period in the offering of both groups. Agriculture is the only vocational subject which does not show a gain with the years. This may be laid not only to the economic depression in agriculture, but also to the Smith-Hughes plan which excludes nonvocational pupils from the work.

Teacher training.—Few schools offer teacher training, as the data from the table clearly show. Before the time when higher standards for training teachers prevailed, rural teachers in some States were recruited from graduates of high-school teacher-training curriculums. For the most part, however, such standards have been raised, resulting in the placing of these courses in the post-graduate offering or in their entire elimination from the high school.

Specialized curriculums.—Data of a similar nature to those shown for the constants-with-variables type of program are presented for certain specialized curriculums in Table 52. The table shows averages for both Groups I and II in the college preparatory and commercial curriculums, but only for Group II in the general curriculum, since data for Group I were not obtainable.

College preparatory curriculum.—In the college preparatory curriculum, the most significant variations from data shown for the constants-with-variables type of program are in the decreases indicated for music and industrial arts. Neither is the increase in home economics quite so marked. Although an increase for mathematics is not surprising, it may be unexpected that foreign language should show a decrease in this curriculum. The popularity of commercial courses is indicated by the increments which they show in a college preparatory curriculum. The favorable representation secured in this curriculum may be somewhat due to vague claims of nonvocational values to be derived from commercial subjects, but as Weersing has shown, the extent of such values is open to question.² The explanation is more likely to be found in the increased flexibility of college entrance requirements.

² Weersing, Frederick J. The Nonvocational Values of Commercial Education. *School Review*, 36: 213-226, March, 1928.

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TABLE 52.—The percentages of schools offering each subject field and the median and range of the middle 50 per cent of units of work offered in certain specialized curriculums

Subject field and measure	College preparatory curriculum						Commercial curriculum						General curriculum	
	Group I		Group II		Group I		Group II		Group I		Group II		1924-25	1930-31
	1914-15 (56) †	1930-31 (53) †	1924-25 (172) †	1930-31 (138) †	1914-15 (23) †	1930-31 (32) †	1924-25 (90) †	1930-31 (106) †	1914-15 (23) †	1930-31 (32) †	1924-25 (90) †	1930-31 (106) †	1924-25 (57) †	1930-31 (69) †
English:														
Percentage offering.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	97.8	100.0	100.0	100.0	100.0
Median.....	4.1	4.4	4.1	4.4	3.9	3.9	4.4	4.4	4.4	4.0	4.4	4.4	4.2	4.2
Range.....	3.8-4.4	4.0-5.3	3.8-4.9	3.9-5.1	3.5-4.2	3.9-5.1	3.6-4.4	3.9-5.2	3.9-5.2	3.6-4.4	3.9-5.2	3.9-5.2	3.8-4.8	3.8-4.9
History:														
Percentage offering.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	98.9	88.7	100.0	100.0	100.0
Median.....	2.9	2.8	2.8	2.8	2.6	2.4	2.7	2.7	2.7	2.7	2.7	2.7	2.9	2.9
Range.....	2.2-3.6	2.2-3.3	2.4-3.2	2.2-3.2	1.7-3.3	1.8-3.1	2.0-3.2	1.7-3.6	1.7-3.6	2.0-3.2	1.7-3.6	2.3-3.3	2.3-3.3	2.3-3.3
Social studies:														
Percentage offering.....	71.4	92.5	100.0	93.0	82.6	100.0	97.8	96.2	96.6	97.8	96.2	100.0	100.0	95.6
Median.....	0.3	1.9	1.4	1.7	0.7	1.8	1.6	1.9	1.7	1.6	1.9	1.8	1.8	1.7
Range.....	0.0-0.7	0.7-2.4	0.7-2.0	0.7-2.3	0.2-1.3	1.2-2.2	0.5-2.1	1.3-2.3	1.3-2.3	0.5-2.1	1.3-2.3	0.9-2.2	0.9-2.2	0.9-2.3
Mathematics:														
Percentage offering.....	100.0	100.0	100.0	100.0	100.0	100.0	87.5	84.0	84.0	83.3	84.0	100.0	100.0	100.0
Median.....	3.4	3.9	3.6	3.9	2.4	2.2	2.2	3.0	2.2	2.2	3.0	3.7	3.7	3.7
Range.....	2.9-3.9	3.6-4.3	3.0-4.2	3.4-4.3	1.8-3.0	0.9-3.7	1.0-3.3	1.2-4.0	1.2-4.0	1.0-3.3	1.2-4.0	2.9-4.2	2.9-4.2	3.0-4.2
Science:														
Percentage offering.....	100.0	100.0	100.0	100.0	91.3	96.9	94.4	99.1	99.1	94.4	99.1	100.0	100.0	100.0
Median.....	3.1	4.0	3.6	3.8	2.8	3.6	2.9	3.5	2.9	2.9	3.5	3.9	3.9	3.9
Range.....	2.7-3.6	3.1-4.8	2.9-4.1	3.1-4.3	1.9-3.5	2.0-4.3	1.8-3.8	2.4-4.2	2.4-4.2	1.8-3.8	2.4-4.2	3.5-4.3	3.5-4.3	3.4-4.4
Physical education:														
Percentage offering.....	14.3	73.6	69.8	69.0	38.0	84.4	34.4	78.3	78.3	34.4	78.3	63.2	63.2	75.4
Median.....	0.8	0.6	0.6	0.5	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.1
Range.....	0.0-1.3	0.0-1.3	0.0-0.6	0.0-1.3	0.0-1.3	0.0-1.3	0.0-0.4	0.0-1.3	0.0-1.3	0.0-0.4	0.0-1.3	0.0-0.6	0.0-0.6	0.0-1.1
Music:														
Percentage offering.....	71.4	51.0	65.1	56.3	47.7	62.4	42.2	67.9	67.9	42.2	67.9	61.4	61.4	50.7
Median.....	0.8	0.1	0.0	0.3	0.3	0.3	0.3	0.9	0.9	0.3	0.9	0.1	0.1	0.1
Range.....	0.0-1.4	0.0-0.9	0.0-2.5	0.0-1.8	0.0-1.8	0.0-1.1	0.0-1.7	0.0-3.5	0.0-3.5	0.0-1.7	0.0-3.5	0.0-2.6	0.0-2.6	0.0-1.3

† Indicates the number of schools of Group I employing this curriculum.
‡ Indicates the number of schools of Group II employing this curriculum.

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TABLE 52.—The percentages of schools offering each subject field and the median and range of the middle 50 per cent of units of work offered in certain specialized curriculums—Continued

Subject field and measure	College preparatory curriculum						Commercial curriculum			General curriculum	
	Group I		Group II		Group I		Group II		1924-25	1930-31	
	1914-15 (56)	1930-31 (53)	1924-25 (177)	1930-31 (158)	1914-15 (23)	1930-31 (32)	1924-25 (90)	1930-31 (106)	1924-25 (57)	1930-31 (69)	
1	3	3	4	5	6	7	8	9	10	11	
Art:	50.0	56.6	46.5	53.2	39.1	62.5	35.5	60.4	44.0	59.4	
Percentage offering.....	0.4	0.4	0.0-0.9	0.2	0.0-0.9	0.6	0.0-0.5	0.0-1.0	0.0-0.9	0.4	
Median.....	0.0-0.9	0.0-1.9	0.0-0.9	0.0-1.8	0.0-0.9	0.0-1.8	0.0-0.5	0.0-1.0	0.0-0.9	0.0-1.7	
Range.....	71.4	60.3	65.1	62.0	52.2	81.2	58.9	74.5	71.9	72.5	
Industrial arts:	0.3	0.5	1.7	1.3	0.1	1.3	0.8	1.9	2.1	2.0	
Percentage offering.....	0.0-1.3	0.0-3.2	0.0-3.1	0.0-3.2	0.0-1.6	0.2-3.5	0.0-2.6	0.0-3.6	0.0-3.3	0.0-3.6	
Median.....	50.0	66.0	56.1	66.5	47.8	90.6	64.4	80.2	68.4	78.3	
Range.....	0.0-0.5	0.0-2.4	0.0-3.5	0.0-3.2	0.0-1.6	1.7	1.0	1.8	1.7	2.0	
Foreign language:	100.0	100.0	100.0	100.0	82.6	68.7	76.5	76.4	83.0	97.1	
Percentage offering.....	6.6	6.6	6.5	6.5	3.7	4.5	3.3	4.8	5.1	5.3	
Median.....	6.6-7.2	4.9-7.1	4.7-7.4	4.6-7.3	1.9-4.4	0.0-6.8	1.0-4.7	1.8-7.0	4.0-7.1	3.9-7.1	
Range.....	14.3	54.8	53.5	59.4	100.0	100.0	100.0	100.0	80.7	85.5	
Commerce:	0.9	0.9	0.4	1.2	6.5	7.0	7.1	7.2	5.1	6.6	
Percentage offering.....	0.0-0.7	0.0-4.7	0.0-4.7	0.0-6.5	4.9-7.0	6.7-7.2	5.5-8.7	6.7-8.8	1.1-7.0	1.6-7.1	
Median.....	28.5	26.4	23.3	17.1	26.1	18.7	13.3	21.7	26.3	20.3	
Range.....	0.0-0.7	0.0-2.5	0.0-4.7	0.0-6.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.2	0.0-0.2	
Agriculture:	3.8	3.8	7.0	10.8	4.3	9.3	6.7	8.5	10.5	7.2	
Percentage offering.....	0.0-0.7	0.0-2.5	0.0-4.7	0.0-6.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.2	0.0-0.2	
Median.....	3.8	3.8	7.0	10.8	4.3	9.3	6.7	8.5	10.5	7.2	
Range.....	0.0-0.7	0.0-2.5	0.0-4.7	0.0-6.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.2	0.0-0.2	
Teacher training:	0.0-0.7	0.0-2.5	0.0-4.7	0.0-6.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.2	0.0-0.2	
Percentage offering.....	3.8	3.8	7.0	10.8	4.3	9.3	6.7	8.5	10.5	7.2	
Median.....	3.8	3.8	7.0	10.8	4.3	9.3	6.7	8.5	10.5	7.2	
Range.....	0.0-0.7	0.0-2.5	0.0-4.7	0.0-6.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.2	0.0-0.2	

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Commercial and general curriculums.—The commercial curriculum shows greater increments in the number of schools offering commercial subjects, but the increases in other subject fields are, for the most part, not so marked as indicated for the constants-with-variables type of program. For the general curriculum likewise, the most notable increase is in the number of units offered in the commercial field. For this curriculum, there has been little change in other subject fields over the 6-year period represented.

Number of separate courses offered.—While data for the early periods were not obtainable, an idea of the variety of courses offered by the modern high school in a town of medium size is to be had from a presentation of the number of distinct courses offered by 148 schools in 1930-31 in each subject-matter field. Many of the courses for which different names were given by different schools no doubt vary little in the nature of materials of instruction. It is evidence, however, of the endeavor of the modern high school to care for individual differences that a total of 419 distinct courses are listed. The greatest variety is in the commercial field, showing 56 distinct courses, but English and home economics, credited with 50 each, follow closely. The number of courses listed in other fields are: Social studies, 39; science, 38; industrial arts, 35; art, 32; mathematics, 25; music, 23; history, 21; teacher training, 19; agriculture, 15; physical education, 9; and foreign language, 7.

4. COURSES OFFERED IN THE ACADEMIC FIELDS

Manner of treating data.—In this section of the chapter, the characteristics of the offerings in each subject field are considered in a more detailed manner. For each of the 14 subject fields into which the total offering was classified by Bradley, data are presented to indicate trends over a 6-year period in the courses offered in each of these fields by 10 per cent or more of all schools. Data are presented in Table 53 for English, history, social studies, mathematics, science, and foreign language, designated as the academic subjects. In each instance, separate tabulations are made for the constants-with-variables type of program and for the college

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preparatory, commercial, and general curriculums in schools employing the combination type of program.

English.—In the field of English, although the table indicates a greater percentage of schools offering American and English literature and composition and rhetoric during the early than in the later period, this is perhaps due to a greater tendency in the later period to list traditional courses simply as “English” rather than to any diminution in the offering of these courses. The same may not be said, however, for the increments over the 6-year period in the number of schools shown to be offering journalism, public speaking, and debate and dramatics. Such increases are indications of increased efforts to fit the pupil to his environment.

TABLE 53.—The percentages of schools of Group II offering certain courses in the academic fields. (Courses not offered in 10 per cent of the schools are not included)

Subject field and courses	Constants-with-variables type of program		Curriculum in combination type of program					
			College preparatory		Commercial		General	
	1924-25 (42) ¹	1930-31 (52) ¹	1924-25 (172) ¹	1930-31 (158) ¹	1924-25 (90) ²	1930-31 (106) ²	1924-25 (57) ²	1930-31 (69) ²
1	2	3	4	5	6	7	8	9
ENGLISH								
American literature.....	38.1		11.6				10.6	
English literature.....	38.1		13.9		11.1			
Composition and rhetoric.....	40.5		9.3		10.0			
Journalism.....		19.3		22.2		26.4		17.3
Public speaking and debate.....	23.8	32.7	18.6	35.4	23.3	45.3	26.3	36.2
Dramatics.....				9.5		13.3		
English.....	57.2	100.0	90.7	100.0	100.0	100.0	100.0	100.0
HISTORY								
World history.....	11.9	50.1		19.6		36.8		36.2
History.....				9.4		9.5		11.6
Ancient history.....	66.7	30.8	69.8	46.2	66.7	32.9	73.7	46.4
Medieval history.....	23.8		16.3		12.2		15.8	
Modern history.....	73.8	40.4	62.8	20.2	66.9	32.0	72.0	42.1
American history.....	92.9	96.1	97.7	92.4	94.5	96.2	89.5	92.8
English history.....	16.7		9.3		11.1			
Early European history.....		13.5		12.6		10.4		10.2
Modern European history.....		13.5		10.8		10.4		11.6

¹ Indicates the number of schools employing this type of program.

² Indicates the number of curriculums represented.

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TABLE 53.—The percentages of schools of Group II offering certain courses in the academic fields. (Courses not offered in 10 per cent of the schools are not included)—Continued

Subject field and courses	Constants-with-variables type of program		Curriculum in combination type of program					
			College preparatory		Commercial		General	
	1924-25 (42)	1930-31 (52)	1924-25 (172)	1930-31 (158)	1924-25 (90)	1930-31 (106)	1924-25 (57)	1930-31 (69)
1	2	3	4	5	6	7	8	9
SOCIAL STUDIES								
Social studies.....				11.4		13.2		
Problems of democracy.....	23.8	32.7	16.3	33.6	21.1	31.1	24.5	32.0
Civics.....	83.3	65.4	76.7	53.2	65.6	58.5	66.7	62.3
Community civics.....	31.0	19.3		10.7	32.3	14.2	35.1	17.3
Economics.....	47.6	51.9	51.2	43.1	54.4	51.9	52.6	49.2
Sociology.....	30.9	30.8	25.6	20.3	15.6	19.1	31.6	16.0
Vocations.....		19.3				9.5		
MATHEMATICS								
General mathematics.....							12.3	
Arithmetic.....	16.7		11.6					10.2
Elementary algebra.....	97.6	94.2	100.0	94.9	76.7	78.3	93.0	94.2
Advanced algebra.....	73.8	59.6	90.7	92.4	35.6	57.6	70.0	70.7
College algebra.....			18.6				17.6	
Plane geometry.....	100.0	98.1	100.0	94.9	62.2	70.8	96.5	92.8
Solid geometry.....	81.0	78.8	81.4	78.5	27.8	51.0	75.4	68.1
Trigonometry.....	31.0	69.0	44.2	58.2			43.9	42.0
Reviews.....					16.7		10.6	
SCIENCE								
General science.....	71.4	78.8	58.1	54.4	64.4	55.7	70.2	63.8
Biology.....	76.2	86.5	53.5	78.5	56.7	86.8	68.4	85.5
Botany.....	19.0	9.6	25.6	13.9	23.3	12.3	26.4	11.6
Physiology.....	31.0	19.2	18.6	12.0	11.1	17.0	22.8	14.5
Hygiene.....		11.6						
Chemistry.....	81.0	82.7	62.8	87.3	51.1	68.9	87.7	85.5
Physics.....	92.9	92.3	83.7	92.4	61.1	65.1	94.8	91.3
Physical geography.....	38.1	13.5	9.3	9.5				
FOREIGN LANGUAGE								
Latin.....	97.6	100.0	97.7	91.1	42.2	58.5	90.7	78.3
French.....	66.7	57.7	86.0	90.5	52.2	65.0	70.2	91.3
Spanish.....	40.5	36.6	39.5	41.1	24.5	39.6	40.4	37.7
German.....		11.6						

The average number of units offered in the constants-with-variables type of program and in the special curriculums is approximately the same, except that English seems a little more restricted in the general curriculum. College preparatory and commercial curriculums each demand a certain amount of English, but in the light of the large amount of prescribed work in other subject fields for these curriculums, the amount of election still permitted over and above the three or four units usually required, is additional evidence of the importance attached to English in the high-school program.

History.—The most significant changes in history are decreases over the 6-year period in the offering of ancient,

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medieval, and modern history and increments in early and modern European and in World history. These changes are consistently characteristic of all types of programs. American history is offered in almost all schools and, except in curriculums of the college preparatory type, shows an increment over the 6-year period. English history seems to be declining in importance.

Social studies.—The table reveals that the courses offered most often in the social studies are civics and economics, each of which, however, shows a decline over the six years considered. Community civics and sociology likewise show a decreased offering in most cases. The courses which in late years are being offered more generally are designated either as "social studies" or as "problems of democracy." The latter, in particular, shows an increase in percentage in all types of programs over the 6-year period. It is also of considerable significance that in 1930-31 a course designated as "vocations" is offered in almost one-fifth of the schools employing the constants-with-variables type of program.

Mathematics.—Of the specific courses offered in mathematics, elementary algebra, intermediate, advanced, or college algebra, and plane and solid geometry continue in the offering of almost all schools; on the whole, there is a small increase for each course over the 6-year period. This is true for all types of programs in nearly every case except for the commercial curriculum, which, although including less mathematics than the others, shows a greater tendency toward increasing the offering over the 6-year period. Just why algebra and geometry should show increased offerings in the commercial curriculum is unknown, unless it be on account of a tendency noted in late programs to allow electives from all high-school subjects after the requirements of a special curriculum are met. Arithmetic, general mathematics, and reviews show a decrease for the later period, but in all cases except the general curriculum there has been a significant increment in the number of schools offering trigonometry.

Science.—The specific courses offered in the field of science in a majority of all types of programs are general science, biology, chemistry, and physics. General science shows an

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increase in the constants-with-variables type of program, but a decrease in the special curriculums of the combination type. Biology shows an increase in all cases, evidently at the expense of botany. There is very little change in physics, but chemistry shows an increment for all cases except the general curriculum. While physiology seems to have become of more importance in the commercial curriculum, it is receiving less emphasis in the college preparatory and general curriculums. A less number of schools offers physical geography in the late period.

Foreign language.—Latin is still the most frequent offering in the field of foreign language, but French shows the most consistent increments. Spanish was offered in approximately 40 per cent of all schools in 1924-25, but hardly held its own over the 6-year period. The increase shown for German is in the nature of a recovery from the influence of the World War when it was thrown out of nearly all schools.

6. COURSES OFFERED IN THE SPECIAL FIELDS

Physical education.—Similar data to those immediately foregoing are shown for physical education, music, art, commerce, industrial arts, home economics, and agriculture, classified as special subjects, in Table 54. In the field of physical education, the course most frequently offered is designated health or physical education. An increase is shown over the 6-year period in each type of program, but it is only slight in the college preparatory curriculum.

Music.—Data indicate a tendency to give less rather than greater emphasis to music in the college preparatory and general curriculums. The tendency shown for the college preparatory curriculum may perhaps be attributed to the fact that other new courses in the field of art, commerce, industrial arts, home economics, and physical education now vie with each other for the margin of two or three credits in other than academic fields which is the maximum allowance in some colleges. The same reasoning, however, can not account for the paucity of music offering in the general curriculum. Pupils pursuing this curriculum should have the same opportunity to develop worthy avocational interests as those in other curriculums.

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TABLE 54.—The percentages of schools of Group II offering certain courses in the special fields. (Courses not offered in 10 per cent of the schools are not included)

Subject field and courses	Constants-with-variable type of program		Curriculum in combination type of program					
			College preparatory		Commercial		General	
	1924-25 (42) ¹	1930-31 (52) ¹	1924-25 (172) ²	1930-31 (158) ²	1924-25 (90) ²	1930-31 (106) ²	1924-25 (57) ²	1930-31 (69) ²
1	2	3	4	5	6	7	8	9
PHYSICAL EDUCATION								
Physical education.....	40.5	59.6	60.5	60.7	55.7	71.8	56.1	68.1
Health.....								11.6
Athletics.....	9.6							
MUSIC								
Music.....	23.8	30.8	30.2	25.9	27.8	29.2	21.1	20.3
Harmony.....					10.0	10.4	12.4	
Appreciation.....			11.6	12.7			12.4	14.5
Chorus.....	16.7	13.5	16.2	10.1	16.6	14.2	19.3	17.4
Glee club.....	16.7	15.4	20.9	21.5	14.4	24.6	22.8	26.0
Band.....	14.3	17.3	11.6	15.2		21.6		21.8
Orchestra.....	23.8	19.2	25.6	20.9	18.9	27.3	24.6	31.8
ART								
Art.....		19.3	16.3	25.4	13.3	23.0	12.3	23.1
Drawing.....				17.8		17.0		17.4
Freehand drawing.....	11.9		22.6	12.7	21.1	9.4	24.6	11.6
COMMERCE								
Junior business training.....		19.3		14.0		24.9		31.8
Bookkeeping.....	73.8	84.6	32.5	36.7	96.6	93.4	61.4	66.6
Accounting.....						10.5		
Commercial arithmetic.....	47.6	42.3	15.6	29.7	77.8	78.3	33.6	53.0
Typewriting.....	73.8	83.5	37.2	44.9	83.7	99.1	59.7	73.8
Pennmanship and spelling.....	11.9					12.3	10.4	
Pennmanship.....			11.6			32.2		21.1
Stenography.....	69.1	32.8		14.6		49.0		24.6
Shorthand.....			32.5	25.2	96.7	54.8	54.4	39.1
Business English.....			11.6	10.7	26.6	27.3	15.8	11.6
Office practice.....		21.2			23.3	39.7	21.1	11.5
Commercial law.....	33.3	42.3	30.3	32.2	77.8	77.2	33.1	50.7
Commercial geography.....	33.3	23.9	16.3		52.2	37.8	33.3	23.1
Salesmanship.....				9.5		32.0		11.6
INDUSTRIAL ARTS								
Manual training.....	50.0	52.0	37.2	41.7	32.2	46.4	45.7	52.2
Mechanical drawing.....	23.8	33.5	44.2	25.4	33.3	43.4	45.6	37.6
Woodwork.....		17.3	20.9	12.7	17.8	17.1	22.8	11.6
Wood turning.....			11.6				10.5	
Printing.....				10.7		9.4		
Auto mechanics.....						14.3		
HOME ECONOMICS								
Home economics.....	50.0	61.5	25.6	32.9	16.7	43.4	15.8	37.7
Home making.....								10.1
Domestic science.....	26.2	11.6	18.6		15.5		24.6	
Domestic art.....	9.6	11.6	18.6		10.0		15.8	
Clothing.....	11.9	17.3		11.4		12.3		
Sewing.....			18.6		21.1	10.5	24.6	
Food.....	16.7	17.3				11.3		
Cooking.....			25.6		22.2		22.8	11.6
AGRICULTURE								
General agriculture.....	11.9	15.4	18.6	12.9	14.4	17.1	14.0	15.9
Vocational agriculture.....	14.3	12.5						
Farm crops.....	16.7							
Animal husbandry.....	16.7							

¹ Indicates total number of schools in which offered.

² Indicates the number of curriculums represented.

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Of the courses listed, "music" and orchestra are offered in a greater number of schools. The former exhibits the variation shown for the whole field, as does the latter also, except for a considerable increment in the general curriculum. Chorus shows a decrease in all types of programs, while glee club has an increase in the specific curriculums. Orchestra decreases in the constants-with-variables type of program and in the college preparatory curriculum, while band shows a healthy gain in all types of programs.

Art.—Although for each type of program an increase in the percentage of schools offering work in art is shown, the number of units offered in the median school and in the range of the middle 50 per cent of schools, as shown in Tables 52 and 54, indicates that this subject has not yet been given a place in the program of studies commensurate with its possible contribution to leisure-time enjoyment. It is offered in a little more than a majority of schools having the combination type of program, but in scarcely 27 per cent of those employing the constants-with-variables type. The greater increase shown in the commercial curriculum is indicative of emphasis given in some schools to commercial art.

Industrial arts.—Increments over the 6-year period in the general manual arts course are indicated for all types of curriculums, but mechanical drawing shows a decrease in the college preparatory and the general curriculum. A late tendency to offer more work in printing and in auto mechanics is also observable.

Home economics.—Except in the college preparatory curriculum the general tendency is toward an increase over the 6-year period in courses offered in the field of home economics. The courses listed are for the most part included under such general titles as domestic science and art, foods and clothing, but a late tendency of some significance is to be observed in the number of schools which have added a course in home-making.

Commerce.—Such traditional courses as bookkeeping, commercial arithmetic, commercial law, shorthand, stenography, and typewriting show gains in almost all cases in the commercial field, but the most significant increments are made by such newer courses as junior business training, office

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practice, and salesmanship. On the other hand, significant decreases are shown in some cases for penmanship and spelling, business English, and commercial geography.

Agriculture.—While in 1924-25, such specialized courses as farm crops and animal husbandry were offered in the field of agriculture in more than 10 per cent of all schools, in 1930-31 only the more generalized courses designated as general and vocational agriculture attained this rank.

CHAPTER XIV : RECENT TRENDS IN 152 PROGRAMS
THE REQUIRED WORK

1. PURPOSE OF THE CHAPTER

Preliminary statement.—The different subjects in the program are not accorded impartial treatment in the schools. Although changes in the characteristics of the high-school population have forced recognition of individual needs and interests, they have also emphasized the fact that modern society requires that certain fundamental training be acquired to meet needs common to all. The modern high school is thus faced with the problem of providing one group of subjects which offer to the greatest extent the training which is needed by all, and which will therefore be required of all pupils, and of providing another group of subjects which will care for individual needs and interests and which will therefore be subject to individual choice. The preceding chapter showed the variety of subjects which the high school has offered at different periods in order to care for the varied interests of pupils. It is the purpose of the present chapter to show the nature of the subjects which were considered at different recent periods as best contributing to the training needed on a common-to-all basis.

Outline of chapter.—Through presentation in the first part of this chapter of the gross number of units of work required in the high-school program of studies as a whole and of the gross number of units required in two separate curriculums, the basis is afforded for conclusions as to the extent to which the high-school program has at different periods been divided between its obligation to care for training on a common-to-all basis and to care for training for individual needs.

Through presentation in the second part of the chapter of the requirements in the specific subject fields, opportunity is afforded for conclusions as to the subjects which at different recent periods have been considered as having the greatest value in providing training needed on a common-to-all basis.

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2. NUMBER OF UNITS REQUIRED FOR GRADUATION

Average and range of middle 50 per cent.—For graduation from a 4-year high school, the usual requirement is the completion of from 15 to 17 units of work. An idea of the proportion of this general requirement which must be devoted to work prescribed for all pupils alike at the different periods considered in this study may be gained from Figure 9. In this figure are shown the average number of units required and the number of units included in the range of the middle 50 per cent of schools of Groups I and II, separate for those

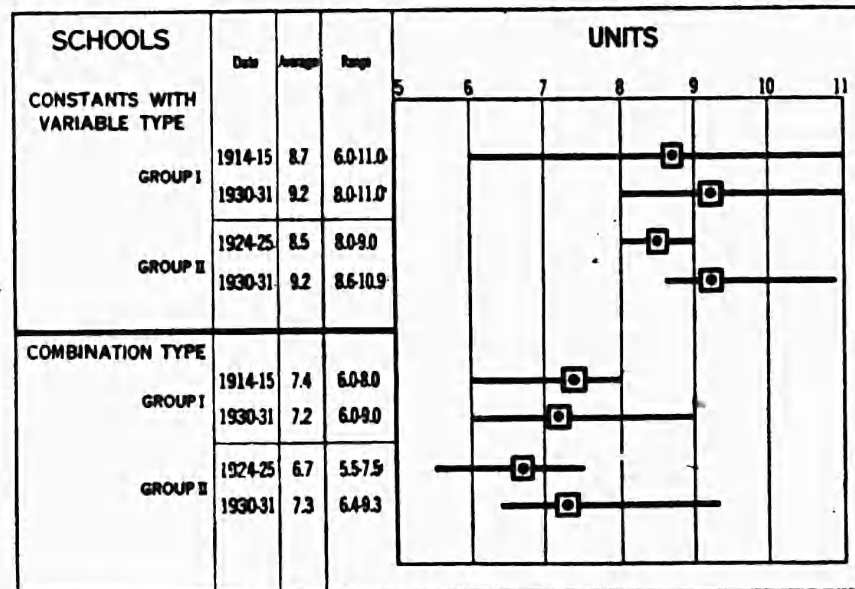


FIGURE 9.—The number of units of work required for graduation from the average school and the range of the middle 50 per cent of units required: 1914-15 and 1930-31; 1924-25 and 1930-31

employing the constants-with-variables and the combination type of program.

Constants-with-variables type of program.—Considering first the constants-with-variables type of program, we note that for both groups an increase in the number of units of work required for graduation has occurred for the median school and for the range of the middle 50 per cent of schools. For 1930-31, a little over nine-sixteenths of the pupil load is composed of subjects taken by all pupils alike, while almost seven-sixteenths of the load is given over to the variable element of the program. In the average school in both

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Groups I and II, the number of units required of all pupils has increased about one-half from the early to the late period.

Combination type of program.—The figures tabulated for the combination type of program represent only those units of work which are a common requirement of all curriculums included under this type of program. Although the requirements of each specific curriculum are greater, the number of units required in all curriculums by the average school is about two less than that shown for the constants-with-variables type of program. The explanation of the lesser requirement is that under the combination type, pupils with special needs are organized into separate groups and a special curriculum is provided for each. A composite of the requirements for all groups will therefore be less. Little variation is to be found in the average for 1930-31 of the schools of Groups I and II, but over the interval of years, while the former decreased from 7.4 to 7.2 units, the latter increased from 6.7 units to 7.3 units of work required of all pupils.

College preparatory and commercial curriculums.—Although not shown in the figure, averages were also computed to show trends in requirements in the college preparatory and commercial curriculums as offered in the schools of Group I. During the 16-year period represented, an increase from 13 units to 14.3 units was shown in the required work of the college preparatory curriculum. The average for the commercial curriculum changed very little, however, from 13.9 units required in 1914-15 to 13.8 units required in 1930-31. An average of two units of choice, therefore, is allowed pupils following these two curriculums.

8. REQUIREMENTS IN THE MAJOR SUBJECT FIELDS

The constants-with-variables type of program.—An idea as to the educational values receiving most emphasis at different recent periods may be obtained from a consideration of the number of schools requiring different amounts of work in different subject fields. These data are considered separately for schools of Groups I and II employing the constants-with-variables type of program, and for the college preparatory and commercial curriculums offered in the schools of Group I.

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The schools of Group I.—The number of units of work in the schools of Groups I and II which are required by the median school and in the range of the middle 50 per cent of schools are shown for each subject field in Figure 10. If we may arrive at a composite for the median school requirement by adding the separate medians computed for the different subject fields, the results will show the median school employing the constants-with-variables type of program in Group I, for 1930-31, requiring 6.8 units of work of all pupils, distributed as follows: English, 3.8; history, 1.3; social studies, 0.3; mathematics, 0.9; science, 0.2; physical education, 0.3. On the same basis of computation, such requirement represents a decrease of 0.3 units over the total amount of work required in 1914-15. Although English shows a small increase, and history, the social studies, and physical education greater increases, mathematics takes a loss of one whole unit and science a loss of 0.6 unit. The same subject fields show a gain or a loss, but not in the same proportion, in the ranges of the middle 50 per cent of units required and in the percentage of schools in which required for the separate periods. No medians are shown for foreign language, music, art, commerce, industrial arts, home economics, or agriculture because they were not required in a half of all schools. Commerce was not required in any school in the early or late period, while music, required in 14.7 per cent of schools in 1930-31, shows for both groups, the highest percentage of requirement among the subjects not listed in the figure.

The schools of Group II.—The figures for the schools of Group II, in which are represented variations for a greater number of schools over a shorter period of time, differ somewhat from those for Group I. The total work required by the median school is 8.7 units, or practically two units more than that represented for Group I. The total requirement was secured by adding medians in the separate subject fields as in the schools of Group I, so that variations may be due more to a larger representation of schools than to any other cause. The requirement in English is the same, and history shows the same increase but from a greater beginning. Instead of a loss, however, mathematics shows a constant requirement of 1.5 units for each period, and science an

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increment from zero to 0.9 unit. While the social studies are still required to a greater extent than in Group I, they show a small loss for the 6-year period. The trends described as typical of the median school are representative more or less of those shown by the range of the middle 50 per cent of units required and for the percentage of schools requiring.

The combination type of program.—Data were not available for the schools which were in 1914-15 employing the combina-

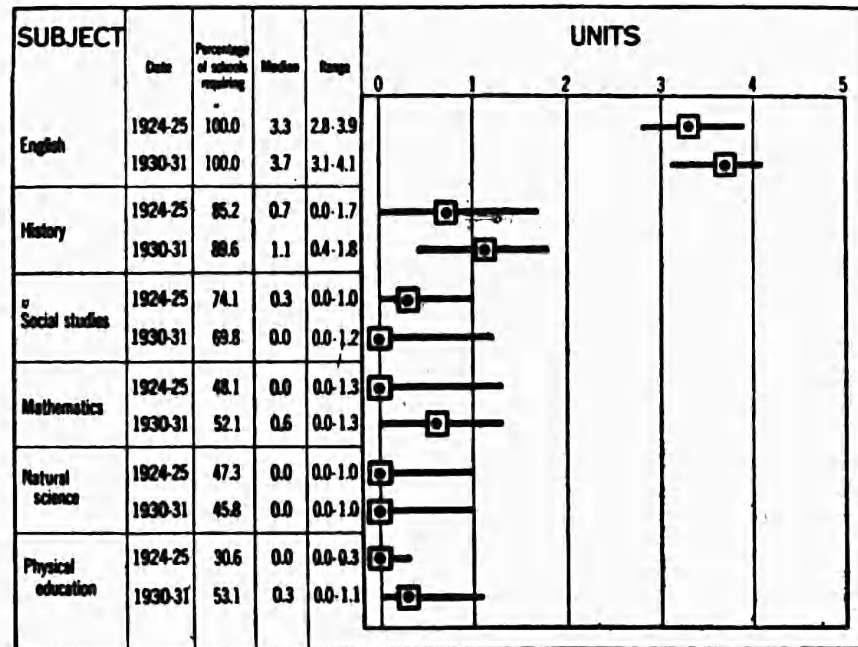


FIGURE 11.—The percentages of schools requiring and the number of units of work required in different subject fields by the median and by the range of the middle 50 per cent of schools employing the combination type of program: 1924-25 and 1930-31

tion type of program, and Figure 11, therefore, represents the facts only for the schools of Group II. Judging from the amount of work required of all pupils, obtained by totaling the medians as under the constants-with-variables type, schools employing the combination type of program have centralized to a considerable extent on the subjects which are required in each specialized curriculum. While in 1924-25 only 4.3 units of work are shown as required of all pupils in the median school, over the 6-year period this requirement has increased to 5.7 units. For the later period, this requirement represents 3.7 units in English, 0.6 unit in

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mathematics, 1.1 units in history, and 0.3 unit in physical education. Over the six years each of these subject fields shows a gain, but the social studies have decreased from 0.3 unit required by the median school in 1924-25 to no requirement in 1930-31. Trends in the number of units in the range of the middle 50 per cent of schools are largely in accord with those indicated for the median school. This is likewise true of the percentage of schools requiring these subject fields. Foreign language and music were required in a few schools, although neither is shown in the table. The former was required in 3.6 and 2 per cent of all schools in 1924-25 and 1930-31 of all schools, respectively, while the latter was required in 9.2 and in 11.5 per cent of the schools at the early and late periods.

The college preparatory curriculum.—Trends in separate curriculums could be ascertained only from data for the schools of Group I. Data similar to those already discussed are represented for the college preparatory and commercial curriculums in Table 55. This table indicates that in the college preparatory curriculum practically all work taken by pupils of the median school must be the same. For 1930-31, this median school required 14.3 units of work to be distributed as follows: English, 3.9 units; history, 1.9 units; social studies, 0.2 unit; mathematics, 2.9 units; science, 1.4 units; foreign language, 3.1 units; physical education, 0.9 unit. These data represent an increase over those shown for 1924-25 for science, history, social studies, and physical education. No change is recorded for English and mathematics, while foreign language shows a decrease from 3.9 to 3.1 units of required work. Although these same trends are indicated by the data showing percentage of schools requiring and range of middle 50 per cent of required units, they do not indicate that such fields as music, art, commerce, and industrial arts, though not required in 50 per cent of all schools, actually show an increase over the 6-year period.

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TABLE 55.—The percentages of schools requiring and the number of units of work required in different subject fields by the median and the range of the middle 50 per cent of schools, separate for those employing the college preparatory and the commercial curriculums

Subject field	College-preparatory curriculum						Commercial curriculum					
	Percentage of schools requiring		Range of middle 50 per cent of schools		Number of units required by median school		Percentage of schools requiring		Range of middle 50 per cent of schools		Number of units required by median school	
	1914-15	1930-31	1914-15	1930-31	1914-15	1930-31	1914-15	1930-31	1914-15	1930-31	1914-15	1930-31
	2	3	4	5	6	7	8	9	10	11	12	13
English.....	100.0	100.0	3.6-4.2	3.6-4.2	3.9	3.9	100.0	100.0	2.8-4.0	3.1-4.1	3.5	3.7
History.....	92.9	98.1	0.6-2.0	1.5-2.3	1.3	1.9	82.6	93.8	0.2-1.7	0.6-1.8	0.9	1.1
Social studies.....	50.0	66.0	0.0-0.3	0.0-0.6	—	0.2	65.2	75.0	0.0-1.0	0.0-1.8	0.2	0.7
Mathematics.....	100.0	100.0	2.4-3.3	2.2-3.6	2.9	2.9	91.3	46.9	1.4-3.2	2.0-1.1	1.8	—
Science.....	78.6	84.9	0.3-1.4	0.7-2.4	0.9	1.4	60.9	65.6	0.0-1.5	0.0-1.1	0.8	0.7
Physical education.....	14.3	69.8	—	0.0-1.5	—	0.9	—	62.5	—	0.0-1.1	—	0.6
Music.....	14.3	15.1	—	—	—	—	4.3	21.9	—	—	—	—
Art.....	—	13.2	—	—	—	—	4.3	12.5	—	—	—	—
Industrial arts.....	14.3	15.1	—	—	—	—	8.6	18.8	—	—	—	—
Home economics.....	14.3	7.6	—	—	—	—	8.6	18.8	—	—	—	—
Foreign language.....	78.6	77.4	2.0-4.3	1.6-4.3	3.9	3.1	17.3	—	—	—	—	—
Commerce.....	—	1.9	—	—	—	—	100.0	96.9	4.8-7.0	4.8-7.5	6.1	6.3
Agriculture.....	—	—	—	—	—	—	4.3	—	—	—	—	—

The commercial curriculum.—A pupil enrolled in the commercial curriculum is allowed a somewhat greater margin of choice in the median school. Data represented in the table indicate that for 1930-31, 13.1 units of work are required of all pupils, distributed as follows: English, 3.7; history, 1.1; social studies, 0.7; science, 0.7; physical education, 0.6; commerce, 6.3. For 1914-15, the total requirement was 13.4 units. For most of the subject fields, there is a small increase in the number of units required by the median school over the 16-year period. Mathematics, however, shows a decrease of from 1.8 units to zero units as a requirement in this curriculum. The requirement in English is practically the same as in other types of programs and curriculums, but other subject fields have yielded to make room for over six units of commercial work shown to be required. In this curriculum, there has also been an increase in the number of schools requiring work in music, art, industrial arts, and home economics. They are not represented in the average for the

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median school, however, since required in less than 50 per cent of all schools. It is also significant that while foreign language was required by 17.3 per cent of schools in 1914-15, it was required in less than 10 per cent of commercial curriculums in 1930-31.

4. SPECIFIC COURSES REQUIRED

Only schools of Group II considered.—Since data along the line concerned for the 1914-15 period were not available, only the schools of Group II are considered with reference to changes in specific courses required. Data are presented for each subject-matter field in Table 56, showing all courses required for 1924-25 and 1930-31 in the constants-with-variables type of program and in three specialized curriculums of the combination type of program.

TABLE 56.—The percentages of schools in Group II cities requiring certain courses in the various subject-matter fields, separate for the constants-with-variables type of program and for certain curriculums in schools employing the combination type of program. (Courses required in less than 10 per cent of the schools are not included)

Subject field and courses	Constants-with-variables type		Curriculum in the combination type of program					
			College preparatory		Commercial		General	
	1924-25 (42) ¹	1930-31 (52) ¹	1924-25 (172) ²	1930-31 (158) ²	1924-25 (90) ²	1930-31 (106) ²	1924-25 (57) ²	1930-31 (69) ²
1	2	3	4	5	6	7	8	9
English.....	100.0	100.0	100.0	100.0	97.8	100.0	98.2	100.0
American literature.....	33.3	.....	9.3	.....	.....	.....	10.6	.....
English literature.....	26.2	.....	9.3	.....	11.1	.....	.....	.....
Composition and rhetoric.....	40.4	.....	.....	.....	10.0	.....	.....	.....
English.....	57.2	100.0	90.7	100.0	94.4	100.0	91.2	100.0
History.....	95.2	96.2	95.4	96.3	86.7	91.5	91.2	92.7
World history.....	9.6	30.8	.....	.....	.....	9.4	.....	13.0
American history.....	85.7	84.6	95.3	88.0	84.4	86.0	89.5	81.2
Ancient history.....	21.4	.....	23.3	22.2	23.3	12.3	33.3	20.2
Modern history.....	33.4	26.0	27.9	15.2	24.6	.....	26.9	20.2
General history.....	.....	.....	9.3	.....	.....	.....	.....	.....
Medieval history.....	.....	.....	11.6	.....	.....	.....	.....	.....
History.....	.....	.....	.....	10.8	.....	.....	.....	15.9
Social studies.....	78.6	69.2	76.4	76.0	86.7	83.0	86.0	84.0
Civics.....	64.3	32.7	58.1	46.2	65.5	51.0	66.7	56.5
Community civics or citizenship.....	26.2	21.1	14.0	.....	22.2	12.3	22.8	14.5
Problems of democracy.....	16.7	.....	11.7	25.9	21.1	22.6	24.6	29.0
Economics.....	.....	11.5	18.6	.....	25.6	22.6	17.6	.....
Sociology.....	.....	.....	.....	.....	.....	.....	15.8	.....
Social sciences.....	.....	.....	.....	.....	.....	12.3	.....	.....

¹ Indicates the number of schools employing the constants-with-variables type of program.
² Indicates the number of schools employing this curriculum.

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TABLE 56.—The percentages of schools in Group II cities requiring certain courses in the various subject-matter fields, separate for the constants-with-variables type of program and for certain curriculums in schools employing the combination type of program. (Courses required in less than 10 per cent of the schools are not included).—Contd.

Subject field and courses	Constants-with-variables type		Curriculum in the combination type of program					
			College preparatory		Commercial		General	
	1924-25 (42)	1930-31 (52)	1924-25 (172)	1930-31 (158)	1924-25 (90)	1930-31 (106)	1924-25 (57)	1930-31 (69)
1	2	3	4	5	6	7	8	9
Mathematics.....	71.4	69.2	100.0	96.8	53.3	44.3	72.0	65.2
Elementary algebra.....	78.6	65.4	100.0	93.6	47.8	37.8	64.9	52.2
Plane geometry.....	62.4	42.3	97.7	91.1	16.7	10.3	42.1	26.1
Advanced algebra.....			51.2	52.0				
Solid geometry.....			16.3	24.0				
Trigonometry.....				15.2				
General mathematics.....							12.3	
Science.....	50.0	67.3	91.7	80.4	60.0	54.7	75.4	57.9
General science.....	31.0	38.5	30.0	41.3	37.8	33.0	42.1	40.6
Biology.....	16.7	17.3	37.2	27.2	23.3	17.0	31.6	26.1
Physical science.....		13.5		15.2				
Botany.....			18.6		10.0		12.3	
Chemistry.....			39.5	26.0	15.6		36.9	
Physics.....			65.1	34.8	22.2		43.9	
Physiology.....			9.3		11.1		10.5	
Foreign language.....	2.4	3.8	83.6	82.9	10.0		14.2	
Latin.....			97.7	42.4				
French.....			67.4	27.2				
Spanish.....			27.9					
Latin or other language.....				25.3				
French or other language.....				31.7				
Spanish or other language.....				18.4				
Commerce.....				12.5			12.3	
Shorthand.....					96.7	77.5		
Typewriting.....					86.6	91.5		
Commercial law.....					65.6	57.5		
Commercial geography.....					52.2	28.3		
Commercial arithmetic.....					77.8	63.1		
Bookkeeping.....					82.2	70.8		
Business English.....					26.6	29.4		
Office practice.....					23.3	27.3		
Penmanship.....					32.2			
Penmanship and spelling.....					13.3			
Elementary business training.....						27.4		
Salesmanship.....						16.1		

English.—English was a required subject in 1924-25 in all schools in practically all types of programs; in 1930-31 it was required in all. The courses listed as required in 1924-25 are American and English literature and composition and rhetoric. While it is likely that these same courses are required in 1930-31 in as large a number if not a greater number of schools, they do not appear thus in the table,

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due to the tendency on late programs of studies to list the offering simply as "English" with no further characterization of the course. Of all the subject fields, the requirement is greatest in English, with little variation in different types of programs or curriculums.

History.—Next to English, history is required in a greater number of schools, all types of programs considered. The course required most often is one in American history which is represented in at least 80 per cent of all programs. Except in the commercial curriculum, however, it shows a small decrease over the 6-year period. However, inasmuch as some schools listed the required work simply as "history," the cases in which American history is meant could be sufficient to overcome the margin of loss shown.

No other course in history, for either period, is required in as many as 40 per cent of all schools. Ancient and modern history were next in importance in all types of programs in 1924-25, but in each case a decrease over the 6-year period is shown. General history and medieval history were also required in a small number of schools for 1924-25, but not in a sufficient number in 1930-31 to appear in the table. The greatest increase shown by the table is for world history, which appears most often in the constants-with-variables type of program.

Social studies.—The social studies rank next to history in the consistency with which they are required in all types of programs. Although showing a decrease in each instance over the 6-year period, civics still ranked highest in 1930-31, with a range of 32.7 to 56.5 per cent, all types of programs considered. Community civics or citizenship, with about half the frequency indicated for civics, ranked second in 1924-25, but due to its correlation with courses in "social studies" and problems of democracy, it has also decreased in popularity over the 6-year period. Economics also shows a loss in all curriculums of the combination type, but the greater frequency of appearance of such courses as "Problems of Democracy," "Sociology," and "Social Studies" is recorded.

Mathematics.—In the field of mathematics, the course required most frequently is elementary algebra, followed by

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plane geometry. In 1930-31, these were the only two courses required in any but the college preparatory curriculum. They show an average decrease of about 10 per cent for each type of program, however, over the 6-year period. Advanced algebra, solid geometry, and trigonometry, although appearing only in the college preparatory curriculum, show small increments during the six years represented. While general mathematics was required in a small number of schools in 1924-25, it had decreased to less than 10 per cent of all schools in 1930-31.

Science.—General science and biology are the only courses in science required in all types of programs, but even these courses are not required in a half of all schools. Over the 6-year period, general science shows a significant increment in two kinds of curriculums but biology in most cases shows a loss. Physics and chemistry were required with considerable frequency in 1924-25 in the college preparatory curriculum but they also show a loss for 1930-31.

Foreign language.—Except in the college preparatory curriculum, foreign language is in no type of program required by 10 per cent of all schools. Where there is added to the figures shown for each language in the table, the percentage of schools indicating no specific language as required but making some requirement in foreign language, the percentage for Latin becomes 67.7; French, 50.9; and Spanish, 18.4. Even with such additions, however, a decrease in foreign language is shown by the 1930-31 college preparatory curriculum over the same curriculum for 1924-25.

Other fields.—The status of the fields of physical education, art, music, industrial arts, and home economics has been previously represented. No specific courses in these fields, designated other than by the general name of the field, were listed by as many as 10 per cent of all schools. A large number of commercial subjects are shown to be required in the commercial curriculum, but in no other type of program. The more traditional courses in commerce for the most part show a decrease over the 6-year period, but increments have been attained for business English, office practice, elementary business training, and salesmanship.

CHAPTER XV : RECENT TRENDS IN 152 PROGRAMS
A SUMMARY

1. THE GENERAL PLAN OF ORGANIZATION

Organization of grades.—Between 1924-25 and 1930-31 there has been a decrease of 6 per cent in the schools represented operating on the traditional 7-4 and 8-4 types of organization. For the same period, there has been a decrease of 9 per cent in the number of schools employing the 6-2-4 and the 5-2-4 types of organization. There has at the same time been an increase of 21 per cent in the number of schools operating on the 6-3-3 and the 6-6 types of organization.

Arrangement of programs.—Over the 16-year period, the few schools which were once employing the single and the multiple-curriculum types of program have all abandoned them. The combination type of program is favored most, but the increase has been greatest, especially in the Northern group, in the number of schools employing the constants-with-variables type of program.

Number and kinds of curriculums.—The number of curriculums offered by the 54 schools designated as Group I has increased from an approximate average of four in 1914-15 to an approximate average of five in 1930-31. Almost the same average is shown for 1930-31 by the 152 schools composing Group II, but there has been little increase during the six years represented. The highest average number of curriculums—almost seven—is offered in the Western group. The great variety of names employed to designate curriculums indicates the need of more definite terminology. While college preparatory curriculums are offered by the greatest number of schools, they did not constitute so great a percentage of the total in 1930-31 as they did at either of the earlier periods. The commercial curriculum, which shows a small increase in the late programs, ranks next in importance. The greatest increment, however, is shown for the number of schools in Group II which adopted the general curriculum.

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1. THE TOTAL OFFERING

The gross offering.—In the 54 schools of Group I, the average school shows a remarkable increase in the number of different units of work offered over the 16-year period. While the increment is not so great for the 6-year interval represented by the 152 schools of Group II, it is nevertheless significant. The greater number of units of work are offered by schools employing the combination type of program, but the greater increment is represented by schools employing the constants-with-variables type.

The offering in the major fields in Group I.—Changes in the number of units offered in different subject fields in the schools of Group I employing the constants-with-variables type of program indicate the greatest increments in social studies, science, physical education, music, commerce, industrial arts, and home economics. Decreases are shown for mathematics and history. In the college preparatory curriculum, the greatest variation is in the decrease in the commercial offering and in the increase for mathematics. The commercial curriculum shows a greater increase in commercial subjects and a decrease for industrial arts. For 1930–31, a total of 419 separate courses were offered by all schools.

The offering in the major fields in Group II.—For the schools of Group II, considerable increments are likewise attained by physical education and commerce in all types of programs. English and social studies show a smaller increase for all types. In industrial arts, there has been a significant increase for the constants-with-variables type of program as for home economics in the commercial curriculum. Other increments in special types of programs are shown for mathematics in the commercial curriculum; for music in the constants-with-variables type of program; and for art in the commercial curriculum. Changes for these fields in other types of programs are of little significance. There is likewise on the whole little change in the number of units offered in history, science, or foreign languages.

Specific courses offered.—The most significant changes in specific courses offered within the various fields are as follows:

English: Increase for journalism, public speaking, and debate and dramatics.

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History: Increase for world history, early European and modern European history. Decrease for ancient, medieval and modern history.

Social studies: Increase for "social studies," problems of democracy and vocations. Decrease for sociology, civics, and community civics. The decrease in the latter instance is due to the fusion of such work with courses designated as "social studies" and "problems of American democracy."

Science: Increase for biology.

Commerce: Increases for junior business training, office practice, and salesmanship.

On the whole, increments have been greater in the non-academic subject fields and in the more "practical" courses offered in academic fields. Although the schools included are fairly representative of cities with 2,500 to 20,000 population, the trends indicated can not be considered as fully typical of the country as a whole.

3. THE REQUIRED WORK

Gross requirements.—In the constants-with-variables type of program for 1930-31, approximately nine-sixteenths of the work is required by the average school. This represents an increment of one-half a unit for each group over the requirements of the earlier periods. Less than two units of work are elective in the college preparatory curriculum and approximately three units may be chosen in the commercial curriculum. In the former instance, there has been an increase of more than one unit in the requirement from the early to the later period, but there has been little change in the average for the commercial curriculum over the same interval.

Requirements in major subject fields.—Considerable variation is shown in the amount of work required by different schools in the several subject fields. Nearly four units of English are required, however, for all types of programs. In addition to this requirement, the median school of Group II, employing the constants-with-variables type of program, in 1930-31 required 1.8 units of history, 0.7 unit in the social studies, 1.5 units in mathematics, and 0.9 unit in science. For the college preparatory curriculum these requirements are increased in the median school. In the median school employing the commercial curriculum, the requirement in the various subject fields is for the most part less than that shown

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for the constants-with-variables type of program in order to make room for a requirement of more than six units in commercial subjects.

Specific courses required.—Few specific courses within any subject field are required in as many as half of all programs. In the constants-with-variables type of program, English, American history and civics, algebra, and plane geometry are represented by such a requirement. The last two courses especially show a decrease over the 6-year period. In the college preparatory curriculum, foreign language is also represented by this average, while in the commercial curriculum, such courses as bookkeeping, shorthand, typewriting, commercial law, and commercial arithmetic are required in more than 50 per cent of all schools.

CHAPTER XVI : TRENDS IN 35 PROGRAMS OVER A QUARTER CENTURY

1. PURPOSE AND CONDITIONS OF THE STUDY

Purpose of the study.—The present chapter summarizes the results of an investigation fostered by the National Survey of Secondary Education as conducted by George E. Van Dyke.¹ In 1921, Stout published a study of the curriculum offerings, between 1860 and 1918, of certain schools in the Middle West.² Van Dyke analyzed programs of studies secured for 1929–30 from some of the same schools. His study enables comparison of the offerings of 35 identical schools at three different periods: 1906–1911; 1915–1918; and 1929–1930. Because, for each of the three periods, the programs of studies represented are from identical schools, the comparisons reveal real trends rather than differences that might be attributed to differences in the communities represented.

Location and nature of the schools represented.—Of the 35 schools represented, 9 are located in cities in Michigan, 7 in cities in Illinois, 6 in Wisconsin, 3 in South Dakota, 2 each in Indiana, Iowa, Kansas, and Missouri, and 1 each in Nebraska and Ohio. The average population of the cities at the 1906–1911 period was 16,178; at the 1915–1918 period, 19,516; and at the 1929–1930 period, 26,944. Although advance in years has brought changes in the grade organization of the high schools represented (in 1929–30, only grades 10, 11, and 12 were included in the senior high school organization of 10 schools), in all cases data were secured from four grades: 9, 10, 11, and 12, so as to make possible the comparison with the earlier periods.

Method of the report.—To facilitate comparisons, the exact methods described by Stout were followed as far as possible in assembling data from the programs for 1929–1930. Stout

¹ For a more detailed report, see Van Dyke, George E. Trends in the Development of the High-School Offering, I and II. *School Review*, 39:557–664, November 1931; 737–747, December, 1931.

² Stout, John Elbert. The Development of High-School Curricula in the North Central States from 1860 to 1918. Supplementary Educational Monograph No. 14, Chicago. Department of Education, University of Chicago, 1921.

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does not show the work required by the schools in the early periods, and for this reason comparisons are limited to the nature of the curriculums and the subjects offered at the three periods. The required work for 1929-1930, however, is presented. Sixty schools are included in the tabulations of curriculums offered as compiled for the two early periods by Stout. Stout's list, however, includes the 35 schools for which data are presented in all other connections. For the comparisons made in this connection, the greater number of schools represented in the first and second periods must be borne in mind.

1. THE CURRICULUMS OFFERED

Number of curriculums offered.—Trends over the 25-year period have been to allow the pupil a choice of several distinct curriculums instead of offering one curriculum only which includes constants required of all pupils and variables adaptable to the individual. In 1906-1911, 23 schools offered the constants-with-variables type of program arrangement, as contrasted with 15 schools for 1915-1918 and with 7 schools for 1929-1930. All other schools at these periods offered more than one curriculum, ranging from 2 to 6 for 1906-1911, and from 2 to 19 for 1929-1930. The number of curriculums offered has therefore tended to increase—from an average, including all schools, of 2.5 in 1906-1911, to 4.6 in 1915-1918, and to 5.2 in 1929-1930. Even where averages are computed to include schools offering more than one curriculum only, the same tendency, though not so marked, prevails. The average school listing more than one curriculum in 1906-1911 offered 3.9 curriculums; in 1915-1918, 5.9 curriculums; and in 1929-1930, 6.1 curriculums.

Kinds of curriculums offered.—A tabulation of the number of separate names given to curriculums offered reveals considerable lack of uniformity in designation. For 1906-1911, 46 separate titles were used by 60 schools to label the curriculums offered; for 1915-1918, 77 titles were employed by the same number of schools; while for 1929-1930, 35 schools used 57 separate titles. Little uniformity obviously exists, either in the late or in the early period, in names given to curriculums offered.

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Summary of three groups of curriculums.—Although in some cases the titles indicate distinctions in the kinds of curriculums offered, in others the distinction is more of language than of content. The different titles are summarized in Table 57 to reveal the numbers and percentages of curriculums of three distinct types, namely, college preparatory, general, and fine and practical arts, offered at the three periods. Fine and practical arts are in turn subdivided into five groups. In interpreting the data of the table it should be recalled that 60 schools are represented for the 1906-1911 and 1915-1918 periods, while only 35 are represented for 1929-1930.

TABLE 57.—Numbers and percentages of three groups of curriculums offered at three periods

Group	1906-1911		1915-1918		1929-1930	
	Number	Per cent	Number	Per cent	Number	Per cent
1	2	3	4	5	6	7
College preparatory.....	80	55.3	100	41.8	60	33.5
General.....	13	9.2	18	7.5	28	14.5
Fine and practical arts.....	49	34.5	121	50.6	93	52.0
Commercial.....	32	22.5	44	18.4	41	22.9
Industrial arts.....	10	7.0	33	13.8	24	13.4
Household arts.....	1	.7	19	8.0	14	7.8
Fine arts.....	1	.7	3	1.3	7	3.9
Miscellaneous (agriculture, normal training, etc.).....	5	3.5	22	9.2	7	3.9
Total.....	143	100.0	239	100.0	179	100.0

Less emphasis on college preparation.—College preparatory curriculums are most prevalent at each period, but it will be observed that they constitute a declining proportion with each succeeding period. Percentages for other types of curriculums show that the relative decrease for the college preparatory type of curriculum has resulted from the offering of more curriculums calculated to provide wider and richer contacts for secondary-school pupils. The commercial curriculum shows a slight increase, industrial and household arts curriculums show marked increases between 1906-1911 and 1915-1918, and the general and fine arts curriculums have increased substantially from the first to the last periods.

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The trend is toward more curriculums to provide for those interested in the fine and the practical arts. The proportion of curriculums of these two types increased from 34.5 per cent in 1906-1911 to 52 per cent in 1929-1930 of the total number offered.

3. THE REQUIRED WORK

Few subjects required in 1929-1930.—Because Stout does not indicate the subjects required of all pupils in 1906-1911 and 1915-1918, only those required in 1929-1930 can be given. It is interesting to note that the only subjects required of all pupils by as many as half the schools are English, American history, and physical education, which were required, respectively, by 100 per cent, 85.7 per cent, and 60 per cent of the 35 schools represented. Social studies other than American history were variously required; civics in 25.7 per cent, citizenship in 14.3 per cent, economics in 14.3 per cent, community civics in 8.6 per cent, "social studies" in 8.6 per cent, and modern history in 5.7 per cent of the 35 schools.

In the field of mathematics, algebra was required by 45.7 per cent and geometry by 34.3 per cent of the schools represented. The only science required was biology; that subject was prescribed by only 8.6 per cent of all schools. Music and library were each required by 5.7 per cent of the schools. Modification of the curriculum in the modern high school to make it appeal to the needs of pupils other than the college preparatory type is evidenced, especially by the fact that no one of the schools required foreign language of all pupils and less than half required mathematics.

4. THE TOTAL OFFERING

Outline of information presented in this section.—Most of the data included in this study relate to the total offering and its distribution to subject fields. In this section of the report are presented: (1) The gross number of units of work in the total offering at certain periods between 1860 and 1930; (2) the number of schools offering each major subject field during 1906-1911, 1915-1918, and 1929-1930; (3) the number of courses offered in each field; and (4) the nature of the courses offered in each field at the three periods.

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Increments in the gross offering, 1860 to 1930.—Certain data are presented in Stout's monograph for five periods preceding 1906-1911, from which it is possible to show, as in the last column of Table 58, average yearly differences in the total offerings of the schools represented, between 1860 and 1906, as well as between 1906 and 1930. During the four equal periods between 1860 and 1895, the number of units in the total offering changed very little, the averages reveal. Beginning with 1896, however, a consistent increment is shown with the advance of years in the yearly offering of the average school.

TABLE 58.—*The number of units of work offered in the average school at certain periods between 1860 and 1930*

Period	Number of schools represented	Number of units of work offered			Yearly difference in units offered by average school
		Academic fields	Nonacademic fields	Total	
1	2	3	4	5	6
1860-1865.....	7	16.2	1.1	17.3	-----
1871-1875.....	9	18.9	.9	19.8	+0.25
1881-1885.....	18	18.2	.7	18.9	-.09
1891-1895.....	28	18.6	1.2	19.8	+.09
1896-1900.....	32	19.2	1.5	20.7	+.18
1906-1911.....	35	24.1	8.0	32.1	+1.14
1915-1918.....	35	24.9	15.3	40.2	+1.01
1929-1930.....	35	28.9	38.3	67.2	+2.08

A separate tabulation of the units of work offered in the academic and in the nonacademic fields reveals that, even though physical education units were not included, increments for music, art, household and industrial arts, and all subjects classified as nonacademic, are much greater than for English, social studies, mathematics, and the subjects classified as academic. Since 1900, the offering of the American high school has expanded significantly in all fields, but to much the greater extent in providing newer and richer content in the fine and practical arts.

The number of schools offering each major subject field.—Changes have been greater in the variety of courses offered within each subject field, but before these data are considered

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report will be made on the number of schools which have widened their program in the later years to include fields not offered at earlier periods. Practically all schools offered all fields classified as academic at all three periods: English, social studies, mathematics, and science were offered in each of the 35 schools at each period, and foreign language in all cases except for 1 school in 1915-1918.

It is in the nonacademic fields, however, that significant increments have resulted. No commercial studies were offered in 5 schools during the 1906-1911 period, but in all schools at the two later periods; industrial and household arts were offered in all but 1 school in 1929-1930, but this represents proportional increases, respectively, of one and one-half and two times the number of schools offering these fields at the earlier periods; physical education and the fine arts, although offered scarcely at all in the first two periods, were offered by 30 and 28 of the 35 schools, respectively, in 1929-1930.

The number of different courses offered.—Before presenting for each field the totals in number of all courses offered, a better idea of the tendency toward enrichment of the high-school program may be had from consideration of the number of different courses making up the offering for each period. Actual count shows that in 1906-1911, 53 courses, and in 1915-1918, 72 courses with distinct titles appeared in the 35 programs, while in 1929-1930 the number had increased to 306. It is true that the materials of instruction probably differ little in some of the courses which bear different titles. An increase of 475 per cent, however, in the number of courses listed from the first to the last period may certainly be taken as indicative of efforts toward a richer and more varied offering for the modern high-school pupil.

The number of courses offered in each field.—The total of all courses offered at the three periods in each of 11 major fields of instruction, such as English, social studies, mathematics, etc., together with the calculated average in number offered and the percentages of increase from period to period are given in Table 59. The total for all subject groups together,

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TABLE 59.—The total and the average numbers of courses offered, and the percentages of increase or decrease in the average numbers offered in the various subject fields of 35 schools in 1906-1911, 1915-1918, and 1929-1930

Subject field	Total number of courses offered by all schools			Average number of courses offered			Percentage of increase or decrease in average number offered		
	1906-1911	1915-1918	1929-1930	1906-1911	1915-1918	1929-1930	1906-1911 to 1915-1918	1915-1918 to 1929-1930	1906-1911 to 1929-1930
i	2	3	4	5	6	7	8	9	10
English.....	42	-----	126	1.2	-----	3.6	(¹)	(¹)	200
Social studies.....	164	167	244	4.7	4.8	7.0	0.2	46	49
Mathematics.....	141	137	183	4.0	3.9	5.2	3.0	33	30
Science.....	188	177	172	5.4	5.1	4.9	-6.0	-4	-9
Foreign language.....	90	97	117	2.6	2.8	3.3	8.0	18	27
Commerce.....	146	230	283	4.2	6.6	8.1	57.0	23	93
Industrial arts.....	22	60	166	.6	1.7	4.7	183.0	176	683
Household arts.....	19	50	101	.5	1.4	2.9	180.0	107	480
Fine arts.....	1	1	167	.1	.1	4.8	-----	15,900	15,900
Physical education.....	-----	-----	50	-----	-----	1.4	(²)	(²)	(²)
Miscellaneous (agriculture, pedagogy, etc.)...	15	25	74	.4	.7	2.1	75.0	200	425
All subject fields...	828	944	1,683	23.7	27.0	48.1	14.0	78	103

¹ The separate courses for the field of English were not reported for the second period.
² No courses in physical education were offered in the first and second periods.

while showing an increase between 1906-1911 and 1915-1918, of from 828 to 944, is most marked for the 1929-1930 period with a total of 1,683 courses, or more than double the number offered at the earliest period. All fields except science show an increase. In the academic fields the percentages of increase range from 27 for foreign languages to 200 for English. In the nonacademic fields, however, the increment has been much more marked: From 93 per cent increase for the commercial studies to 15,900 per cent increase for the fine arts.

The nature of the courses offered in each field.—Limitations of space will not permit listing the names of all the courses offered for the three periods within each field. The number of schools offering those most frequently appearing in the program of studies, however, are listed under each major subject field for the separate periods in Table 60. The numbers in parentheses opposite each subject field represent the number of different courses (as judged by the different titles)

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offered within that field. For example, in the field of English, in 1906-1911, 6 courses were offered; in 1915-1918, the separate courses were not designated and only 1 course is shown as being offered; in 1929-1930, 20 courses were offered.

TABLE 60.—Number of schools offering courses within the various subject groups for each of three periods

Subject field and courses	1906-1911	1915-1918	1929-1930
1	2	3	4
ENGLISH			
General course.....	(6) 35	(1) 35	(20) 32
Public speaking.....	1		19
Journalism.....			18
SOCIAL STUDIES			
American history.....	(8) 33	(9) 32	(33) 35
Ancient history.....	31	24	23
Medieval history.....	30	29	10
Civics.....	29	29	23
English history.....	22	19	4
Economics.....	17	21	33
Modern history.....			26
Sociology.....			15
MATHEMATICS			
Algebra.....	(6) 35	(6) 35	(13) 34
Geometry.....	35	35	35
Solid geometry.....	32	34	35
Trigonometry.....	20	19	26
Advanced algebra.....			32
SCIENCE			
Physics.....	(10) 35	(9) 35	(20) 35
Chemistry.....	33	33	33
Physiography.....	30	19	11
Botany.....	29	24	9
Physiology.....	23	18	15
Zoology.....	21	14	6
Biology.....	7	16	20
General science.....	1	15	19
FOREIGN LANGUAGES			
Latin.....	(5) 34	(6) 34	(9) 35
German.....	34	32	18
French.....	11	14	23
Greek.....	6	3	5
Spanish.....	3	13	20
COMMERCIAL STUDIES			
Bookkeeping.....	(8) 27	(14) 33	(44) 35
Stenography.....	25	33	35
Typewriting.....	23	35	35
Commercial geography.....	21	24	22
Commercial law.....	20	29	27
Commercial arithmetic.....	19	23	27
Commercial English.....	8	15	2
Salesmanship.....		5	16
INDUSTRIAL ARTS			
Manual training.....	(2) 21	(13) 28	(45) 13
Mechanical drawing.....	1	5	29
Printing.....		2	15
Woodwork.....			14
Automobile mechanics.....			10

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TABLE 60.—Number of schools offering courses within the various subject groups for each of three periods—Continued

Subject field and courses	1906-1911	1915-1918	1929-1930
1	2	3	4
HOUSEHOLD ARTS			
Domestic science.....	(3)	(10)	(24)
Foods.....	15	28	5
Clothing.....			13
Home economics.....			12
Sewing.....			9
Cooking.....			9
			7
FINE ARTS			
Art (general).....	(1)	(1)	(28)
Design.....	1	1	18
Orchestra.....			4
Band.....			21
Chorus.....			18
Freehand drawing.....			13
Glee club.....			11
Music (general).....			11
Music appreciation.....			11
			10
PHYSICAL EDUCATION			
General course.....	(.)	(.)	(11)
			27
MISCELLANEOUS			
Pedagogy.....	(4)	(3)	(44)
Psychology.....	6	10	2
Psychology.....	5	7	6
Agriculture.....	3	18	7

NOTE.—The numbers in parentheses in each case represent the number of differently named courses offered in each subject group.

Contrast in provisions for needs of academic and nonacademic pupils.—An idea of changes in the relative emphasis placed upon the needs of academic and nonacademic pupils with the advance of years may be had from a computation of the percentages of courses in the fields making up the two groups which were offered at each period. In 1906-1911, courses offered in English, social studies, mathematics, science, and foreign languages (considered as the academic studies) constituted 76 per cent of the total number offered; in 1915-1918, they constituted 61 per cent; and in 1929-1930, they constituted only 50 per cent of the total for all fields. The diminution for this group of subjects is due to the relatively greater number of courses in the fine and practical arts, or nonacademic group, offered in later years. The titles listed in the

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table indicate a more emphatic trend of courses in the non-academic fields toward practical rather than theoretical content.

Nature of newer courses in academic fields.—Although the names of all courses offered are not shown in the table for each subject field, a few examples will indicate, even for the academic fields, the more immediately significant nature of the high-school offering in later years. In English a decreased offering of such courses as composition, rhetoric, and grammar is accompanied by an increase in courses designated as public speaking, journalism, dramatics, effective speaking, current literature, and interpretative reading. In social studies, although courses in ancient, medieval, and English history, and in civics have decreased with the advance of years, there has been an increase in the number of schools offering economics, modern and world history, sociology, citizenship and contemporary life, vocational civics, and occupations.

In mathematics, science, and foreign languages the number of courses offered increased less than in the other fields. Significant of the emphasis given to exploratory needs of pupils by the modern junior high school, however, is the fact that among schools having the ninth grade in this type of organization, a tendency is noticeable to offer courses in applied and general mathematics and in exploratory and general science.

5. SUMMARY

1. Over the quarter century represented, the tendency has been increasingly to organize the program of studies to allow pupil choice from two or more curriculums. Schools offering only one curriculum of the constants-with-variables type decreased from 23 at the early period to 7 at the late period. More attention to the needs of the pupil not preparing for college is seen from the fact that with the increase in number of curriculums offered, the proportion of college preparatory curriculums has decreased, while the proportion of general, fine arts, and practical arts curriculums has increased.

2. The subjects required in 1929-1930 indicate that the early practice of requiring strictly college preparatory subjects of

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all pupils for graduation is being abandoned. Only English, American history, and physical education were required by half the schools. Algebra was required by 45.7 per cent and geometry by 34.3 per cent of all schools. Except for certain social studies (aside from American history), variously required in from 5 to 27 per cent of the schools, no other subject was required by as many as 10 per cent of all schools.

3. The most significant changes over the full period are shown in the tendency to provide a much wider range of materials of instruction, and these of a richer and more practical nature. Between 1860 and 1895, the number of units offered by the average school changed very little; between 1895 and 1918, the average school shows an increment of approximately one unit per year; and between 1918 and 1930, an increment of approximately two units per year is shown for the average school. The number of *different* courses offered increased 475 per cent between 1906 and 1930, while the total number offered more than doubled. These increments are far greater in the nonacademic than in the academic fields, but in each the tendency is to make the offering more immediately significant.

CHAPTER XVII : TRENDS IN 15 COMMONWEALTH FUND SCHOOLS

1. PRELIMINARY STATEMENTS

Relation to junior high school study.—Paralleling closely the study made by Glass of the junior high school curriculum is another one made under subvention from the commonwealth fund and dealing with the senior or 4-year high school curriculum. This study was made by Counts.¹ Several of the systems in the former study are also represented in Counts' study. The same reasons which prompted a repetition of Glass' study made the bringing down to date of Counts' study also desirable.

Cities included.—The 15 cities represented in the present study are Atlanta, Berkeley, Cleveland, Detroit, Joliet, Kansas City (Mo.), Lincoln, Los Angeles, New Orleans, Newton (Mass.), Pueblo, Rochester (N. Y.), St. Louis, Salt Lake City, and Trenton. Eight of these cities as may be seen by reference to Chapter VII, were represented in the study made by Glass.

Method of the study.—The plan followed in conducting the study is similar to that employed in the study of the junior high school curriculum. From the superintendent of schools in each city were secured assurances of cooperation and the names of the officials to whom forms were to be sent. The data collected are for the second semester of the year 1930-31, thus paralleling those secured by Counts for the second semester of 1923-24. When information is not for the city as a whole, it was secured from the same individual schools as are represented in the study for 1923-24. As far as possible, the exact methods followed by Counts were followed. In all cases the last four years of 11- or 12-grade systems are represented.

Organization of this chapter.—The information secured is treated in this chapter as follows: (1) The general plan of

¹ Counts, George S. *The Senior High School Curriculum, Supplementary Educational Monographs, No. 29, 1926.* The University of Chicago Press.

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organization, which includes the proportion of pupils of high-school age enrolled, the plans on which grades are organized, the types of secondary schools in the various cities, and the number of curriculums offered; (2) the total offering, treating by cities the number of units of work in each major subject field; (3) the required work, under which is shown the number of schools requiring each major subject field and the total number of semester hours required in each field; (4) the subjects of study, showing the percentage of recitation time devoted to each subject field and the percentage of the time allotted to major subjects within each field.

1. THE GENERAL PLAN OF ORGANIZATION

Proportion of pupils of high-school age enrolled.—In Table 1 of his monograph Counts shows for each city the percentage which the high-school enrollment is of the estimated population of the city from 14 to 17 years of age. The average for all schools was 39.6 per cent in 1923-24. For the nine cities of this group with more than 100,000 population, the Federal census of 1930 shows the number of pupils aged 14 to 17 years and the number of pupils of this age who are attending school. In six of the cities in 1930, the percentage of pupils aged 14 to 17 enrolled in schools more than doubled the percentages shown by Counts for 1923-24; for two cities the 1930 percentages tripled those of 1923-24; and in one city the 1930 percentages were one and one-half times those of 1923-24. The average for the nine cities of more than 100,000 population for 1930 shows 78.3 per cent of those 14 to 17 years of age in attendance. It is probable, however, that the method employed by Counts in securing his averages is a more conservative one than the present method. If so, the increment is somewhat exaggerated.

Organization of school grades.—In 1923-24, 11 of the 15 cities either operated completely on the 6-3-3 plan or were in transition to this plan; 2 schools operated on the traditional 8-4 plan; 1 school operated on the 6-2-4 plan; and 1 school was on the 6-2-3 plan. By 1930-31, however, there were several changes in types of organization. Only 9 systems were organized on the 6-3-3 plan, and 2 of these

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9 also had schools on the 6-6 plan, while 1 had added junior-college work to make the 6-3-3-2 plan. The remaining six cities were variously organized: Two were on the traditional 8-4 plan and 1 of these 2 was on the 6-3-3 plan in 1923-24; 1 was on the 7-4 plan; 1 was divided between the 7-4 and the 6-3-2 plans; 1 was on the 6-2-4; and 1 on the 6-2-3 plan. These data indicate that in 1930-31 some cities had not yet decided on any one plan of organization as being best suited to their needs.

Number of high schools of certain types.—The number of high schools of various types within each of the 15 cities at the two periods is presented in Table 61. The table shows that in 1930-31 these cities had one and one-half times as many high schools as in 1923-24. The total number of 4-year high schools did not change during the seven years; the number of 3-year senior high schools more than doubled; the number of 3-year junior high schools was multiplied by one and one-half, and the number of high schools of some other types was almost tripled during the 7-year interval. The greatest increments are shown for Detroit, Lincoln, Los Angeles, and New Orleans.

Number of curriculums.—The number of curriculums offered changed little during the seven years represented. The average for 1923-24 was 8.1 curriculums as against 8 curriculums in 1930-31. In 1923-24, however, 13 of the schools offered more than one curriculum, while in 1930-31 this number was reduced to eight. Space does not permit listing of the many kinds of curriculums which were offered at the two periods.

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TABLE 61.—Number of public secondary schools of the various types in each of 15 cities, 1923-24 and 1930-31

City	4-year high schools		3-year senior high schools		3-year junior high schools		2-year junior high schools		High schools of some other type		Total	
	1923-24	1930-31	1923-24	1930-31	1923-24	1930-31	1923-24	1930-31	1923-24	1930-31	1923-24	1930-31
1	3	3	4	5	6	7	8	9	10	11	12	13
Atlanta.....	1	1	3	4	4	7	7	7	1	1	9	12
Berkeley.....	1	1	1	1	4	4	4	4	1	1	6	6
Cleveland.....	5	3	7	9	17	22	22	1	1	2	30	34
Detroit.....	10	6	10	10	6	19	19	1	2	2	16	37
Joliet.....	1	1	1	1	1	1	1	3	1	1	1	1
Kansas City.....	2	6	3	3	3	1	3	3	1	3	8	12
Lincoln.....	1	1	1	1	2	2	4	4	8	15	3	8
Los Angeles.....	7	9	2	6	13	23	23	1	1	1	30	38
New Orleans.....	4	13	1	1	1	2	2	1	1	1	4	13
Newton.....	3	3	1	1	1	1	1	1	1	1	2	3
Pueblo.....	1	1	1	1	1	1	1	1	1	1	2	2
Rochester.....	4	4	4	2	4	4	2	1	1	3	8	10
St. Louis.....	6	6	7	7	7	8	8	1	2	2	9	10
Salt Lake City.....	2	2	1	1	3	4	4	4	1	1	4	6
Trenton.....	1	1	1	1	1	1	1	1	1	1	1	1
Total.....	47	47	17	38	62	92	6	4	11	31	143	216

NATIONAL SURVEY OF SECONDARY EDUCATION

3. THE TOTAL OFFERING

Number of units of work offered.—The 7-year period represented has witnessed a large increment for the schools represented in the number of units of work offered in such major subject fields as English, social studies, mathematics, and the like. The data are presented for each of the cities in Table 62. Over the 7-year period there has been an increase for the average school in each major subject field with the exception of English, physical education, and commerce. The average for the former is the same at the two periods, while the latter two show a loss of one unit from the earlier to the later period. The greatest increment is shown for the industrial arts, which increased from 13 units in 1923-24 to an average of 24 units in 1930-31. This great increase is due in a large measure to the increment in the offering at Los Angeles. Averages for all schools indicate a substantial increase in the total offering of from 79 units in 1923-24 to 100 units in 1930-31. Five schools show a decrease in the total units of work offered over the 7-year interval, but an increase is shown for the remaining 10.

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TABLE 62.—Number of units of work offered in the high schools of each of 15 cities in each of 11 major divisions of subject matter

City and year	English	Social studies	Mathematics	Science	Physical education	Music	Art	Industrial arts	Home economics	Foreign language	Commercial subjects	Miscellaneous subjects	Total
1	2	3	4	5	6	7	8	9	10	11	12	13	16
Atlanta:													
1924.....	6	5½	4½	4½	2	2	2	14	8	10	12½	1	72
1931.....	9½	7½	7	7½	1½	3½	4½	13½	4	13	9½	1	81½
Berkeley:													
1924.....	8½	5	5	6	4	11	5	21	8	12	12½	½	93½
1931.....	11	5½	5	7	1	10	7½	5½	12	15	17	.....	104
Cleveland:													
1924.....	7	6½	4	5½	4	4	4½	19	6	12	12½	2	87½
1931.....	5	9½	5	6	1½	1½	4½	23½	6½	16	13	.....	90½
Detroit:													
1924.....	5½	6	4½	4	6	2	4	6	5½	14½	8½	½	67
1931.....	6	8½	6½	4	1½	4	6	7½	9	16	9½	.....	79½
Joliet:													
1924.....	6½	5	5	7	4	7½	.....	14½	4	14	12	.....	79½
1931.....	6½	5½	3	9	1½	5½	5½	40	13	10	18	.....	111½
Kansas City:													
1924.....	10	6	6	7	6	6	6	10	6	12	12	1	88
1931.....	6	5½	5½	9	3½	5	2	5	2½	16	6	.....	66
Lincoln:													
1924.....	8	5	4½	7	4	5	3½	4	3	12	10½	2	63½
1931.....	9½	5½	5½	6	2	1½	4	21½	4½	12½	7½	3½	83½
Los Angeles:													
1924.....	9	6½	6	6½	4	12½	12	30	7	12	16	6	127½
1931.....	14½	8	9	23½	5	20½	23½	101½	30½	22	20½	9	287½
New Orleans:													
1924.....	5½	4	5	5	1½	1½	6	2	6	11	9	½	57
1931.....	5½	4½	4	5	1	3½	2½	3½	2½	16	14	.....	60½
Newton:													
1924.....	6	6	5½	7½	4	2	6	27	11	13	13	4	105
1931.....	4½	6	5	8	4	2	1	20	9	16	16½	.....	92

NATIONAL SURVEY OF SECONDARY EDUCATION

TABLE 62.—Number of units of work offered in the high schools of each of 15 cities in each of 11 major divisions of subject matter—Continued

City and year	English	Social studies	Mathematics	Science	Physical education	Music	Art	Industrial arts	Home economics	Foreign language	Commercial subjects	Miscellaneous subjects	Total
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Fuelbio: 1924.....	6	4	3½	4½	1	3½	2	10	3	10	8	1	51
1931.....	7	5½	4	4½	8	4	4	16	4	10	8½	.....	68½
Rochester: 1924.....	5½	4	4	5½	2½	4	4	4	2	13	14½	.....	63
1931.....	5	5½	7½	6	.....	14½	11	44½	4	15	8	.....	120½
St. Louis: 1924.....	6	7½	5	7	2	3	4	11½	4	15	12	.....	77
1931.....	6	6	5	5	.....	7	4	6	4	22	6½	.....	71½
Salt Lake City: 1924.....	7½	5½	4½	6	4	5	3	15½	8	13	11½	.....	83½
1931.....	6	7	6½	8	1½	4	2½	5	5	13	8½	.....	67½
Trenton: 1924.....	4½	4	5	5½	1	1	3	7	2	12	15	.....	60
1931.....	4	5	10½	4½	1	½	2½	2½	1	12	10½	54½
Average: 1924.....	7	5½	5	6	3	4½	4	13	5½	12½	12	1	79
1931.....	7	6½	6	7	2	7	7	24	7½	15	11	1	100

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The total offering at Los Angeles.—The greatest increase in the total offering is indicated for the city of Los Angeles. Counts showed in detail the designation of a total of 127½ units of work offered in Manual Arts High School of this city in 1923-24. Although lack of space will not permit the repetition of that table here, an idea of the even greater variety of courses now offered in this city may be had from Table 63, showing a total of 287½ units in the specific courses offered in grades 9 to 12 for the city as a whole in 1930-31. It has already been seen in Table 62 that there was an increase for Los Angeles in every subject field over the 7-year period. Noteworthy increments are shown for the industrial arts, home economics, science, foreign languages, music, and art.

4. THE REQUIRED WORK

Subjects required of all pupils.—Several changes have taken place over the 7-year period in the number of schools requiring certain of the major subject fields. A comparison of these data for the two periods is afforded in Table 64. The most significant increments in the required work have been, especially in grades 9 and 10, in the fields of social studies, science, and physical education. Decreases are shown for grade 9 in the number of schools requiring mathematics, industrial arts, and home economics. Few changes are shown for grades 11 and 12 in which English, social studies, and physical education are almost the only subjects required. There has been an increase, however, in the number of schools requiring physical education in grade 11 and in the number requiring English in grade 12.

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TABLE 63.—The total offering in grades 9, 10, 11, and 12, 1930-31, Los Angeles, Calif.

Designation of course	Number semester hours of credit allowed	Designation of course	Number semester hours of credit allowed
English:		Science:	
English 1 and 2.....	10	Biology 1 and 2.....	10
English 3.....	5	Biology 3 and 4.....	10
English 4.....	5	Physiology 1 and 2.....	10
Oral English B9 and A9.....	5	Botany 1 and 2.....	10
Dramatics 1.....	2½	Zoology 1 and 2.....	10
Dramatics 2.....	5	Hygiene.....	1
Dramatics 3.....	5	General science 1 and 2.....	10
Dramatics 4.....	5	Physics 1 and 2.....	10
Directing.....	2½	Applied physics 1 and 2.....	10
Public speaking 1 and 2.....	10	Upper-grade physical science 1 and 2.....	10
Journalism B9 and A9.....	2½	Chemistry 1 and 2.....	10
Journalism 1 and 2.....	10	Chemistry for nurses.....	3
Upper-grade composition.....	5	Electricity 1 and 2.....	20
Creative writing.....	5	Electricity 3 and 4.....	10
English literature 1 and 2.....	10	Electricity 5 and 6.....	10
Types of literature 1 and 2 (novel, short story, drama and essay).....	10	Surveying 1 and 2.....	20
Shakespeare.....	5	Minerology.....	5
American literature.....	5	Geology 1 and 2.....	10
Modern literature.....	5	Assaying.....	5
World literature.....	5	Engineering problems.....	5
School annual.....	5	Projection.....	5
Senior review.....	10	Photography 1, 2, 3, and 4.....	40
Library science 1 and 2.....	10	Total.....	234
Total.....	142½	Health and physical education:	
Social studies:		Ninth, tenth, eleventh, and twelfth grade physical education; boys—including healthful living.....	
Social studies 1 and 2.....	10		10
Aviation history (experimental).....	5	Ninth, tenth, eleventh, and twelfth grade physical education; girls—including healthful living.....	
International relations.....	5		10
Modern world history (since 1789) 1 and 2.....	10	Ninth, tenth, eleventh, and twelfth grade corrective physical education; boys—including healthful living.....	
United States history 1 and 2.....	10		10
United States history and civics 1 and 2.....	10	Ninth, tenth, eleventh, and twelfth grade corrective physical education; girls—including healthful living.....	
Civics.....	5		10
Economics.....	5	Ninth, tenth, eleventh, and twelfth grade corrective physical education; girls—including healthful living.....	
Occupational orientation.....	5		10
Pan Pacific history.....	5	Military science and tactics.....	
Problems of democracy.....	5		10
Social problems.....	5	Total.....	50
Total.....	80	Music:	
Mathematics:		Music B9 and A9.....	
General mathematics B9 and A9.....	10		10
Social arithmetic B9 and A9.....	10	Music organization (junior high school).....	
Related mathematics (boys).....	10		5
Algebra B9 and A9.....	10	Music appreciation.....	
Algebra 1 and 2.....	10		2½
Algebra 3 and 4.....	10	History of music 1 and 2.....	
Plane geometry 1 and 2.....	10		10
Solid geometry.....	5	Elementary music theory and sight reading 1 and 2.....	
Trigonometry.....	5		10
Applied mathematics 1 and 2.....	10	Harmony 1 and 2.....	
Total.....	90		10
		Harmony 3 and 4.....	
			10
		Glee club.....	
			15
		Chorus.....	
			2½
		Voice.....	
			15
		Band.....	
			15
		Orchestra.....	
			15

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TABLE 63.—The total offering in grades 9, 10, 11, and 12, 1930-31, Los Angeles, Calif.—Continued

Designation of course	Number semester hours of credit allowed	Designation of course	Number semester hours of credit allowed
Music—Continued.		Industrial Arts—Continued.	
Vocational orchestra.....	15	Cabinet making 1, 2, 3, and 4.....	20
Band and orchestra instruments (junior high school).....	5	Vocational cabinet making 1, 2, 3, and 4.....	40
Band and orchestra instruments (senior high school).....	15	Vocational carpentry 1, 2, 3, and 4.....	40
String quartets and ensembles.....	15	Ceramics 1 and 2.....	10
Violin (senior high school).....	15	Vocational ceramics 1, 2, 3, and 4.....	40
Pipe organ 1 and 2.....	5	Vocational cooking 1, 2, 3, and 4.....	40
Piano.....	15	Architectural drafting 1 and 2.....	10
Total.....	205	Vocational architectural drafting 1, 2, 3, and 4.....	40
Art:		Mechanical drafting 1, 2, 3, and 4.....	20
Art 1 and 2.....	10	Vocational mechanical drafting 1, 2, 3, and 4.....	40
Design.....	5	Freehand engineering drawing 1 and 2.....	10
Art appreciation.....	2½	Industrial electricity 1, 2, 3, and 4.....	10
Life drawing 1, 2, and 3.....	15	Vocational electricity 1, 2, 3, and 4.....	40
Advertising art 1, 2, and 3.....	15	Vocational electric wiring 1, 2, 3, and 4.....	40
Art history and criticism.....	5	Forge.....	5
Art composition 1 and 2.....	10	Foundry.....	5
Sculpture 1 and 2.....	10	Vocational machineshop 1, 2, 3, and 4.....	40
Clay modeling 1 and 2.....	10	Ornamental iron 1 and 2.....	10
Leather work 1 and 2.....	10	Paint shop 1 and 2.....	10
Art metal 1 and 2.....	10	Pattern making.....	5
Pottery 1 and 2.....	10	Linotype 1 and 2.....	10
Reed craft 1 and 2.....	10	Printing 1, 2, 3, and 4.....	10
Weaving 1 and 2.....	10	Vocational printing 1, 2, 3, and 4.....	40
Needle work craft 1 and 2.....	10	Machineshop related drafting 1, 2, 3, and 4.....	20
Stage art 1 and 2.....	10	Automechanics related drafting 1, 2, 3, and 4.....	20
Textile craft 1 and 2.....	10	Sheet metal 1, 2, 3, and 4.....	10
Wood carving 1 and 2.....	10	Vocational sheet metal 1, 2, 3, and 4.....	40
Art crafts 1, 2, 3 and 4.....	20	Steam and gas engine.....	10
Decorative arts 1, 2, 3, 4, 5, and 6.....	30	Upholstery 1 and 2.....	10
Costume design.....	10	Vocational upholstery 1, 2, 3, and 4.....	40
Total.....	232½	Welding 1 and 2.....	10
Industrial Arts:		Vocations.....	10
Autoshop B9 and A9.....	10	Total.....	1,015
Drafting B9 and A9.....	10	Home economics:	
Electricity B9 and A9.....	10	Home making B9 and A9.....	10
Printing B9 and A9.....	10	Foods 1 and 2.....	10
Woodshop B9 and A9.....	10	Foods 3.....	5
General metal B9 and A9.....	10	Dietetics 1 and 2.....	10
General shop 1 and 2.....	10	Lunchroom cooking 1 and 2.....	10
Reed craft B9 and A9.....	10	Clothing 1 and 2.....	10
Vocational aeronautics.....	40	Clothing 3 and 4.....	10
Domestic architecture.....	10	Millinery 1 and 2.....	10
History of architecture.....	10	Cosmetology 1 and 2.....	10
Architectural styles.....	10	Home nursing and first aid.....	2
Graphics.....	10	Nursing 1 and 2.....	10
Elements of architecture.....	10		
Machine design.....	10		
Mapping.....	10		
Auto electrics 1 and 2.....	10		
Vocational auto electrics 1, 2, 3, and 4.....	40		
Automechanics 1 and 2.....	10		
Vocational automechanics 1, 2, 3, and 4.....	40		
Bookbinding and leather craft 1 and 2.....	10		
Building construction 1 and 2.....	10		

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TABLE 63.—The total offering in grades 9, 10, 11, and 12, 1930-31, Los Angeles, Calif.—Continued

Designation of course	Number semester hours of credit allowed	Designation of course	Number semester hours of credit allowed
Home economics—Continued.		Foreign language, modern—Con.	
Practical home arts (experimental).....	5	German 5 and 6.....	10
Household management.....	5	Conversational German 1 and 2 (experimental).....	10
Household chemistry 1 and 2.....	10	Conversational Italian 1 and 2 (experimental).....	10
Vocational home making 1 and 2.....	15	Total.....	220
Camp cooking (boys).....	5	Agriculture:	
Boys' home activity.....	5	Home beautification 1 and 2.....	10
Home making for commercial girls 1 and 2.....	10	Agriculture 1 and 2.....	10
Senior home economics.....	5	Floriculture 1 and 2.....	10
Social arts (experimental).....	2	Horticulture 1 and 2.....	10
Vocational cosmetology 1, 2, 3, and 4.....	40	Landscape and design 1 and 2.....	10
Power sewing 1 and 2.....	10	Poultry.....	5
Vocational power sewing 1 and 2.....	20	Dairy industry.....	5
Vocational millinery 1, 2, 3, and 4.....	40	Animal husbandry 1.....	5
Vocational dressmaking 1, 2, 3, and 4.....	40	Animal husbandry 2.....	5
Total.....	309	Vocational agriculture 1 and 2.....	20
		Total.....	90
		Commerce:	
Foreign language, classical:		Typewriting 1, 2, 3, and 4.....	10
Latin 1 and 2.....	10	Junior business training B9 and A9.....	10
Latin 3 and 4.....	10	Bookkeeping 1, 2, 3, 4, 5, and 6.....	30
Latin 5 and 6.....	10	Business organization.....	5
Latin 7 and 8.....	10	Stenotypy 1, 2, 3, and 4.....	20
Greek 1 and 2.....	10	Shorthand 1, 2, 3, and 4.....	20
Greek 3 and 4.....	10	Business law 1 and 2.....	10
Greek 5 and 6.....	10	Business practice 1 and 2.....	10
Foreign language, modern:		Machine bookkeeping 1 and 2.....	10
Spanish 1 and 2.....	10	Machine calculation.....	5
Spanish 3 and 4.....	10	Stenographic office practice 1 and 2.....	10
Spanish 5 and 6.....	10	Business correspondence.....	5
Spanish 7 and 8.....	10	Business mathematics.....	5
Conversational Spanish 1 and 2 (experimental).....	10	Economic geography 1 and 2.....	10
French 1 and 2.....	10	Advertising 1 and 2.....	10
French 3 and 4.....	10	Salesmanship.....	5
French 5 and 6.....	10	Advanced salesmanship 1 and 2.....	10
French 7 and 8.....	10	Merchandising 1 and 2.....	10
Conversational French 1 and 2 (experimental).....	10	Store practice 1 and 2.....	10
German 1 and 2.....	10	Total.....	205
German 3 and 4.....	10		

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TABLE 64.—The number of schools requiring each major subject field, 1923-24 and 1930-31

Subject field	Grade 9		Grade 10		Grade 11		Grade 12 ¹	
	1923-24	1930-31	1923-24	1930-31	1923-24	1930-31	1923-24	1930-31
	2	3	4	5	6	7	8	9
English.....	15	15	15	15	14	13	4	7
Social studies.....	5	10	2	3	4	5	10	11
Mathematics.....	7	5	2	2				
Science.....	3	6	3	6	3	3	1	
Physical education.....	12	14	11	13	9	12	7	7
Art.....	2	2	1	1				
Music.....	6	6	2					
Industrial arts.....	2	1						
Home economics.....	4	1		1				

¹ Grade 12 is not represented for 2 cities in 1923-24 and for 1 city in 1930-31 on account of operation on the 11-grade basis.

Semester hours devoted to constants.—The extent of changes which have taken place in the required work may be seen from another angle from the presentation in Table 65 of the number of semester hours of work required in each field in 1923-24 and in 1930-31. The most marked increment is in the field of social studies, followed in a lesser degree by increases in science, English, and physical education, in the order named. Although the total shows that more work was required in 1930-31 than in 1923-24, slight decreases are to be noted in mathematics, industrial arts, home economics, music, and art.

TABLE 65.—Distribution of the total number of semester hours devoted to the constants in 15 systems, 1923-24 and 1930-31

Subject field	Number of semester hours	
	1923-24	1930-31
English.....	488	508
Social studies.....	178	266
Mathematics.....	90	70
Science.....	90	136
Physical education.....	234	235½
Music.....	25	14
Art.....	16	3
Industrial arts.....	10	5
Home economics.....	32½	18
Total.....	1,163½	1,265½

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5. THE SUBJECTS OF STUDY

Percentage of recitation time devoted to each subject.—The preceding tabulations have shown the fields of subject matter offered and required at the different periods. They have not indicated, however, the percentages of pupils which enroll in these separate fields. The most detailed part of Counts' investigation is with respect to these items of information. The procedures followed by Counts were employed in securing the data. Forms were prepared on which principals of each school in the 15 cities enrolling pupils in grades 9 to 12 were requested to indicate total enrollments in the major subject fields. Data represent the majority of these schools in all cities except Cleveland, from which no report was received.

The results reported in Table 66 represent the percentage of the total pupil hours which are devoted to each subject field. Over the 7-year period, the averages show a decrease in the time devoted to English, mathematics, art, home economics, foreign language, and miscellaneous subjects. Under miscellaneous subjects are included time devoted to agricultural and teacher-training courses. The most significant reductions are in the fields of mathematics and foreign languages which may be interpreted to mean less emphasis on conventional college preparation. Increments are to be noted in the time devoted to the social studies, science, physical education, music, industrial arts, and commerce. The greater increments shown for the social studies and commerce indicate a tendency in later years to emphasize preparation for citizenship and for business.

Proportion of time within each major subject field devoted to its divisions.—Heads of departments within the particular school which was studied intensively in each city were asked to indicate the percentage of time devoted to each of the branches of their field. Comparative results for English, social studies, mathematics, science, and the foreign languages (designated as the academic fields) are shown in Table 67. More attention in late years is being devoted to composition than to literature in grades 9, 10, and 11, the figures show, but the tendency is in the other direction for grade 12. In the social studies, the tendency is for less

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TABLE 66.—Percentage of recitation time devoted to each major subject field, 1923-24 and 1930-31

City and year	1	2	3	4	5	6	7	8	9	10	11	12	13
	English	Social studies	Mathematics	Science	Physical education	Music	Art	Industrial arts	Home economics	Commerce	Foreign language	Miscellaneous	
Atlanta:													
1924.....	18.7	8.6	16.3	7.9	8.0	2.2	0.2	2.9	6.2	10.7	12.4	0.2	
1931.....	16.4	12.7	13.7	9.5	5.1	2.6	1.1	3.9	4.4	18.2	7.4		
Berkeley:													
1924.....	16.1	9.9	9.1	8.8	16.7	6.5	2.1	8.9	4.5	7.6	9.6	.2	
1931.....	15.6	11.2	6.5	11.1	15.6	4.1	2.5	9.1	4.8	12.6	6.9		
Detroit:													
1924.....	20.3	14.2	12.6	8.6	5.4	1.6	1.9	4.0	5.5	14.4	11.5	.4	
1931.....	17.3	12.7	11.7	9.5	11.6	3.3	2.0	5.8	4.1	15.2	6.4		
Joliet:													
1924.....	15.3	10.0	8.5	18.9	8.1	3.3	.3	14.7	5.7	11.1	4.4		
1931.....	12.0	9.2	5.2	12.7	7.0	.1		28.8	4.3	9.3	4.1		
Kansas City:													
1924.....	21.2	16.6	9.0	11.8	6.5	1.7	2.1	6.0	4.6	11.3	9.2	.2	
1931.....	19.8	17.0	10.3	11.1	12.4	3.5	2.4	5.5	4.6	8.1	4.6		
Lincoln:													
1924.....	19.8	15.9	13.6	8.0	4.4	4.1	2.4	3.0	4.4	11.0	12.5	.9	
1931.....	20.7	13.3	10.4	9.7	5.8	7.3	2.1	4.6	4.1	12.9	9.1		
Los Angeles:													
1924.....	14.1	9.5	7.9	9.0	16.2	3.4	3.8	9.8	5.3	12.0	7.7	1.3	
1931.....	12.2	10.6	6.9	10.2	16.3	8.1	4.6	8.5	5.6	9.9	6.5	.6	
New Orleans:													
1924.....	21.0	12.6	12.8	8.5	3.9	.5	1.2	1.5	1.2	22.8	13.9	.1	
1931.....	20.6	14.6	10.9	5.0	6.9	.5	1.0	1.0	1.8	24.9	12.8		
Newton:													
1924.....	17.9	10.9	12.3	10.9	7.4	1.2	1.5	8.5	3.7	8.8	16.1	.8	
1931.....	17.8	11.0	11.3	11.0	8.7	1.4	.9	6.3	4.0	14.0	13.0		
Pueblo:													
1924.....	20.7	12.5	10.0	9.2	4.0	0	0	9.1	8.7	10.6	13.9	1.3	
1931.....	21.2	14.6	7.1	10.8	3.8	3.7	2.4	10.1	2.5	13.8	10.0		

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TABLE 66.—Percentage of recitation time devoted to each major subject field, 1923-24 and 1930-31—Continued

City and year	1	2	3	4	5	6	7	8	9	10	11	12	13
	English	Social studies	Mathematics	Science	Physical education	Musical	Art	Industrial arts	Home economics	Commerce	Foreign language	Miscellaneous	
Rochester:													
1924.....	21.0	9.2	11.6	11.3	6.2	2.6	1.6	1.0	0.6	14.9	20.0	0.2	
1931.....	18.0	9.3	9.7	11.9	6.6	2.7	3.0	9.2	2.1	16.2	11.2		
St. Louis:													
1924.....	15.9	12.5	8.0	11.7	5.4	2.2	4.6	13.4	5.1	12.4	8.8		
1931.....	13.6	14.4	9.6	13.7	9.9	5.4	3.2	6.7	3.1	6.0	9.4		
Salt Lake City:													
1924.....	18.0	12.9	12.8	8.9	11.5	3.1	2.9	5.3	5.7	10.3	8.6	.4	
1931.....	19.4	13.4	11.2	9.6	11.6	4.9	3.0	5.3	4.6	11.8	4.8		
Trenton:													
1924.....	22.8	8.9	9.5	7.0	5.6	1.9	3.8	5.6	3.2	20.4	11.3		
1931.....	17.6	14.1	8.7	7.5	7.9	2.3	1.8	6.6	2.6	22.1	8.8		
Average:													
1924.....	18.8	11.4	11.0	10.2	7.7	2.6	2.1	7.5	4.7	12.4	11.1	.3	
1931.....	17.7	12.7	9.5	10.7	9.2	3.6	2.2	8.3	3.8	13.9	8.3	.1	

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emphasis on special fields of history, with more on world history and civics or citizenship. The most important changes in mathematics indicate less time to geometry but more to composite mathematics. In science more attention is given of late to general science and general biology with a resulting decrease in the time devoted to physics, chemistry, botany, and zoology. No marked changes are to be noted in the foreign languages. All courses except German show a slight reduction.

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TABLE 67.—The average and range in percentages of time devoted to certain courses in each of the academic fields, 1923-24 and 1930-31

Subject field and courses	Average		Range	
	1923-24	1930-31	1923-24	1930-31
	2	3	4	5
English:				
Composition, ninth grade.....	49.0	54.0	33.0-60.0	24.0-80.0
Literature, ninth grade.....	51.0	46.0	40.0-67.0	20.0-66.0
Composition, tenth grade.....	48.0	50.0	20.0-83.0	33.0-70.0
Literature, tenth grade.....	52.0	50.0	17.0-80.0	30.0-67.0
Composition, eleventh grade.....	44.0	46.0	15.0-60.0	0-80.0
Literature, eleventh grade.....	56.0	54.0	40.0-85.0	20.0-100.0
Composition, twelfth grade.....	39.0	31.0	0-100.0	0-50.0
Literature, twelfth grade.....	61.0	69.0	0-100.0	50.0-100.0
Social sciences:				
Ancient history.....	23.1	8.2	0-42.0	0-35.5
Medieval and modern history.....	10.0	4.8	0-30.5	0-21.7
Modern history.....	11.3	9.6	0-40.5	0-42.8
World history.....	6.3	12.6	0-38.9	0-44.6
English history.....	1.3	.4	0-7.5	0-3.6
Industrial history.....	1.4	.6	0-11.8	0-6.4
United States history.....	17.2	21.6	1.2-33.1	1.9-29.3
Civics and citizenship.....	16.0	19.6	0-41.6	6.2-50.2
Vocations.....	4.4	2.1	0-25.5	0-8.6
Economics.....	3.9	5.4	0-8.8	0-15.4
Sociology.....	3.1	1.7	0-14.2	0-6.7
Government and politics.....	1.3	1.9	0-17.3	0-19.1
Other (social studies, geography, Latin-American history).....		10.5		0-32.3
Mathematics:				
Composite mathematics.....	7.8	12.0	0-41.5	0-61.1
Arithmetic.....	.6	3.5	0-7.4	0-15.4
Algebra.....	49.4	50.6	23.7-67.4	24.1-63.6
Geometry.....	39.9	30.6	28.9-61.6	16.3-42.6
Trigonometry.....	2.1	1.8	.7-3.1	0-6.6
Surveying.....	.2	.1	0-1.3	0-1.8
Applied mathematics.....		1.2		0-12.4
Sciences:				
General science.....	20.5	26.9	0-45.3	0-46.6
General biology.....	12.1	23.7	0-44.0	11.9-35.7
Chemistry.....	21.1	15.3	4.6-44.0	5.6-24.6
Physics.....	19.9	13.3	9.1-31.6	5.9-19.1
Physiology and hygiene.....	8.0	5.5	0-23.7	0-20.0
Physiography.....	7.8	7.6	0-29.6	0-24.3
Botany.....	7.1	4.0	0-17.3	0-13.1
Zoology.....	3.5	1.9	0-13.0	0-9.3
Geology.....		.2	0-.4	0-.3
Other (advanced biology, astronomy).....		1.8		0-16.2
Foreign language:				
Latin.....	39.7	36.4	22.7-62.2	19.4-58.8
Spanish.....	31.5	30.9	6.3-59.2	1.8-70.7
French.....	26.5	24.5	6.5-47.9	1.4-53.8
German.....	2.2	7.3	6-7.1	0-28.2
Greek.....			0-.7	0-5.3

Similar data for physical education, art, practical arts for boys and girls, and commerce (designated as the special fields) are shown in Table 68. In physical education more attention is given of late to organized play than to formal gymnastics. New branches of art, such as appreciation, design, color theory, and arts and crafts are being empha-

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sized more in late years. In the practical arts and commerce newer and perhaps more practical courses, such as printing, auto repair, home nursing, vocational home economics, office practice, and business organization are taking a proportion of the time formerly devoted to the more traditional courses.

TABLE 68.—The average and range in percentages of time devoted to certain courses in each of the special subject fields, 1923-24 and 1930-31

Subject field and courses	Average		Range	
	1923-24	1930-31	1923-24	1930-31
1	2	3	4	5
Physical education (boys):				
Organized play.....	39.0	47.0	20.0-60.0	40.0-80.0
Formal gymnastics.....	21.0	19.0	10.0-40.0	0-40.0
Military drill.....	11.0		0-60.0	
Hygiene.....	11.0	16.0	0-20.0	10.0-40.0
Light and heavy apparatus work.....	10.0	5.0	0-25.0	0-20.0
Swimming.....	8.0	8.0	0-40.0	0-25.0
Self-testing activities.....		5.0		0-30.0
Physical education (girls):				
Organized play.....	33.0	38.0	0-60.0	10.0-44.0
Formal gymnastics.....	20.0	12.0	0-35.0	0-21.0
Hygiene.....	31.0	15.0	0-40.0	0-20.0
Dancing.....	18.0	23.0	0-40.0	15.0-40.0
Swimming.....	10.0	6.0	0-40.0	0-20.0
Apparatus work.....	6.0	6.0	0-19.0	0-20.0
Art (grade 10):				
Object drawing.....	23.0	10.0		7.0-20.0
Nature drawing.....	20.0	7.0		3.0-17.0
Pose drawing.....	18.0	13.0		0-26.0
Illustration.....	15.0	7.0		0-18.0
Still life.....	16.0	9.0		0-20.0
Memory drawing.....	8.0	6.0		0-20.0
Color theory.....		6.0		0-26.0
Design.....		17.0		0-40.0
Appreciation.....		8.0		0-22.0
Arts and crafts.....		17.0		0-42.0
Practical arts (boys):				
Manual training.....	20.0	13.0	0-61.5	0-35.0
Mechanical drawing.....	44.8	30.6	22.1-100.0	5.7-80.4
Printing.....	7.0	9.6	0-21.2	0-18.9
Auto repair.....	2.3	8.1	0-10.1	0-17.4
Machine shop.....	5.3	8.0	0-17.4	0-22.5
Carpentry.....	2.8	8.1	0-23.5	0-19.6
Electricity.....	5.5	7.3	0-22.7	0-24.7
Shop mathematics.....	2.6	3.2	0-13.0	0-14.2
Sheet metal.....	1.7	2.5	0-10.7	0-8.6
General shop.....		2.4		0-19.3
Architectural drawing.....	1.3	1.2	0-11.8	0-3.7
Pattern making.....	2.1	1.5	0-22.2	0-6.2
Other (welding, forging, radio).....	.7	4.4	0-7.4	0-11.6
Practical arts (girls):				
Sewing.....	55.2	45.2	23.7-93.7	7-76.9
Cooking.....	30.1	29.9	6.3-58.2	0-49.0
Home management.....	8.0	4.5	0-25.4	0-19.7
Home nursing.....	.4	3.7	0-5.5	0-34.2
Vocational home economics.....	.5	2.3	0-7.1	0-20.1
Household chemistry.....	1.3	1.8	0-14.4	0-17.6
Millinery.....	4.5	.9	0-16.4	0-6.0
Other (boys' home economics, home economics, hygiene).....		11.7		0-73.9

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TABLE 68.—The average and range in percentages of time devoted to certain courses in each of the special subject fields, 1923-24 and 1930-31—Continued

Subject field and courses	Average		Range	
	1923-24	1930-31	1923-24	1930-31
1	2	3	4	5
Commerce:				
Typewriting.....	30.9	33.2	15.0-54.3	14.3-47.4
Bookkeeping.....	22.9	19.3	18.0-27.7	9.1-27.7
Stenography.....	17.0	15.7	1.1-29.4	6.2-22.7
Commercial arithmetic.....	10.7	7.5	0-21.6	0-16.7
Office practice.....	1.4	4.9	0-5.0	0-21.5
Commercial law.....	2.9	3.8	0-5.9	0-9.3
Business organization.....	.3	2.5	0-4.4	0-12.8
Penmanship and spelling.....	4.2	2.6	0-12.7	0-16.2
Commercial geography.....	6.3	2.6	0-19.3	0-12.0
Salesmanship and advertising.....	1.4	1.5	0-5.8	0-6.4
Accounting.....	.8	.8	0-4.1	0-3.2
Other (commerce, filing, banking).....	1.2	2.1	1.2-5.8	.3-19.9

6. SUMMARY

1. Over the 7-year period represented, high-school attendance on the average more than doubled in the 15 selected cities included in Counts' study. Different methods were used, however, in making the computations, a fact which may exaggerate the increment. The number of high schools increased to one and one half times its total at the opening of the period.

2. An increase of from 79 to 100 in the number of units of work offered in the average school is shown. In Los Angeles, a total of 127½ units was offered in the Manual Arts High School in 1923-24, whereas in 1930-31, 287½ units were offered for the city as a whole. Averages for all schools show the largest increment in the industrial arts, but all fields except English, physical education, and commerce show an increase.

3. The most significant increments in the number of schools requiring the subject fields have been in grades 9 and 10, in which social studies, science, and physical education are most involved. Decreases are shown for mathematics, industrial arts, and home economics. Increments in the number of semester hours of work required are most marked for social studies, and to a lesser degree for English and science.

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4. More indicative of changes are averages showing the actual percentage of recitation time devoted by pupils to the different subject fields. Increments are shown for social studies, physical education, music, industrial arts, and commerce. Reductions, most significant for mathematics and foreign languages, are also shown for English, art, and home economics.

5. The percentages of recitation time devoted by pupils to the divisions of subject fields indicate more attention to composition than to literature except in grade 12; more time to world history and citizenship; less time to geometry and more to composite mathematics; more time to general science and to biology; more to organized play and less to formal gymnastics. New courses in the field of art, such as appreciation, design, color theory, and arts and crafts are receiving emphasis in late years. More practical courses in the vocational fields, among which may be mentioned printing, automobile repairs, home nursing, vocational home economics, office practice, and business organization, are taking time formerly devoted to more traditional courses.

CHAPTER XVIII : TRENDS IN 39 RECENTLY REVISED PROGRAMS

1. PURPOSE AND METHOD OF THE STUDY

Parallel of the junior high school study.—The present investigation makes use of the data for grades 9 to 12 secured in the manner described in Chapter VIII. Thirty-five of the schools from which data for grades 7 to 9 were utilized for that chapter, also sent programs of studies for grades 10, 11, and 12, both before and after revision. Because many schools include grade 9 in the upper division of the high-school organization, the same data as those appearing for grade 9 in Chapter VIII, even though grade 9 in many cases was a part of the junior high school, are included with that shown for grades 10, 11, and 12 in this chapter. Four additional schools from which data for grades 9 to 12 only were reported are added to these 35.

Purpose of the study.—The present chapter therefore reports changes incident to revision in grades 9 to 12 of 39 schools, by describing the situation both before and after revision. By presenting results of analyses of two programs of studies from the same school, one being the program followed after the most recent revision, and the other, the program in use just before revision, opportunity is afforded for conclusions as to the direction in which the senior or 4-year high school is moving. As indicated in Chapter VIII, the schools from which programs were secured are a selected group; the changes reported are actual in that they are those occurring within identical schools; and the revisions revealed are those which have taken place within the five years immediately preceding.

Size and location of cities represented.—The cities from which programs were received vary in size and location. According to the Federal census of 1930, 10 of the cities were of more than 100,000 population, 17 of them each had between 35,000 and 100,000 inhabitants, 8 were in the 10,000 to 35,000 population group, and 4 had fewer than 10,000 inhabitants.

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Four of the cities are in the New England States, 12 are in the Middle Atlantic section, 5 are from the South, 14 from the Middle West, and 4 are from the far western States.

Method of the study.—The data presented in the following sections are those obtained through analyses of the two sets of programs of studies. The body of the chapter is organized within three main sections. First, there is presented the general plan of organization of the schools represented; second, the nature of the work which is required of all pupils; third, the nature of the work which pupils may elect.

1. THE GENERAL PLAN OF ORGANIZATION

Organization of grades.—Since 35 of the schools represented in this chapter are the same as those included in Chapter VIII, data concerning the general plans of organization within the 39 schools are almost the same as those already reported. Before revision, 24 of the schools were organized on the 6-3-3 plan, 4 were organized on the 6-6 plan, 3 on the 6-2-4 plan, 3 on the 8-4 plan, 1 on the 7-2-3 plan, and 1 on the 7-1-4 plan. The organization of 3 is unknown. Few changes in grade organization took place in connection with revision of the programs of studies. The organization of 6 schools for this period is unknown. Schools organized on the 6-3-3 plan increased by 1; those organized on the 6-6 plan decreased by 2; those on the 6-2-4 plan decreased by 1; 1 school changed to the 6-4-2 plan and 1 to the 7-5 plan of organization; there was no change in the school organized on the 7-2-3 plan, and schools organized on the 8-4 plan decreased by 2. The abandonment of the traditional 8-4 plan of organization by two schools is perhaps the most significant of the changes indicated.

The administrative arrangement of programs according to types.—Following again the classification of programs of studies according to types defined by Koos and indicated in Chapter XI, section 3, the following types were employed before revision: Single-curriculum type, none; pure multiple-curriculum type, none; constants-with-variables type, 8; combination type, 22; unknown, 4. After revision the following plans were in operation: No school employed the single-

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curriculum type; 1 school arranged its program according to the multiple-curriculum type; 8 are still organized on the constants-with-variables type and 22 on the combination type of program; the organization of 8 schools for this period is unknown. Although no conclusions concerning changes are justified in view of the number of schools whose organization is unknown, it is evident that a considerable majority of schools at both periods preferred the combination type of program.

Number and kinds of curriculums offered.—Averages show a slight increase in the number of curriculums offered as a result of revision. Before revision, an average of 4.6 curriculums was offered, but this was increased to 4.8 curriculums during the revision. The kinds of curriculums offered, classified under seven principal divisions, are shown in Table 69. An increment is to be noted, as a result of the revision process in all kinds of curriculums except that for normal-training pupils. The most significant increment is in the number of general curriculums offered after revision.

TABLE 69.—*The number of senior high schools offering certain kinds of curriculums before and after revisions*

Curriculum	Number of schools	
	Before revision	After revision
College preparatory.....	24	25
General.....	14	18
Commercial.....	22	25
Industrial arts.....	18	21
Home economics.....	12	14
Normal training.....	4	3
Fine arts.....	8	11

3. THE TOTAL OFFERING

Number of schools offering electives.—In this section of the chapter are presented the number of schools offering electives in each major subject field, the total number of units offered, the number of units offered and the number elective in each major subject field, and the number of schools offering certain divisions or courses within each major subject field.

The number of schools in which the major subject fields

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are elective, before and after revision, is shown in Table 70. English, the social studies, and physical education are required in grade 9 in most schools and few electives are shown in these fields for this grade. Many schools, however, offer electives in this grade in industrial arts, home economics, foreign language, and commerce. In grades 10 to 12, most schools offer electives in all fields, except English and physical education, which are largely required in these grades. Increments resulting through revision are for the most part in the fields of music, art, and industrial arts. Little change has resulted in the other subject fields.

TABLE 70.—*The number of schools (in a total of 39) in which the major subject fields are elective, before and after revision*

Subject field	Before revision				After revision			
	Grade 9	Grade 10	Grade 11	Grade 12	Grade 9	Grade 10	Grade 11	Grade 12
1	2	3	4	5	6	7	8	9
English.....	14	17	21	16	12	16	26	23
Social studies.....	12	31	26	28	16	33	24	29
Mathematics.....	23	34	37	34	22	36	35	37
Science.....	23	35	39	39	19	34	39	39
Industrial arts.....	34	35	34	34	35	38	37	32
Physical education.....	2	3	3	5	3	2	3	5
Music.....	24	32	31	30	24	33	34	33
Home economics.....	23	34	32	29	31	34	34	31
Art.....	24	28	27	22	26	33	31	27
Foreign language.....	37	39	37	35	38	38	39	37
Commerce.....	35	38	39	38	33	39	39	39
Other (Bible, teacher training).....	1	3	4	5	.....	3	5	6

Total number of units offered.—Probably the most significant differences between the programs of studies in use after revision and those in use before revision are to be seen in the tendency to broaden the program by offering a greater number of units of work. Before revision, the average school offered 60.7 units of work in grades 9 to 12. As a result of revision, this average had increased to 67.8, or a net increment of 7.1 units in the offering of each school. The range in the number of units offered by the lowest and the highest school has also increased. The range before revision is 32 to 115 units; after revision, from 33½ to 124 units, the latter amount being offered at Oakland, Calif.

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Units elective and units offered in major fields.—To indicate the distribution of the units over the major subject fields, Table 71 is presented, showing the average number of units elective and the average number in the total offering of each field, before and after revision. In addition to averages in the fields of English, mathematics, etc., included in the table also are the averages allocated to such activities as clubs, home room, and the like (designated as the socializing-integrative activities). It will be noted from the total offering that each major subject field shares in the total increment which the revision has brought about. The industrial arts, foreign languages, music, art, and commerce, however, have profited most. The difference between the average number offered and the average number elective is the average number of units required in each field; this will receive later treatment. The increase in the amount of time devoted to the different fields is even greater than that indicated, due to the fact that the average length of the school period in the 16 schools for which this item is shown increased from 47.5 minutes before revision to 52.3 minutes after revision.

TABLE 71.—*The average number of units of elective work and the average number offered in the major subject fields, before and after revision*

Subject field	Before revision		After revision	
	Elective	Total offered	Elective	Total offered
1	2	3	4	5
English.....	2.2	5.8	2.5	6.1
Social studies.....	3.2	4.9	3.5	5.4
Mathematics.....	3.8	4.4	4.1	4.7
Science.....	5.1	5.7	5.2	5.9
Physical education.....	.1	.7	.1	.8
Music.....	3.9	4.0	5.4	5.5
Art.....	2.9	2.9	3.8	3.8
Industrial arts.....	8.1	8.2	10.3	10.3
Home economics.....	4.7	4.8	4.9	4.9
Foreign language.....	10.2	10.2	11.3	11.3
Commerce.....	8.7	8.7	9.7	9.7
Socializing-integrative activities.....				.1
Other.....	.4	.4	.3	.3

Courses offered in the academic fields.—The number of schools where as many as three courses are offered in the fields of English, social studies, mathematics, science, and

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foreign language (designated as the academic fields) is shown in Table 72. Those courses which have increased most as a result of revision are: In the field of English, the general course in English, literature, grammar, library, practical or special English; in social studies, the general course, ancient history, world history, social problems, international relations; in mathematics, the general course; in science, general science, hygiene, and chemistry; in foreign languages, Latin, French, Spanish, and German. Decreases are shown for penmanship, commercial English, European history, civics, advanced algebra, biology, botany, zoology, agriculture, and psychology. Only slight changes are noted in the remaining courses.

TABLE 72.—The number of schools offering certain courses in the academic fields, before and after revision

Subject field and courses	Before revision				After revision			
	Grade 9	Grade 10	Grade 11	Grade 12	Grade 9	Grade 10	Grade 11	Grade 12
1	2	3	4	5	6	7	8	9
English:								
English.....	38	37	34	24	35	38	38	37
Composition.....	1	3	2	1	4	1	3	2
Literature.....	2	1	6	8	4	2	6	9
Grammar.....	1	1	1	1	1	1	6	3
Penmanship.....	8	7	1	1	3	9		
Spelling.....	4	5			2	6		
Library.....	4	1	1	1	4	1	4	2
Practical English.....							5	
Commercial English.....	1	2	7	3	1	3	2	3
Short story.....	1	1		1	1		3	
Public speaking and expression.....	3	4	6	7	2	8	3	6
Dramatics.....	2	2	6	1	5	2		7
Journalism.....			8	5	1		1	10
Other (story telling, oral English, etc.).....	2	1		3	4		5	4
Social studies:								
Social studies.....	10	2	1	2	20	7	1	3
History.....	1	3	1	2	1	2	3	
American history.....		2	19	16		2	21	10
Ancient history.....	7	4	1		6	7	3	2
Medieval and modern history.....	1	2	1			2	1	
Modern history.....		9	11	1		6	9	4
World history.....	2	12	2		6	15		
European history.....	1	11	1		1	6		
Civics.....	7	1	8	8	1	2	3	10
Vocational, economic, and community civics.....	12	5	3		10	4	2	1
Social problems.....					5	4	1	6
Problems of democracy.....	1	1	2	15	2	2	3	15
Geography.....	2		1		1		1	2
Economics.....		6	8	21	2	6	5	23
Sociology.....			1	4				7

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TABLE 72.—The number of schools offering certain courses in the academic fields, before and after revision—Continued

Subject field and courses	Before revision				After revision			
	Grade 9	Grade 10	Grade 11	Grade 12	Grade 9	Grade 10	Grade 11	Grade 12
1	2	3	4	5	6	7	8	9
Social studies—Continued.								
Industrial history.....		2				4		
International relations.....		2		1		1	3	3
Other (medieval and State history, vocations).....	4	3	1	2	7	4	1	2
Mathematics:								
Mathematics or general mathematics.....								
Arithmetic.....	17	1	1	5	22	4	3	5
Algebra.....	2	1	3	3		4	1	4
Advanced algebra.....	21	7	5	1	27	4	3	
Plane geometry.....		5	22	17		3	20	16
Solid geometry.....	4	27	8			35	7	
Trigonometry.....			20	13			15	17
Practical mathematics.....			3	28			2	29
Shop mathematics.....	5	2		1	4	1	1	3
Reviews.....		3	5	2		7	4	1
Other (surveying, etc.).....	1		4	5			2	7
Science:								
Science or general science.....	34	2	4	1	35	29	5	2
Biology.....	10	25	25		9	4		1
Botany.....		14	13			8	5	2
Zoology.....		8	7	2		4	1	2
Physiology.....	6	3	4	2		2	5	2
Hygiene.....			2	1	1	3	1	2
Physical geography.....	1	5	3	2	1	5	2	
Agriculture.....	1	3	3	2			3	2
Physics.....		2	4	32		1	1	25
Chemistry.....			2	12		1	3	14
Psychology.....				7			1	2
Other (shop, industrial, laboratory science, geology).....	2	5	6	10	2	4	12	5
Foreign language:								
Foreign language.....	5	3	3	3	1	2	3	3
Latin.....	36	35	33	31	38	37	35	35
French.....	22	30	30	28	26	32	32	29
Spanish.....	10	22	25	23	13	25	27	24
German.....	4	15	15	16	6	14	19	17
Italian.....		1	1	1		1	3	2
Greek.....		4	4	4		2	3	3

Courses offered in the special fields.—Under the title, "Special Fields," are indicated (Table 73) the courses offered in three or more schools in the fields of physical education, music, art, industrial arts, home economics, commerce, and the socializing-integrative activities. Courses in which most increments are noted are: The general course in physical education; chorus, glee club, band, orchestra, theory or harmony, and appreciation in the field of music; art and appreciation in the field of art; ninth-grade mechanical drawing, woodwork, shop, and printing in the field of indus-

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trial arts; home management and dietetics in the field of home economics; typewriting, shorthand, bookkeeping, commercial law, business organization and administration, office practice, salesmanship, accounting, and advertising in the field of commerce; finally, all socializing-integrative activities show an increase following revision. The number of courses showing an increment in the commercial field is especially noteworthy.

TABLE 73.—The number of schools offering certain courses in the special fields, before and after revision

Subject field and courses	Before revision				After revision			
	Grade 9	Grade 10	Grade 11	Grade 12	Grade 9	Grade 10	Grade 11	Grade 12
1	2	3	4	5	6	7	8	9
Physical education:								
Physical education.....	27	25	15	18	26	29	26	23
Health.....	7	2	3	1	9	2	1	2
Physical education and hygiene.....	5	6	3	5	1			
Physical training and health. Other (swimming, dancing, etc.).....	1				3	1	1	1
	3	3	2	2	3	3	1	3
Music:								
Music.....	23	12	11	12	21	12	12	11
Chorus.....	5	7	5	5	3	12	11	9
Glee club.....	8	8	10	9	20	17	16	14
Band.....	8	8	8	11	8	16	16	17
Orchestra.....	11	13	14	14	13	19	18	20
Instrumental.....	3	2	1	2	1	3	2	3
Theory or harmony.....	2	9	11	7	2	15	14	11
Appreciation.....	1	8	9	3	4	10	10	7
Other (history, conducting, etc.).....	1	6	7	3	1	2	4	3
Art:								
Art.....	20	13	11	10	25	18	13	12
Freehand drawing.....	8	12	6	4	5	8	6	5
Commercial art.....	1	3	6	6	2	6	7	10
Design.....	4	8	11	4	2	12	11	6
Arts and crafts.....		2	2	2	2	3	3	2
Appreciation.....	1	7	2	2	3	6	4	5
Other (history, stage craft, etc.).....			8	12		5	10	19
Industrial arts:								
Industrial or manual arts.....	16	10	8	8	18	9	6	6
Mechanical drawing.....	18	26	21	19	27	24	20	13
Architectural drawing.....		1	9	7		1	6	8
Woodwork.....	7	9	11	10	12	13	9	7
Home mechanics.....	1	2		3	3	2	3	
Shop.....	11	8	4	5	21	10	9	8
Machine shop.....	3	4	7	5	4	10	10	6
Auto shop.....	3	5	3	5	3	3	2	3
Sheet metal.....	2	2	2	2	5	5	1	2
Electricity.....	1	4	6	6	4	6	4	3
Printing.....	7	10	8	8	14	11	9	8
Pattern making.....	3	4	2		2	1	3	1
Vocational agriculture.....	3	2	1	1	1	2	1	1
Other (radio welding, etc.).....	3	7	13	14	5	12	12	9

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TABLE 73.—The number of schools offering certain courses in the special fields, before and after revision—Continued

Subject field and courses	Before revision				After revision			
	Grade 9	Grade 10	Grade 11	Grade 12	Grade 9	Grade 10	Grade 11	Grade 12
1	2	3	4	5	6	7	8	9
Home economics:								
Home economics.....	7	1	2	3	7	2	5	1
Foods.....	21	22	18	13	22	9	9	13
Clothing.....	19	26	23	15	18	27	26	15
Home management.....	8	9	9	15	7	14	13	26
Millinery.....		3	5	7	1	1	5	4
Costume design.....	2	9	6	9	1	4	5	4
Dietetics.....		2	2	2	1	2	2	5
Nursing.....		1	3	3		5	4	2
Vocational.....	1	1	2	1		2	4	2
Other (laundry, sanitation, etc.).....	1	1	1	3	1			2
Commerce:								
Typewriting.....	4	19	27	19		21	31	22
Shorthand.....		8	8	13		8	23	18
Stenography.....		8	12	13		2	15	13
Bookkeeping.....		26	23	9		30	30	12
Commercial arithmetic.....	6	13	3	2	5	11	4	5
Commercial geography.....	2	14	5	1	3	10		
Commercial law.....		1	6	20		1	9	24
Office practice.....	2	1	13		1	1	2	19
Salesmanship.....		4	4	11		1	11	13
Business organization and administration.....			2	5			8	6
Junior business training.....	4				6	1		
Accounting.....		1	2	1			4	5
Advertising.....		2	2	2		2	4	5
Retail selling.....		2	3	2		2	1	5
Secretarial training.....			1	2				4
Banking.....			1	4			2	6
Filing.....			1	3		1		3
Office appliances.....			1	5			1	5
Other (investments, industry, history, etc.).....	1	7	10	10	1	6	10	16
Socializing-integrative activities:								
Guidance.....	1				8	1	1	1
Assembly.....	2				4	2	2	2
Clubs.....	2				5	2	2	2
Auditorium.....	3				3			
Home room.....	2	1	1	1	4	2	2	2
Activities.....					5	1	1	1
Other (Bible, teacher training).....	2	2	5	8	3	4	9	14

4. THE REQUIRED WORK

Number of units required for graduation.—Under this section of the chapter are included data showing the number of units required for graduation, the number of schools requiring the major subject fields in each grade, the average number of units in each subject field required in each grade, and the specific courses required by grades in each major subject field, before and after revision. Most schools require 16 units of work, taken in grades 9 to 12, for graduation from

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high school. The range is broad, however, in the number of units required in courses which must be taken by all pupils. It is broader after revision than before: $3\frac{1}{2}$ to $10\frac{1}{2}$ units are required by the lowest and highest school before revision, while 4 and $13\frac{1}{2}$ units are required by these same schools after revision. The tendency seems toward requiring a greater number of units. Before revision, the average based on requirements in 38 of the 39 schools is 7.5 units as against 8.1 units after revision.

The number of schools requiring the major subject fields in each grade.—An idea as to the major subject fields, such as English, social studies, mathematics, and the like, which share in the increment noted in the total required work may be gained from the data presented in Table 74. It will be noted that, except in grade 9, few schools require work in fields other than English, physical education, and the social studies. Following revision of the work of these grades, however, small increments are recorded for science, industrial arts, and home economics. Only one school is indicated as requiring work for these grades in such activities as clubs, home room, assembly, etc. (designated as the socializing-integrative activities). In grade 9, the greatest increments are in physical education, mathematics, and the socializing-integrative activities, but all fields except English, which is required by all, show an increased requirement in this grade following revision.

TABLE 74.—*The number of schools in which the major subject fields are required, before and after revision*

Subject field	Before revision				After revision			
	Grade 9	Grade 10	Grade 11	Grade 12	Grade 9	Grade 10	Grade 11	Grade 12
1	2	3	4	5	6	7	8	9
English.....	29	28	28	32	30	28	30	30
Social studies.....	24	11	20	22	26	11	22	22
Mathematics.....	19	7	-----	1	23	4	1	1
Science.....	18	2	5	3	21	3	7	2
Physical education.....	23	28	24	18	37	34	28	24
Music.....	11	-----	-----	-----	14	2	1	1
Art.....	5	1	-----	-----	6	-----	1	-----
Industrial arts.....	6	-----	1	-----	8	-----	1	-----
Home economics.....	4	-----	-----	-----	7	1	2	1
Socializing-integrative activities.....	7	-----	-----	-----	15	1	1	1

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Average number of units of work required.—Averages computed for the number of units of work required in grades 9 to 12 indicate a few changes as a result of revision. English is required most with an average of 3.6 units, both before and after revision. Social studies is the only other field for which an average of more than one unit of required work is shown. With revision, the average in this field increased from 1.7 units to 1.9 units. Averages for mathematics, industrial arts, and music remained the same at 0.6, 0.1, and 0.1 of a unit, respectively, for the two periods. Home economics, in which the averages are 0.1 of a unit and no units required before and after revision, is the only field in which a reduction is shown. Science and physical education each increased from 0.6 to 0.7 of a unit with revision. In art and the socializing-integrative activities, not enough work was required to make an average for all schools of one-tenth of a unit. In all cases averages are computed by dividing the total number of units by 39 schools.

Courses required in the academic fields.—Where two or more schools require certain courses in grades 9 to 12 in the fields of English, the social studies, mathematics and science (designated as the academic fields) the results are indicated in Table 75. Only one school required foreign language in grades 11 and 12 after revision, and no school required it before revision. Data for the foreign-language field are not shown in the table. In the field of English, the course most commonly required is a generalized course, designated as "English." The tendency has been to require this course in grades 9, 10, 11, and 12. Except for a course in literature, which shows a small increment after revision, other courses in this field are seldom required in the upper grades. In grade 9, however, a few schools require separate courses such as composition, literature, grammar, penmanship, and spelling. The first two show a small increment as a result of revision.

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TABLE 75.—The number of schools requiring certain courses in the academic field, before and after revision

Subject field and courses	Before revision				After revision			
	Grade 9	Grade 10	Grade 11	Grade 12	Grade 9	Grade 10	Grade 11	Grade 12
1	2	3	4	5	6	7	8	9
English:								
English.....	38	36	34	20	35	37	38	29
Composition.....		2		1	4	1		
Literature.....	1	1	4	2	4	2	4	2
Grammar.....		1	1	1	1			
Penmanship.....	2							
Spelling.....	2				2			
Library.....	1				2	1	1	1
Public speaking and expression.....	1		2	1			1	
Other (oral English, special English, etc.).....		2	1	1	3			
Social studies:								
Social studies.....	8	1	1	2	15	3	1	2
History.....		1	1	1	1		2	
American history.....			14	10		1	14	10
World history.....		3				3		
Civics.....	6	1	4	4		1		7
Vocational, economic, and community civics.....	9	1			8	1	1	
Occupations.....	3				3			
Problems of democracy.....	1	1		6	2	1		6
Other (ancient and modern history, geography, economics, etc.).....	3	3	2	1	4	1	1	4
Mathematics:								
Mathematics or general mathematics.....	10				15			
Algebra.....	7				5			
Plane geometry.....		6				3	1	
Other (arithmetic, advanced algebra, etc.).....	2	1		1		1		1
Science:								
Science or general science.....	12	2	3	1	18	1	3	2
Biology.....	3				3	1		
Other (physiology, botany, applied science).....	3	1	2	1	1		4	1

Likewise in grade 9 in the fields of the social studies, mathematics, and science, the course most often required is a general one, which in each instance is required in a greater number of schools after revision. Courses required in other grades in these fields are: American history in grades 11 and 12, civics and problems of democracy in grade 12, algebra in grade 9, plane geometry in grade 10, biology in grade 9, and science in grade 11, which is usually either physics or chemistry. Among these, algebra and plane geometry show decreases after revision.

Courses required in the special fields.—Data similar to those presented for the academic fields are shown in Table 76 for

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special fields including physical education, music, art, industrial arts, home economics, and such activities as clubs, home room, and the like. Except in physical education, few courses are required in any but the ninth grade. Courses and activities showing the greatest increments as a result of revision are physical education, music, guidance, assembly, clubs, and home room. Few changes have taken place in the fields of art, industrial arts, and home economics.

TABLE 76.—The number of schools requiring certain courses in the special fields, before and after revision

Subject field and courses	Before revision				After revision			
	Grade 9	Grade 10	Grade 11	Grade 12	Grade 9	Grade 10	Grade 11	Grade 12
1	2	3	4	5	6	7	8	9
Physical education:								
Physical education.....	27	22	13	15	26	29	23	19
Health.....	5	2	3	1	9	2	1	1
Physical education and hygiene.....	4	3		2	1			
Physical training and health Gymnasium.....	1				3	1	1	1
Music:								
Music.....	9				13	1		
Chorus.....	2					1	1	1
Appreciation.....					1			
Art:								
Art.....	3	1			2			
Freehand drawing.....					2			
Design.....	1				1			
Appreciation.....					1			
Industrial arts:								
Industrial or manual arts.....	3				2			
Mechanical drawing.....	3				3		1	
Shop.....	3				4			
Printing.....	1				2			
Other (electricity, machine practice).....	1				2			
Home economics:								
Home economics.....	1				1			
Sewing.....	3				2			
Cooking.....	3				4			
Home management.....		1	1		1		1	1
Socializing-integrative activities:								
Guidance.....	1				8	1	1	1
Assembly.....	2				4	1	1	1
Clubs.....	2				5	1	1	1
Auditorium.....	2				3	1	1	1
Home room.....	2	1	1	1	4			
Activities.....					2			

1. SUMMARY

1. As a result of revision, few changes are shown in the types of organization of grades or in types of arrangement of programs of studies. In later years, the combination type

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of programs shows an increase. An increment is shown in the average number and kinds of curriculums, the increment being largest for the general curriculum.

2. The average number of units of work offered has increased from 60.7 to 67.8 and the length of the classroom period from 47.5 to 52.3 minutes.

3. Increments are shown in the number of schools offering electives in English, fine arts, and industrial arts.

4. Each major subject field shows an increment in the number of units of work offered, those for the nonacademic fields being the more noteworthy.

5. Increments are shown for the courses or divisions of the academic fields as follows: English grammar, literature, library, practical English; world history, social problems, international relations; general mathematics; general science, hygiene, chemistry; all foreign languages. Decreases are shown for penmanship, commercial English, European history, civics, advanced algebra, biology, botany, zoology, agriculture, and psychology.

6. Increments are shown for courses offered in the special fields, as follows: Physical education; chorus, band, orchestra, glee club, music theory and appreciation; art, art appreciation; mechanical drawing, woodwork, shop, printing; dietetics, home management; typewriting, shorthand, bookkeeping, commercial law, business organization and administration, office practice, salesmanship, accounting, advertising; all socializing-integrative activities.

7. The number of units of work specified as required for graduation has increased in the average school from 7.5 to 8.1 units following revision. Few changes in the fields required have been made, but increments in grade 9 are to be noted for physical education, mathematics, and the socializing-integrative activities.

8. Increments in the specific courses required are for the most part those of a general nature, such as those in English, social studies, mathematics and science. In the nonacademic or special fields, increments are also to be noted in physical education, music, and the socializing-integrative activities. Most of these requirements are in grade 9.

CHAPTER XIX : TRENDS IN 26 PRIVATE SCHOOLS

1. PRELIMINARY STATEMENTS

Purpose of study.—An examination of the literature of the field reveals no study of changes which have taken place in the programs of studies of private schools in the past several years. It is the purpose of this investigation to indicate changes which were made, incident to revision of the curriculum within the past five years, in 26 senior or 4-year secondary schools under private control.

Method of conducting study.—In an examination of returns from more than 900 private schools, on a general form sent in connection with the Survey, it was indicated by 90 schools that they had made revision of the programs of studies within the past five years. A request was sent to each of these schools for a copy of their revised program of studies as well as a copy of the program in use immediately preceding revision. The 26 usable replies received are the basis of the present study. The method of securing these data suggests the selected nature of the private schools from which results are reported.

Characteristics of schools represented.—Although not a large number of schools are included, many different kinds of institutions are represented. For example, the study includes boys' and girls' schools, country day schools, military schools, college preparatory schools, university laboratory schools, and schools established by such religious denominations as Catholics, Lutherans, Church of Christ, Nazarenes, and Friends. These schools range in enrollment from 52 to 634, with an average of 227 pupils in grades 9 to 12. In all schools, except one in which only grades 10 to 12 are represented, data were secured for grades 9 to 12. All sections of the United States except the far West are represented. Three of the schools are located in the New England States, 6 in the Middle Atlantic States, 3 in the South, and 14 in the Middle West.

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Organization of this chapter.—The data will be presented in this chapter under three general headings. Under the "General Plan of Organization" will be included the administrative types of organization represented, the arrangement of programs according to types, the number and kinds of curriculums offered, and the total number of units of work offered. The section on "Required Work" will report the number of units required for graduation, the number of schools placing requirements in each of the major subject fields, the average number of units required, and the specific courses required in each of these fields. The third division of the body of the chapter is devoted to "Elective Work." Here are included the number of schools offering electives in each of the major subject fields, the average number of units offered in each field, and the specific courses which are offered as electives in each of the major fields.

1. THE GENERAL PLAN OF ORGANIZATION

Administrative types of organization.—Almost all of the schools represented were organized under the traditional 8-4 plan. However, while 20 were thus organized before revision, only 18 reported organization on this plan after revision. Schools organized as 6-year high schools increased from four to six at some time during the process of revision and two, reported as 3-year high schools before revision, were not so reported for their current organization.² Data were lacking on the grade organization of two schools after revision.

The administrative arrangement of programs according to type.—The types listed in Table 77 are those defined by Koos as cited in Chapter XI, section 3. Few changes appear in the figures for before and after revision. The programs of

TABLE 77.—The number of private schools having certain types of programs of studies, before and after revision

Type of program	Before revision	After revision
Single-curriculum.....	2	1
Multiple-curriculum.....	1	1
Constants-with-variables.....	12	13
Combination.....	11	11
Unknown.....	1	1
Total.....	26	26

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studies seem about equally divided between the constants-with-variables and the combination types with the single and multiple-curriculum types seldom used.

Number and kinds of curriculums offered.—The 12 schools reporting more than one curriculum before revision offered an average of approximately three curriculums while the 11 making a similar report after revision showed an average of about four curriculums. An increase of almost a whole curriculum has thus resulted during the revision process. The kinds of curriculums offered at these periods are indicated in Table 78. It will be noted that a small loss is shown after revision in the college preparatory curriculum, but gains are indicated for the commercial, industrial arts, and fine arts curriculums.

TABLE 78.—*The number of schools offering certain kinds of curriculums, before and after revision*

Kind of curriculum	Before revision	After revision
College preparatory.....	20	18
General.....	6	6
Fine arts.....	3	3
Commercial.....	7	9
Industrial arts.....	3	5
Home economics.....	2	2

Total units of work offered.—Revision has resulted in an increase of from 33.4 units of work offered by the average school before revision to 35.8 units offered after revision, or an average increase of 2.4 units. The range from the lowest to the highest offering was 20 to 53 units before revision as compared with 18 to 66 units after revision.

3. THE REQUIRED WORK

Work required of all pupils.—All schools require from 16 to 18 units of work for graduation from the 4-year high school. The average requirement has changed hardly at all incident to revision—from 16.6 units before revision to 16.7 units after revision. The specific courses which are required of all pupils, however, have experienced more change. Before revision, 10 units of work were in subjects or courses which every child had to take, but after revision the number of

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such units had increased to 10.5 units. The range is very wide: Before revision only 3 units were in courses required of all pupils in the lowest school, while 20% units were required of all pupils in the highest; the corresponding figures after revision are 4 and 26%. In view of such a wide range in the requirements, it seems probable that a unit does not have the same weight in all schools.

TABLE 79.—The number of private schools in which the major subject fields are required in grades 9, 10, 11, and 12, before and after revision

Subject field	Before revision				After revision			
	Grade 9	Grade 10	Grade 11	Grade 12	Grade 9	Grade 10	Grade 11	Grade 12
1	2	3	4	5	6	7	8	9
English.....	25	26	25	22	25	26	25	22
Social studies.....	13	9	7	16	12	9	9	13
Mathematics.....	21	17	6	1	17	11	8	2
Science.....	4	4	3	4	7	2	2	3
Physical education.....	10	10	9	8	8	8	8	8
Music.....	5	5	3	3	6	5	4	4
Art.....	4	3	2	1	5	1	2	2
Industrial arts.....						1	1	
Home economics.....	4	3	2	2	4	3	3	1
Foreign language.....	7	7	4	4	7	8	6	6
Other.....	8	9	9	8	6	8	8	7

¹ Ninth-grade programs were received from only 25 schools.

Schools requiring the major subject fields.—Some idea as to the major subject fields such as English, social studies, mathematics, and the like over which the work required of all pupils is distributed before and after revision may be obtained from Table 79. English is the only subject which is required in each grade in practically all schools. Mathematics, social studies, and physical education are next in order, but none of these is required half as frequently as English. There has been little change among the subject fields in the requirements before and after revision. A decrease is shown for mathematics and physical education after revision and a slight increase in music and foreign language for the same period. The other subject fields are practically the same for each period. Included under "other" are religion, Bible, and church history. The

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religious character of the instruction in some of these schools is indicated by the frequency of this requirement.

Number of units required in each field.—In Table 80 are given the average and range in the number of units of work required in each subject field. Averages were computed by dividing the total number of units by the 26 schools in each instance. Almost one unit of English is required by the average school for each of four years, judging from the figures shown in the table. Mathematics, social studies, and foreign language, in the order named, rank next in importance. The most significant changes incident to revision are a decrease in the average number of units required in mathematics and an increase in the requirement of foreign languages.

TABLE 80.—*The number of units of work required in the major subject fields in the average and the range of schools, before and after revision*

Subject field	Before revision		After revision	
	Average	Range	Average	Range
1	2	3	4	5
English.....	3.8	3.0-5.0	3.8	3.0-5.0
Social studies.....	1.6	.5-3.8	1.6	1.0-4.0
Mathematics.....	1.8	1.0-3.0	1.4	1.0-4.0
Science.....	.6	.5-3.0	.6	.8-2.0
Physical education.....	.4	.5-2.0	.3	.5-1.0
Music.....	.2	.5-2.0	.2	.5-1.8
Industrial arts.....			.1	2.0-2.0
Home economics.....	.3	.5-3.0	.3	1.0-2.0
Foreign language.....	.9	2.0-4.0	1.4	2.0-8.0
Other.....	.6	1.0-2.0	.7	1.0-4.0

Specific courses required.—Changes which have been made in the specific courses required within the academic subject fields such as English, mathematics, etc., incident to revision, are indicated in Table 81. In English the course most often required is a general one, designated as English. Except for a few schools offering courses in public speaking, changes are seldom shown in this field. In the social studies there seems to be a tendency to offer American history in grade 11 in some schools instead of confining it to grade 12. There is also a slight tendency to offer more courses in citizenship or social problems. In mathematics college entrance re-

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quirements seem of late not so rigidly adhered to, judging by the decrease in the number of schools requiring algebra and plane geometry. General science was required in more schools after revision as were also foreign languages. Except for decreases indicated in algebra and plane geometry, modifications in none of the subject fields have been great.

TABLE 81.—The number of private schools requiring certain courses in the academic fields, before and after revision

Subject field and courses	Before revision				After revision			
	Grade 9	Grade 10	Grade 11	Grade 12	Grade 9	Grade 10	Grade 11	Grade 12
1	2	3	4	5	6	7	8	9
English:								
English.....	25	26	25	20	24	25	23	18
Literature.....					1	1	1	2
Public speaking and expression.....			1		2	2	3	2
Drama.....	1	1	1	1				
Penmanship.....	1				1			
Spelling.....					1			
Social studies:								
History.....	1	1		3				
American history.....			3	12	1		6	12
Ancient history.....	10	3			8	3		
Medieval history.....		2	4		1	2	1	
Modern history.....		1	4	1		2	3	
World history.....		2				3		
English history.....			1					
Civics and citizenship.....	2	1	1	2	3	1	3	3
Social problems.....	1			1	2			1
Political science.....								1
Geography.....	1							
Mathematics:								
Mathematics.....	2	3	1		1		1	
General mathematics.....					1			
Algebra.....	18	6			13	4		
Advanced algebra.....	1				1		1	
Plane geometry.....	2	9	5	1	1	7	5	
Solid geometry.....			1				1	1
Trigonometry.....								1
Advanced arithmetic.....	2				1			1
Science:								
Science or general sciences.....	3			1	6		1	1
Agriculture.....		1						
Physiology.....	1							
Biology.....		3		1		2		1
Chemistry.....				2			2	1
Physics.....			3					
Foreign language:								
Foreign language.....	1	2	2	2	4	5	3	3
Latin.....	6	5			4	4	2	2
French.....	2	2	2	2		1	2	2
German.....		1	1	1		1	1	1

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TABLE 82.—The number of private schools requiring certain courses in the special fields, before and after revision

Subject field and courses	Before revision				After revision			
	Grade 9	Grade 10	Grade 11	Grade 12	Grade 9	Grade 10	Grade 11	Grade 12
1	2	3	4	5	6	7	8	9
Physical education:								
Physical education or health	12	12	11	11	12	12	12	12
Gymnasium	2	2	2	1				
Music:								
Music	2	2	1	1	2	2	1	1
Theory					1	1	1	1
Vocal	1	1	1	1	1	1	1	1
Glee club	2	2	1	1	2	2	2	2
Appreciation					1			
Art:								
Art	1				1			
Drawing	3	3	1	1	3	1	1	1
Decoration	1							
History			1				1	1
Appreciation					1			
Industrial arts:								
Shop							1	1
Home economics:								
Home economics					1	2	1	
Foods		1						
Clothing	3	3	2	2	2	1	1	1
Household arts	1		1		1		1	
Other:								
Religion	8	8	8	8	7	7	7	7
Ethics	1	1	1			1	1	2
Psychology					1			

Changes which have taken place in the courses offered in physical education, music, art, industrial arts, and home economics (designated as the special fields) are shown in Table 82. Physical education is the only one of these fields in which a requirement is made by a fourth of the schools. There is a slight tendency to require more work in the industrial arts, but in the remaining fields few changes are indicated.

4. THE ELECTIVE WORK

Number of schools in which offered.—Data, similar to those already shown as required, are indicated in this section for elective work. The number of schools which offer electives in each major subject field, before and after revision, is indicated in Table 83. Judging from the table, the greatest changes which have been made in the program of studies incident to revision are in increments in the elective offerings. These increments are shown for English, the social studies,

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the early grades of mathematics, science, music, art, industrial arts, home economics, foreign language, and commerce. Only one or two schools offer electives in physical education.

TABLE 83.—The number of private schools in which the major subject fields are elective in grades 9, 10, 11, and 12, before and after revision

Subject field	Before revision				After revision			
	Grade 9	Grade 10	Grade 11	Grade 12	Grade 9	Grade 10	Grade 11	Grade 12
1	2	3	4	5	6	7	8	9
English.....	1	3	4	6	4	6	6	8
Social studies.....	8	14	13	13	12	15	15	17
Mathematics.....	5	9	17	19	9	14	16	16
Science.....	14	12	17	20	11	15	21	21
Physical education.....	1	1	1	1	2	2	2	3
Music.....	5	5	5	5	10	10	10	10
Art.....	6	5	9	6	8	9	8	8
Industrial arts.....	5	4	5	3	7	6	7	5
Home economics.....	5	5	6	6	5	8	7	6
Foreign languages.....	17	21	24	20	19	22	24	25
Commerce.....	7	6	14	13	7	7	16	16
Other.....			1				1	1

Number of units elective.—The facts revealed in the preceding table are indicated from another angle in Table 84, showing the average and range in the number of units of work offered in each field before and after revision. The table shows an increment in the average number of units offered in English, social studies, mathematics, music, art,

TABLE 84.—The average and range in the number of units of elective work in the major subject fields, before and after revision

Subject field	Before revision		After revision	
	Average	Range	Average	Range
1	2	3	4	5
English.....	0.6	0.5-6.8	1.1	0.5-8.5
Social studies.....	1.8	0.5-5.0	2.4	.5-6.0
Mathematics.....	2.0	1.0-6.0	2.2	1.0-7.0
Science.....	2.8	1.0-6.0	2.8	1.0-6.0
Physical education.....	.2	4.0-4.0	.1	1.0-1.0
Music.....	.8	1.0-8.0	1.9	1.0-12.3
Art.....	.9	.5-4.3	1.1	.5-8.0
Industrial arts.....	1.8	1.0-30.0	1.4	.5-10.0
Home economics.....	.7	1.5-4.0	1.1	.5-8.0
Foreign language.....	7.8	1.0-22.0	7.9	1.0-14.0
Commerce.....	3.0	.5-8.0	4.0	1.0-12.5
Other.....	.2	1.0-3.0	.1	1.0-2.0

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home economics, foreign language, and commerce. The increase is greatest in commerce, in which field an average of three elective units before revision has increased to four elective units after revision. Slight decreases are shown for physical education, industrial arts, and "other."

Elective courses.—An idea as to the specific courses which contributed to the increments shown in the preceding section is to be gathered from Tables 85 and 86, in which the number of schools offering courses, before and after revision, in the academic and the special fields is presented. In Table 85, showing the academic fields, the most significant increments in English are for public speaking, drama, and journalism; in social studies, for American history, ancient history, citizenship, and social problems; in foreign language, for French. Few increments are shown in mathematics and science. In Table 86, showing the special fields, the most marked increments are for theory and instrumental music; for drawing in the field of art; for household arts in home economics; and for junior business training, type-writing, and accounting in the commercial field.

TABLE 85.—The number of private schools offering certain elective courses in the academic fields, before and after revision

Subject field and courses	Before revision				After revision			
	Grade 9	Grade 10	Grade 11	Grade 12	Grade 9	Grade 10	Grade 11	Grade 12
1	2	3	4	5	6	7	8	9
English:								
English.....			1	5			1	5
Literature.....				1			1	2
Modern literature.....								3
Public speaking and expression.....	1	2	2	2	3	4	3	4
Drama.....			1	1		1	3	2
Journalism.....			1				3	2
Other (library, penmanship, spelling, business English).....		4			2	3	2	
Social studies:								
History.....	1	2	2	2				1
American history.....			3	3			4	6
Ancient history.....	4		1		7	1	1	1
Medieval history.....		3	2		1	3	3	1
Modern history.....		7	3			9	5	1
World history.....	1	3		1		1		1
English history.....			2	1			3	2
Civics and citizenship.....	2	1	2	1	2	1	1	4
Social problems.....			1	1				4

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TABLE 85.—The number of private schools offering certain elective courses in the academic fields, before and after revision—Continued

Subject field and courses	Before revision				After revision			
	Grade 9	Grade 10	Grade 11	Grade 12	Grade 9	Grade 10	Grade 11	Grade 12
1	2	3	4	5	6	7	8	9
Social studies—Continued.								
Problems in a democracy.....				1	1		1	
Geography.....					1	3		
Economics.....				4	1		2	5
Other (vocational guidance, German life, political science).....				1	1	1	1	1
Mathematics:								
Mathematics.....			2	3	2	2	2	4
General mathematics.....					4			1
Algebra.....	5	2	1	1	5	3		
Advanced algebra.....		1	11	1		1	12	2
Plane geometry.....		8	3	1		10	1	
Solid geometry.....			4	11			4	9
Advanced arithmetic.....	2			3			1	1
Trigonometry.....				11			1	9
Science:								
Science or general science.....	8		1	1	6	1		
Physical geography.....	2	1	1		1	3	1	
Biology.....	2	6	3		2	8	1	
Botany.....	1	2	1		1	2		
Zoology.....		2	1		1		1	
Physiology.....	3	2		3	1	1	1	3
Chemistry.....		1	8	9		1	12	10
Physics.....			8	13			10	10
Foreign language:								
Latin.....	16	18	23	20	16	19	19	21
French.....	10	14	12	10	12	15	15	14
Spanish.....	4	5	6	5	5	7	4	4
German.....	8	10	11	10	8	10	9	9
Italian.....	1	1	1	1			1	1
Foreign language.....	2	1	2	1	1	1	2	2
General language.....					1			
Greek.....	2	3	4	2	2	3	2	2

TABLE 86.—The number of private schools offering certain elective courses in the special fields, before and after revision

Subject field and courses	Before revision				After revision			
	Grade 9	Grade 10	Grade 11	Grade 12	Grade 9	Grade 10	Grade 11	Grade 12
1	2	3	4	5	6	7	8	9
Physical education:								
Physical education or health.....	1	1	1	1	1	1	1	1
Dancing.....					1	1	1	1
Military science.....	1		1					1
Music:								
Music.....	5	5	5	5	7	6	5	5
Theory.....					2	3	4	2
Vocal.....					1	1	1	1
Instrumental.....	1	1	1	1	5	4	4	5

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TABLE 86.—The number of private schools offering certain elective courses in the special fields, before and after revision—Continued

Subject field and courses	Before revision				After revision			
	Grade 9	Grade 10	Grade 11	Grade 12	Grade 9	Grade 10	Grade 11	Grade 12
1	2	3	4	5	6	7	8	9
Music—Continued.								
Appreciation.....		1						
Orchestra.....						1	3	2
Glee club.....					1	3	3	3
Other.....					1			1
Art:								
Art.....	2	1	2	2	7	8	7	6
Drawing.....	4	4	6	5	1	1		
Appreciation.....								1
History.....			2				1	1
Decoration.....					1	1	1	1
Industrial arts:								
Mechanical drawing.....	1		1		3	2	3	2
Shop.....	1	1	1	1	1	1		
Manual training.....	2	2	2	1	5	3	2	2
Vocational agriculture.....	2	2	2	2	2	1	3	3
Electricity.....	1				1			
Printing.....	1	1	1	1	1	1	1	1
Woodwork.....					1	1	1	1
Motors.....					1	1	1	1
Other.....	1	1	1		2	1	1	
Home economics:								
Home economics.....	1		1	1	2	2	2	2
Foods.....	2	1	1		1	2	1	
Clothing.....	3	2	2	2	4	5	3	2
Household arts.....	2	3	2	3				
Nursing.....						1	1	1
Commerce:								
Commercial geography.....	2	1	2	3	1	1	3	
Commercial arithmetic.....	3	1	1	3	2	1		1
Junior business training.....					4			
Bookkeeping.....		6	8	4	1	5		4
Shorthand.....	1		10	9	1	1	10	9
Typewriting.....	3		12	11	3	5	13	13
Commercial law.....			1	6			3	5
Salesmanship.....			1				1	1
Stenography.....			2	1		2	4	4
Accounting.....								3
Secretarial.....							1	1
Office practice.....				2				3
Other.....								2
Other:								
Religion.....					1	1	2	2
Ethics.....				1				

SUMMARY

In general, the changes in programs of studies in private schools are less frequent than in the programs of public high schools as disclosed in the foregoing chapters. The following trends are shown:

1. Small increments, as a result of revision, obtain in the number of schools which have abandoned the 8-4 type of organization, seemingly for the 6-6 type. The average num-

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ber of curriculums offered has increased from three to four. A small loss is shown in the number offering the college preparatory curriculum.

2. The total number of units of work offered in the average school increased from 33.4 to 35.8 as a result of revision. The number of units in courses specified for graduation increased from 10 to 10.5.

3. Few changes are shown in the number of schools requiring each subject field. Increases are indicated in music and foreign languages and decreases in mathematics and physical education. A decrease is also recorded for the number of units of work required in mathematics, but an increase is shown for foreign language.

4. Changes in specific courses required are also small. Increments are shown for general English, public speaking, citizenship, general science, foreign language, and industrial arts. Decreases are shown for algebra and plane geometry.

5. The greatest changes, as a result of revision, apply to the elective work. Increments in the number of schools offering electives are shown for the following fields: English, social studies, early grades of mathematics, science, music, art, industrial arts, home economics, foreign language, and commerce. Increments are also shown in the number of units of work elective in each of the preceding fields except science and industrial arts. Slight decreases are shown for industrial arts and commerce.

6. Increments are also shown in the following specific courses offered within the various fields: Public speaking, drama, and journalism; American history, ancient history, citizenship, social problems; French; music theory, instrumental music; art; household arts; junior business training, typewriting, and accounting.

DIVISION III : HOW THE PROGRAM OF STUDIES WORKS OUT

CHAPTER XX : PURPOSE AND METHOD OF THE STUDY

1. THE PURPOSE OF THE STUDY

In the earlier chapters of this report the changes which have taken place in the programs of studies of representative high schools have been described. In addition to the changes in subjects offered and in subjects required, the changes in the percentage distribution of work being taken by all high-school pupils have been reported.

The purpose of this part of the study is to analyze the operation of the programs of studies of the high school in terms of all work taken in four years by high-school graduates. To this end it is desirable—

1. To determine the present percentage distribution of work actually completed by graduates in different subject fields during the 4-year high-school period.
2. To make an analysis of subject patterns now being studied in foreign languages, science, and mathematics.
3. To determine what changes have taken place since 1890 in percentage distribution of high-school work among various subject fields.
4. To study recent trends and present practices in the distribution of work taken in high school and college by college graduates.

2. THE SOURCE OF THE DATA

The data were taken from the high-school records of the graduates of certain high schools and from the high-school and college records of the graduates of a number of colleges and universities. The high schools represented were: The Classical, Technical, Commercial, and Hope Street High Schools of Providence, R. I.; the Central and Eastern High Schools of Washington, D. C.; the Joliet Township High School, Joliet, Ill.; the East, West, North, South, and

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Manual Training High Schools of Denver, Colo.; and the Long Beach (Calif.) High School. The higher institutions included were: Vassar College, Princeton University, the University of Chicago, the University of Denver, George Washington University, the University of Wyoming, and Leland Stanford University. In most instances, a sampling of the records of the graduates was taken, but in the Denver high schools all graduates of certain years were used. A more detailed statement about the origin of the data will be made in connection with each section of the report.

3. THE METHOD

The record for grades 9 to 12, inclusive, was looked up for each of the graduates and the information was transferred to a standard form in terms of total semester hours. One college entrance unit was counted as 10 semester hours. All tabulations were made from these information sheets. For Denver, where the inclusion of all graduates in 1930 made the numbers large, the information was punched on Hollerith cards and tabulated on Hollerith tabulating machines. The tabulations were made by hand for the other cities.

CHAPTER XXI : THE PRESENT HIGH-SCHOOL CURRICULUM
AS IT WORKS OUT

1. THE SCOPE OF THE CHAPTER

The purpose of this chapter is to report the present percentage distribution of high-school work among the various subject fields as shown by an analysis of the work taken by graduates of high schools in several cities. The subject groups used are English, the social studies, foreign languages, mathematics, science, and nonacademic subjects not including physical education.

All graduates of the five high schools of Denver for June, 1930, and a selected sampling of graduates of the four high schools of Providence, the Central and Eastern High Schools of Washington, the Long Beach High School, and the Joliet Township High School for the same year, were used in the study. By this selection of high schools, a wide geographical distribution was secured. Providence and Washington are Eastern cities; Joliet Township and Denver represent the territory included by the North Central Association of Colleges and Secondary Schools; Long Beach typifies the far Western high school.

The records for the ninth grade were included in the study, regardless of whether this grade was a part of a junior high school or the first grade in a 4-year high school. In the five cities the high-school records of 1,105 boys and 1,261 girls were studied. The distribution of the graduates among the cities is shown in Table 87.

TABLE 87.—*The numbers of high-school graduates included from the five cities in which records were studied*

City	Number of graduates		
	Boys	Girls	Total
1	2	3	4
Danver, Colo.....	711	826	1,537
Washington, D. O.....	112	117	229
Joliet, Ill.....	94	106	200
Long Beach, Calif.....	100	100	200
Providence, R. I.....	88	112	200
Total.....	1,105	1,261	2,366

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In addition, data reported in a recent investigation of the work of the graduates of the Trenton (N. J.) Senior High School; the Grover Cleveland High School of St. Louis, Mo.; the Sacramento (Calif.), Senior High School; and the three high schools of Springfield, Mass., for the years 1926-1929 are utilized in the first part of the chapter.¹ The methods employed in that study in gathering and reporting the findings were similar to those used in the present study.

The following questions were studied in this part of the investigation:

1. What percentage of the work completed by the graduates of the high schools of nine cities in 1926-1930 was taken in each subject field?

2. What differences were found among the nine cities in the percentage distribution of the work taken by the high-school graduates in 1926-1930?

3. What differences were found among individual specialized high schools within the same city in percentage distribution of work completed by the graduates?

4. How did the percentage distribution of the work completed by the graduates of certain high schools compare with the percentage distribution of work being taken at a given time by all pupils in the same high school?

5. What relationship existed between scholarship rank and percentage distribution of work completed by high-school graduates in one city in 1930?

2. PERCENTAGE DISTRIBUTION OF THE WORK COMPLETED BY THE GRADUATES OF THE HIGH SCHOOLS IN NINE CITIES

The percentage distribution of work completed by graduates of the high schools of nine cities in 1926-1930, including the four cities studied by Gamble, was determined by computing first the average percentage distribution of work taken by the high-school graduates of each of the nine cities in the various subject groups and by finding next the median of the average percentages for the nine cities in each

¹ Gamble, Joseph N. *The Place of Natural Science in Programs of High-School Graduates.* *School Review*, 39: 177-185, March, 1931.

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subject group. These median percentages are shown in Figure 12.

From the figure it is evident that the nonacademic group of subjects accounted for the largest percentage of the work of the graduates of the nine cities and the science group for the smallest percentage. Among the academic fields the largest percentage of work was taken in English, followed by

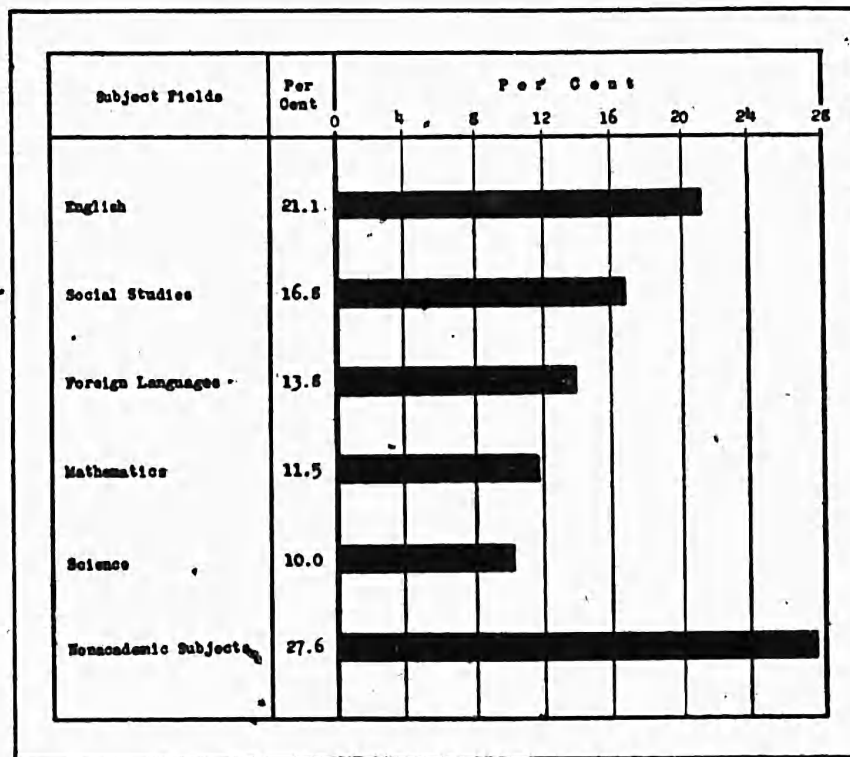


FIGURE 12.—Median percentages of work taken in six subject fields by high-school graduates in nine cities, 1926-1930

the social studies, foreign languages, mathematics, and science.

In terms of median percentages, the various subject groups included approximately the following fractional parts of the total semester hours taken by the high-school graduates of the nine cities: English, one-fifth; social studies, one-sixth; foreign languages, one-eighth; mathematics, one-ninth; science, one-tenth; and nonacademic subjects, one-fourth.

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5. DIFFERENCES AMONG CITIES IN PERCENTAGE DISTRIBUTION OF WORK

Percentage distribution among subject groups.—The percentage distribution of work completed by graduates of the high schools of nine cities in classes 1926–1930 is shown in Table 88. The schools are arranged in the order of increasing percentage of nonacademic work,

TABLE 88.—Percentage distribution of work completed by high-school graduates in classes 1926–1930 in nine cities arranged in order of percentages of nonacademic work

City	Number of graduates	Date of graduation	Percentage distribution by subject groups					
			English	Social studies	Foreign language	Mathematics	Science	Non-academic ¹
1	2	3	4	5	6	7	8	9
Washington ²	229	1930	25.4	15.1	19.6	14.6	8.6	16.7
Denver.....	1,537	1930	21.8	19.7	14.8	13.8	10.7	19.2
Joliet ³	200	1930	21.4	16.8	7.4	11.3	20.6	22.5
Trenton ³	1,500	1926-29	21.6	15.7	14.5	14.0	9.0	25.2
St. Louis ³	1,246	1926-29	21.1	18.9	10.5	11.3	10.7	27.6
Providence ³	200	1930	18.6	15.5	15.5	12.4	10.0	28.0
Sacramento ³	610	1929	20.6	16.8	12.8	10.5	8.9	30.5
Long Beach ³	200	1930	19.4	18.3	9.4	9.1	11.6	32.2
Springfield ³	2,716	1926-29	19.8	12.9	13.8	11.5	9.4	32.6
Total (median).....	8,438		21.1	16.8	13.8	11.5	10.0	27.6
Median deviation from median.....			.7	1.5	1.7	1.0	1.1	4.6

¹ Does not include physical education.

² Sampling of graduates of 1930. The Washington graduates were all a college-preparatory group.

³ Data adapted from Joseph N. Gamble. The Place of Natural Science in Programs of High-School Graduates. School Review, 39: 177-185, March, 1931.

The lowest percentage of work taken in English was 18.6 taken by the graduates of the Providence high schools, and the highest was 25.4 taken by the graduates of the Washington high schools. The percentage of work in English completed by the graduates of the latter high schools was about one and one-third times the percentage completed by the graduates of the former.

Considerable agreement was found among the nine cities in percentage of work taken in social studies, although the agreement was less close than in English. The range in percentage was from 12.9 in Springfield to 19.7 in Denver.

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The percentage of social studies work completed by the graduates in the latter city was slightly more than one and one-half times the percentage taken by the graduates in the former.

Very large differences occurred in the percentages of semester hours taken in foreign languages by the graduates of the nine cities. The range was from 7.4 for the Joliet graduates to 19.6 for the Washington graduates. The percentage of foreign languages completed by graduates in the latter city was about two and two-thirds times the percentage completed by graduates in the former. As noted in the table, however, the group of Washington pupils was preparing for college. The median deviation from the median was 1.7 per cent which was larger than the median deviation in any of the other academic subject groups.

In percentage of work taken in mathematics, the cities fell within the range from 9.1 to 14.6 per cent. The smallest percentage was taken by the graduates of the Long Beach High School and the largest percentage by the Washington college preparatory graduates. The median deviation from the median was only 1 per cent, which was smaller than for any other subject group except English.

Except in one city little variation was found in percentage of work taken in science. The range in percentage for eight of the nine cities was from 8.6 to 11.6 per cent—a difference of only 3 per cent. In the Joliet Township High School, however, 20.6 per cent of the semester hours were in this field. The high proportion of science in the work of the Joliet graduates was no doubt due to the science requirements there. Of the 16 curriculums offered 1 requires 5 semester hours, 5 require 20 semester hours each, 7 require 30 semester hours each, and 3 require 40 semester hours each of science.

In percentage of work completed in the nonacademic group the range was from 16.7 per cent for the college-preparatory pupils in Washington to 32.6 per cent in Springfield. The median deviation was 4.6 per cent; this was decidedly larger than the deviation in any of the other subject groups.

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In general, with the exception of foreign languages, most of the differences among the high schools in percentage of work completed in the academic fields were small. Notwithstanding the tendency toward agreement in percentage of work taken in the majority of the subject groups, some striking contrasts in percentage distribution of work completed by the graduates are found. For instance, the graduates of the Washington high schools were highest among those of all the cities in percentage of work taken in English, foreign languages, and mathematics, but were lowest or next to lowest in percentage of work completed in social studies, natural science, and nonacademic subjects. The graduates of the Long Beach High School, on the other hand, were relatively low in English, foreign languages, and mathematics, but were high in social studies, natural science, and the nonacademic fields.

Percentage distribution between academic and nonacademic groups.—It has already been pointed out that there were large differences among the high schools in attention given to the nonacademic subjects. These subjects were not prominent in the programs of the Washington graduates, but were of considerable importance in those of the graduates of some of the other cities. Figure 13 shows, however, that all the cities held to the academic tradition to the extent that the pupils took at least twice as much academic as nonacademic work.

Academic subjects accounted for about five-sixths of the work of the Washington graduates, by whom the smallest amount of nonacademic work was taken, and for slightly more than two-thirds of the work of the Springfield and Long Beach graduates, who averaged highest in nonacademic work.

Although the subjects taken by high-school graduates were mainly academic, the importance of nonacademic subjects is shown by the fact that more work was taken in the nonacademic field than in any single academic field in seven of the nine cities.

Percentage distribution among subjects.—The percentages of work completed in individual subjects within the fields of

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foreign languages, science, commerce, and several other nonacademic subjects were computed for the graduates of Denver, Washington, Joliet, Providence, and Long Beach. The percentages are shown in Table 89.

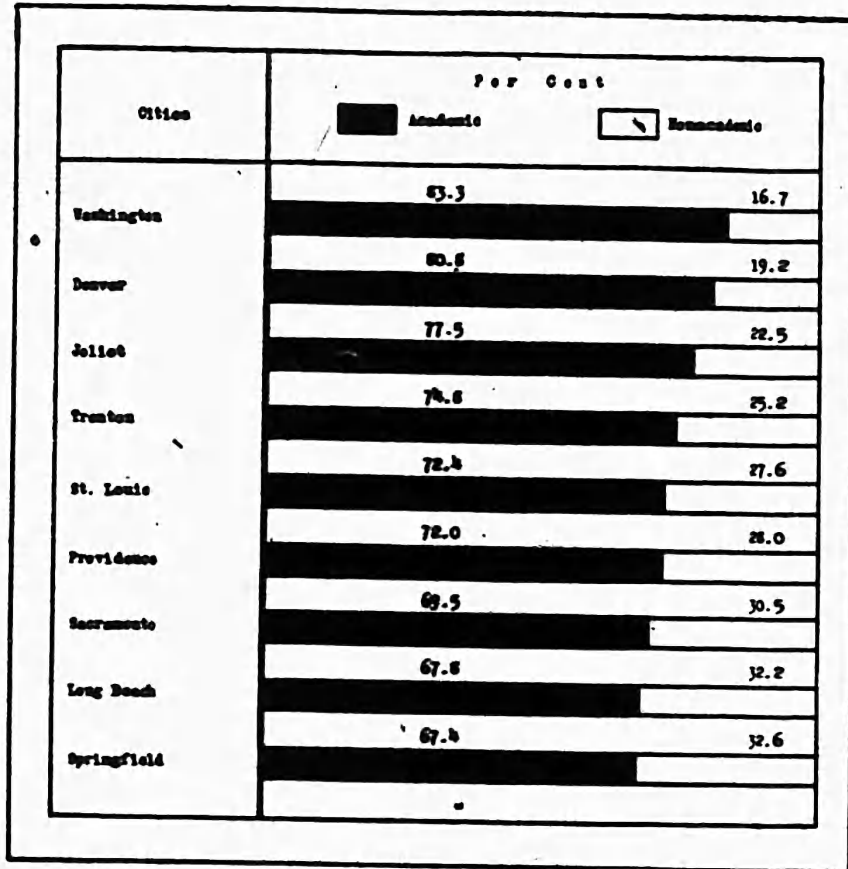


FIGURE 12.—Percentage of academic and nonacademic work completed by high-school graduates in nine cities, 1926-1930

The cities varied considerably in the percentage of work taken in individual foreign languages. In Denver, Latin received the most time with Spanish a close second; in Washington, French ranked first with Latin a strong second; in Joliet, Latin dominated the situation; in Long Beach, Spanish was dominant; and in Providence, French stood out as the most important foreign language.

The percentages of work completed in the sciences showed some marked variations from city to city. General science

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was negligible in Denver in grades 9 to 12 because it had been placed in grades 7 and 8 where it was required of all pupils. On the other hand more than three-fourths of the science completed in Providence was general science. Biology was the most important science in terms of percentages in Long Beach and Washington, and it was tied with chemistry for first rank in Denver. In Long Beach one-half of all science completed was biology. The status of the sciences in general was that biology and general science were highest and chemistry was lowest in percentage of work.

TABLE 89.—Percentage distribution of work completed by high-school graduates in five cities in June, 1930

Subject	Cities represented					Mean
	Denver	Washington	Joliet	Long Beach	Providence	
1	2	3	4	5	6	7
English.....	21.8	25.4	21.4	19.4	15.6	21.3
Social studies.....	18.3	15.1	16.8	18.2	15.4	16.7
French.....	2.2	8.5	1.3	1.8	7.3	4.5
Spanish.....	6.1	3.5	1.9	5.6	1.2	3.6
German.....	.2	.8	.8	.04	2.4	.9
Latin.....	6.3	6.7	3.4	2.0	4.6	4.7
Total foreign language.....	14.8	19.6	7.4	9.4	15.5	13.7
Mathematics.....	13.9	14.6	11.3	9.1	12.4	12.4
General science.....	.5	1.3	4.5	1.1	7.7	3.1
Biology.....	3.0	3.7	3.6	5.8	.6	3.2
Chemistry.....	3.0	2.1	1.6	1.3	.6	1.7
Physics.....	2.3	1.5	4.5	1.8	.6	2.1
Other.....	1.9		6.4	1.6	.5	1.9
Total science.....	10.7	8.6	20.6	11.6	10.0	12.0
Stenography.....	2.4	6.1	3.5	1.1	2.4	3.1
Bookkeeping.....	1.4	1.8	2.7	1.9	2.2	2.0
Typing.....	2.4	(1)	4.1	2.7	3.1	2.4
Other.....	3.2	3.6	1.8	8.7	9.2	5.6
Total commerce.....	9.4	11.5	12.1	15.4	16.9	13.1
Home economics.....	2.9	2.1	3.1	3.1	1.2	2.4
Industrial arts.....	2.7	1.3	5.4	4.4	6.1	4.0
Art.....	1.9	.8	.5	2.8	3.0	1.8
Music.....	2.2	1.0	1.4	6.5	.8	2.3
Psychology.....	1.4	(2)	(2)	.1	.1	.3
Total miscellaneous.....	11.1	5.2	10.4	16.9	11.2	10.8
Number of graduates.....	206	229	200	200	200	1,036

¹ Included in stenography and transcription.

² Included in social studies.

³ Sampling of Denver graduates in order to avoid weighting the mean unduly.

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Commerce was the most popular nonacademic field. In fact, in three of the five cities, a larger percentage of work was completed in commercial subjects than in all other non-academic subjects combined. The proportion of semester hours in commerce was especially high among the Providence graduates. The old standard subjects of stenography, typewriting, and bookkeeping accounted for more than half the time devoted to commerce.

Of the subjects included in the miscellaneous group, home economics ranked first in Denver and Washington, industrial arts ranked first in Joliet and Providence, and music ranked first in Long Beach.

4. DIFFERENCES AMONG SPECIALIZED HIGH SCHOOLS WITHIN THE SAME CITY

It is apparent from the data presented in the preceding section that there are considerable differences from city to city in percentage distribution of work completed by the high-school graduates. Are there likewise noteworthy variations in the distribution of work taken by the graduates of different specialized high schools within the same city? This question was studied by comparing the percentage distributions of the work of the 1930 graduates of three high schools of Providence. The Providence schools are the Classical High School, the Commercial High School, and the Technical High School.²

The data for these high schools are shown in Table 90. Percentages adapted from the data reported by Gamble for the Central, Technical, and Commerce High Schools of Springfield are included in the table for purposes of comparison.

² The records used consisted of a sampling of those of the graduates of each high school. One Providence school, the Hope Street High School, was omitted from this part of the study.

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TABLE 90.—Percentage distributions of work completed by graduates of 1930 from individual specialized high schools of two cities ¹

Subject group	High school		
	Classical, Providence; Central, Springfield	Commercial, Providence and Springfield	Technical, Providence and Springfield
1	2	3	4
Providence:			
English.....	19.8	19.3	16.3
Social studies.....	12.2	19.2	13.0
Foreign languages.....	28.8	7.5	8.0
Mathematics.....	19.8	5.6	14.3
Science.....	7.7	7.0	13.9
Nonacademic ²	1.7	41.4	34.5
Springfield:			
English.....	21.9	19.8	17.3
Social studies.....	12.3	16.9	9.0
Foreign languages.....	27.0	3.8	8.7
Mathematics.....	15.6	3.7	15.6
Science.....	10.3	4.0	14.7
Nonacademic ²	13.2	51.8	34.8

¹ Data for Springfield adapted from Gamble, op. cit.

² Does not include physical training.

Wide differences existed in the percentage distributions of work taken by the graduates of individual specialized high schools within the same city. The differences were comparatively small in English and social studies, but they tended to be large in all other subject fields. They were especially marked in foreign languages and in the non-academic group. In general, the differences among specialized high schools within the same city were greater than the differences among cities.

The differences between the conservative type of high school, the commercial high school, and the technical high school were much the same in Providence and Springfield. In both cities, the graduates of the conservative type of high school took larger percentages of work in English, foreign languages, mathematics, and science, and smaller percentages of work in social studies and the nonacademic subjects than did the graduates of the commercial high school. Likewise, the graduates of the commercial high school in both cities took larger percentages of work in English, social studies, and the nonacademic group, and smaller percentages of work in foreign languages, mathematics, and science than did the graduates of the technical high school.

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5. COMPARISON OF PERCENTAGE DISTRIBUTION OF WORK COMPLETED BY HIGH-SCHOOL GRADUATES WITH PERCENTAGE DISTRIBUTION OF WORK BEING TAKEN BY ALL PUPILS

In a study of the high-school curriculum in 1924, Counts found the percentage distribution of work being taken by all pupils in a group of high schools.³ Comparable data for 1931 for the same schools visited by Counts in 1924 have been secured as a special project of this Survey.⁴ Gamble has reported a study in which the records of high-school graduates only were used.⁵ The present study, likewise, is based upon the work of high-school graduates. It is pertinent to this discussion of the present high-school program of studies to raise the following question: How does the percentage distribution of work completed by the high-school graduates of certain cities in recent years compare with the percentage distribution of work being taken by all high-school pupils in the same cities? Available data for Denver, Trenton, and St. Louis are shown in Table 91. The information regarding Denver was gathered in this study; the data for the total membership in Trenton and St. Louis are for 1931 and are taken from the revision of Counts' study; the data for graduates in these cities are taken from Gamble's study.

TABLE 91.—Percentage distribution of work completed by high-school graduates or carried at a given time by total membership of high schools in certain cities

Subject group	Denver		Trenton		St. Louis	
	Total membership	Graduates	Total membership	Graduates	Total membership	Graduates
1	2	3	4	5	6	7
English.....	16.5	17.8	17.6	19.9	18.6	18.2
Social studies.....	14.7	16.1	14.1	14.5	14.4	16.3
Foreign language.....	10.9	12.1	8.8	13.4	9.4	9.0
Mathematics.....	10.2	11.3	8.7	12.9	9.6	9.7
Science.....	8.6	11.4	7.5	8.3	13.7	9.2
Nonsacademic ¹	39.1	31.3	43.3	31.0	34.3	37.6

¹ Physical education included.

² Counts, G. S. The Senior High School Curriculum. Supplementary Educational Monograph No. 29. Chicago, Department of Education, The University of Chicago, 1923.

³ See Table 63.

⁴ Gamble, *op. cit.*

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The graduates in Denver and Trenton took a smaller percentage of nonacademic work and a larger percentage of work in each of the academic subject groups than did the total membership of the high schools. In St. Louis the graduates took a larger percentage of nonacademic work and a smaller percentage of work in each of the academic subject groups except social studies and mathematics than did the total membership.

When the data given for St. Louis in 1931 are compared with what Counts found in 1924, it is interesting to note that the total membership took a much smaller percentage of nonacademic work in 1931 than in 1924, namely, 34.3 per cent in 1931 and 43.1 per cent in 1924. The corresponding increase in the academic subject groups from 1924 to 1931 was distributed almost equally among the five groups.

Two possible reasons may be advanced to explain the differences between the graduates and the total membership in Denver and Trenton. It may be that the more highly selected group represented by the graduates found the academic subjects more to their liking than did the total membership of the high schools. On the other hand, it is possible that the graduates wished to take a larger amount of nonacademic work, but were forced to take academic subjects in order to meet graduation requirements or to prepare for college entrance. Whatever may be the explanation, the difference between the two groups with respect to percentage of work taken in academic and nonacademic fields is a clear-cut one.

6. RELATIONSHIP BETWEEN SCHOLARSHIP RANK AND PERCENTAGE DISTRIBUTION OF WORK COMPLETED

The problem and method.—It has been shown that the percentage distribution of work completed in high school tends to vary considerably from city to city and from school to school within a given city, and that it is somewhat different for the four years' work of high-school graduates than for the work being taken at a given time by all pupils of the same school. Does it also vary with the scholarship of the pupils; that is, Do the better pupils tend to take more work in certain subject fields than do the pupils who have inferior scholastic records?

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An attempt was made to answer this question through analyzing the records of the 1,537 pupils who were graduated from the five Denver high schools in 1930. Tabulations were made showing percentage distributions by subjects, for boys and girls separately, for each of the four quarters of the class based on scholarship. Those in the top quarter are referred to in this discussion as being in rank 1; those in the next to the top quarter in rank 2; and so on.

Percentage distribution by subject groups.—The percentage distributions among the subject groups of the work completed in grades 9 to 12 by boys and girls in the four scholarship ranks of the Denver high schools are shown in Table 92.

TABLE 92.—Percentage distributions among the subject groups of the work completed in grades 9 to 12 by boys and girls who were graduated from the Denver high schools in 1930. (Classification according to scholarship rank)

Scholarship rank	Subject groups					
	English	Social studies	Foreign language	Mathematics	Science	Non-academic
1	2	3	4	5	6	7
Boys:						
Rank 1.....	20.6	18.7	18.3	20.5	11.5	10.4
Rank 2.....	21.3	19.9	14.7	17.4	12.1	14.6
Rank 3.....	21.0	20.4	12.9	16.5	12.0	17.2
Rank 4.....	21.8	21.3	10.8	15.4	12.5	18.2
Girls:						
Rank 1.....	21.8	18.7	18.8	12.8	10.4	18.0
Rank 2.....	22.3	19.2	16.1	11.0	9.1	22.3
Rank 3.....	22.2	19.8	14.3	10.3	9.2	24.2
Rank 4.....	22.8	20.0	12.0	8.1	8.8	28.3
All boys.....	21.2	20.3	13.7	17.1	12.1	15.6
All girls.....	22.2	19.2	15.8	11.1	9.5	22.2

According to the table English and social studies were fairly constant throughout the four scholarship ranks, although in both fields the percentages of work taken by both boys and girls increased slightly with decrease of rank. The fact that all the high schools required a considerable amount of work in both English and social studies was no doubt partly responsible for the small amount of variation in these subject fields.

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A decided relationship existed between scholarship rank and the percentage of foreign language studied. The difference in percentage of work taken in foreign languages by the boys in rank 1 and rank 4 was 7.5 per cent in favor of rank 1; for the girls, the corresponding difference between the ranks was 6.3 per cent.

The percentage of work taken in mathematics showed a similar but somewhat less marked tendency to decrease from highest to lowest rank. The superiority of rank 1 over rank 4 was 5.1 per cent for the boys and 4.7 per cent for the girls.

The boys in rank 1 took less work in science than did the boys in rank 4, but the girls in rank 1 took more work in science than did the girls in rank 4.

The data show a marked negative relationship between scholarship and percentage of nonacademic work. The percentage of work taken in the nonacademic field by the boys in rank 4 was 7.8 per cent greater than the percentage taken by the boys in rank 1; for the girls the difference was even greater and amounted to 10.3 per cent. High ability, as indicated by scholarship rank, was correlated positively with the total amount of academic work for both boys and girls who graduated from the five Denver high schools in 1930.

Sex was apparently a factor of some importance in determining the percentage distribution of work among subject groups. Little difference between the sexes in percentage of work taken in English and social studies was found, but considerable differences appeared in the other subject groups. The girls took a considerably higher percentage of their work in foreign languages and nonacademic subjects than did the boys, while the boys exceeded the girls in percentage of work taken in mathematics and science.

Percentage distribution by subjects.—The percentage distributions according to subjects, of the work completed by the four scholarship groups of the graduates of the five Denver high schools in 1930, boys and girls combined, are shown in Table 93.

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TABLE 93.—Percentage distribution by subjects of work completed in grades 9 to 12 by 1,537 graduates in the class of 1930 in the five Denver high schools (classification according to scholarship rank)

Subject group	Percentage distribution of semester hours				
	Rank 4 ¹	Rank 3	Rank 2	Rank 1	Total
English.....	22.2	21.7	21.9	21.5	21.8
Social studies.....	19.1	18.5	18.0	17.5	18.3
French.....	1.1	1.8	2.5	3.2	2.2
Spanish.....	6.0	6.3	6.6	5.6	6.1
German.....	.1	.2	.2	.3	.2
Latin.....	4.0	5.2	6.4	9.2	6.3
Mathematics.....	12.8	13.4	13.6	15.3	13.8
General science.....	.6	.4	.5	.5	.5
Biology.....	3.2	3.0	2.8	2.9	3.0
Chemistry.....	2.6	3.1	3.1	3.4	3.0
Physics.....	2.3	2.1	2.1	2.7	2.3
Other science.....	2.6	1.9	1.9	1.3	1.9
Stenography.....	1.6	2.2	2.8	2.9	2.4
Bookkeeping.....	1.3	1.5	1.4	1.3	1.4
Typing.....	2.3	2.4	2.5	2.4	2.4
Other commerce.....	4.4	3.9	2.9	1.8	3.2
Home economics.....	3.2	3.4	3.0	2.8	2.9
Industrial arts.....	4.3	3.1	2.4	1.2	2.7
Art.....	2.3	1.9	1.8	1.6	2.0
Music.....	2.4	2.4	2.2	1.9	2.2
Psychology.....	1.6	1.6	1.4	1.2	1.4

¹ Rank 4 indicates lowest 25 per cent.

Among the languages, the percentage of work taken in Spanish by the graduates in the highest fourth was slightly less than in the lower groups. In all the other languages, however, there was positive correlation between the amount of language studied and academic success. This correlation was especially marked in Latin.

High scholarship showed some tendency to be correlated positively with the study of physics and chemistry and to be correlated negatively with the study of the other sciences.

Stenography was the only subject in the commercial group which showed a positive correlation with scholarship rank. In bookkeeping and typing there seemed to be no relationship. Other commerce subjects were negatively correlated with scholarship rank. In all the miscellaneous subjects, the groups that showed less success in scholarship took a somewhat higher percentage of semester hours than did the higher ability groups. The difference was most noticeable in

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industrial arts; the pupils of Rank 4 took 4.3 per cent of their work in that subject, whereas only 1.2 per cent of the work of the pupils of Rank 1 was taken in it.

7. SUMMARY

1. The various high-school subjects excepting physical education were classified into the following groups: English, social studies, foreign languages, mathematics, science, and nonacademic subjects, and the percentage distributions of the work completed by high-school pupils of nine cities who graduated between 1926 and 1930, inclusive, were computed. It was found in general that the subject groups ranked in the following order in median percentage of semester hours: Nonacademic subjects, English, social studies, foreign language, mathematics, and science.

2. The differences among the various cities in percentage of work taken by the graduates in English, social studies, and mathematics were usually small. Considerable similarity in percentage of work taken in science was found, although one city showed marked variation from the median. There were large differences in the percentages of work taken by the high-school graduates of the various cities in foreign languages and the nonacademic group.

3. The high-school graduates in all nine cities held to the traditional course of study in that they took at least two-thirds of their work in the academic subjects. The proportion of academic to nonacademic work ranged from about five to one in Washington, to approximately two to one in Long Beach and Springfield.

4. Significant differences were found among five of the cities for which data were available in emphasis placed on individual subjects within the foreign language, science, and nonacademic fields.

5. In cities having specialized high schools the differences among individual high schools within the same city in percentage distributions of work completed by the graduates in 1926-1930 were more marked than the differences among cities. The differences were especially noticeable in foreign languages and the nonacademic groups.

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6. The high-school graduates in two of the three cities in 1926-1930 completed a higher percentage of work in the academic fields than was being taken in those fields at a given time by all pupils in the same high schools.

7. It was found by studying the percentage distribution of work completed by the 1930 graduates of different scholarship ranks in one city that high scholarship rank was correlated positively with amount of work in academic subjects. The relationship between high scholarship rank and the study of foreign language was particularly evident.

8. Sex appeared to be a factor of some importance in determining the percentage distribution of work among the subject groups. The girls took a larger percentage of work in foreign language and the nonacademic fields, while the boys surpassed the girls in percentage of work taken in mathematics and science.

CHAPTER XXII : WORK TAKEN IN FOREIGN LANGUAGES,
SCIENCE, AND MATHEMATICS

1. THE PROBLEM

Need for more detailed analysis.—The general facts about the percentage distribution of work taken by high-school graduates of nine cities in the various subject fields were presented in the preceding chapter. No detailed investigation, however, was made of the individual programs upon which those percentages were based. This is an important point. For instance, if a certain percentage of the work of the graduates in one city was in science, it may have been true that a few students were taking much science, or that many students were taking some science, or that large variations existed among the percentages taken in science by individual pupils. Furthermore, it may have represented much work in a single science or a smaller amount of work in each of several sciences. A similar situation exists with reference to foreign languages. Further analysis of these subject groups should, therefore, reveal interesting facts about the present high-school program of studies as it works out.

At least three years of English are required for graduation in so many high schools that marked uniformity exists in the amount of work completed in this field in all high schools studied. The courses in the social studies are organized in different ways in different schools so that the results of any analysis not based upon detailed study of the courses of the various schools would be misleading. Such a careful study of the details of courses of study was impossible in this investigation.

The fields represented.—Foreign language was studied from the standpoint of the two questions stated below. Similar questions were considered in the analysis of work taken in science.

1. What percentage of the high-school graduates in five cities in 1930 studied no foreign language, one foreign lan-

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guage, two foreign languages, three languages, four languages?

2. What foreign languages and combinations of languages were studied by the high-school graduates of five cities in 1930 and what percentage of them studied each language and each language combination?

The position of mathematics is somewhat similar to that of English in that at least two years of mathematics are usually required for high-school graduation or for college entrance and the sequence of courses is rather definitely prescribed. For this reason, the questions raised in connection with foreign language and science would not be applicable to this field. A question may well be raised, however, as to what other subject fields are studied and to what extent they are studied by pupils who show special interest in mathematics? In this study data were available to show the relationship in one city (Denver) between amount of mathematics completed and percentage distribution of work taken in all subject fields by the graduates of 1930.

1. FOREIGN LANGUAGES

Number of foreign languages studied by graduates.—The percentage distributions of the graduates according to number of foreign languages studied by a random sampling of the 1930 graduates of high schools in Washington, Denver,¹ Providence, Long Beach, and Joliet are shown in Figure 14.

The bar graph for the average of the five cities shows that a few more than one-fifth of the graduates studied no foreign language, one-half of them studied only one foreign language, one-fourth of them studied two languages besides English, and about 1 graduate in 25 studied three languages besides English. When the five cities are compared, marked differences appear. In Washington and Denver practically all graduates studied at least one foreign language; in Long Beach more than one-fourth of them and in Joliet more than one-half of them studied no foreign language; in Washington

¹ In order to avoid undue weighting of the data from Denver a sampling has been used instead of the total distribution. Since the number from each city is thus made approximately 200, the aggregative average may be used without introducing any appreciable error.

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more than one-half studied two or three foreign languages; in Providence about one-sixth studied three.

The languages and combinations of languages studied.—The languages studied by the high-school graduates included in Table 94 were Latin, French, Spanish, Italian, German, and

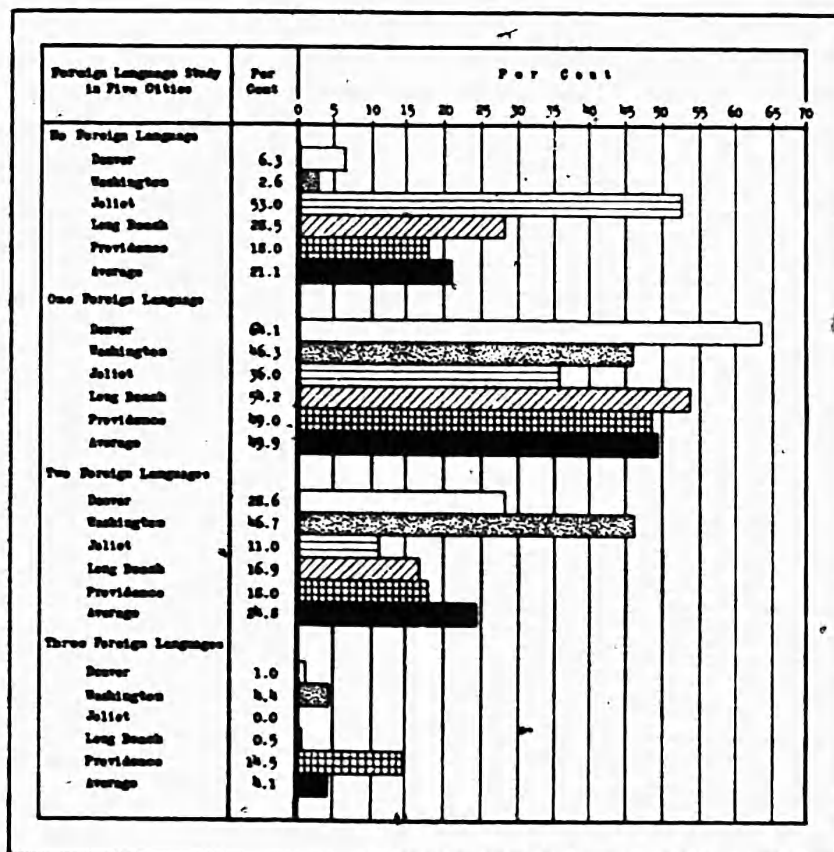


FIGURE 14.—Percentages of graduates in five cities in 1930 who studied no foreign language, one foreign language, two foreign languages, or three foreign languages in grades 9 to 12

Greek. Italian and Greek were found only in Providence. German was studied in all the cities, but only by a few graduates. Greek was taken only in combination with Latin and French. All the other languages were studied alone as well as in combination.

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TABLE 94.—Percentage distribution of foreign-language patterns completed in grades 9 to 12 by high-school graduates of 1930 in five cities

Foreign-language patterns	Percentage distribution					
	Denver	Washington	Joliet	Long Beach	Providence	Average
1	2	3	4	5	6	7
No foreign language.....	6.3	2.6	53.0	28.5	18.0	21.1
Latin alone.....	25.7	5.7	15.5	8.0	.....	10.9
French alone.....	6.3	27.1	5.0	6.0	34.5	16.0
Spanish alone.....	31.6	12.5	10.5	40.0	6.5	20.3
Italian alone.....	.....	.....	.....	.....	6.0	1.2
German alone.....	.5	.....	5.0	.2	2.0	1.5
Total—1 language.....	64.1	46.3	36.0	54.2	49.0	49.9
Latin and French.....	8.7	22.7	7.0	5.0	13.0	11.6
Latin and Spanish.....	16.5	14.9	2.5	8.0	.....	8.6
French and Spanish.....	2.4	3.1	.....	3.0	1.5	2.0
Other combinations of 2 languages.....	1.0	6.0	1.5	.9	3.5	2.6
Total—2 languages.....	28.6	46.7	11.0	16.9	18.0	24.8
Latin, French, and German.....	.1	1.3	.....	.....	7.0	1.8
Latin, French, and Spanish.....	.7	2.2	.....	.5	2.5	1.1
Latin, Greek, and French.....	.....	.....	.....	.....	4.5	.9
Latin, German, and Spanish.....	.1	.9	.....	.....	.....	.2
Latin, French, and Italian.....	.....	.....	.....	.....	.5	.1
Total—3 languages.....	1.0	4.4	.....	.5	14.5	4.1
Latin, Greek, French, and Spanish.....	.....	.....	.....	.....	.5	.1

Of the graduates who studied only one language, the largest percentage on the average chose Spanish, the next largest French, and the third largest Latin. Decided variations were found among the cities in percentages studying each language. Spanish was first in Denver and Long Beach; French was first in Providence and Washington; Latin held first rank in Joliet.

In the 2-language group, the largest percentage of graduates studied Latin and French and the second largest percentage studied Latin and Spanish. Only a small percentage of pupils took French and Spanish. The Latin-Spanish combination was first in Denver and Long Beach, while Latin-French was first in Washington, Providence, and Joliet.

Providence was the only city in which a considerable percentage of the pupils studied three languages. Of the 3-language combinations, Latin-French-German held first rank, Latin-French-Spanish was second, and Latin-French-Greek was third. One girl who studied four languages took

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95 semester hours or nine and one-half units in French, Spanish, Greek, and Latin.

3. SCIENCE

Number of sciences studied by graduates.—The percentage distributions of the graduates according to the number of

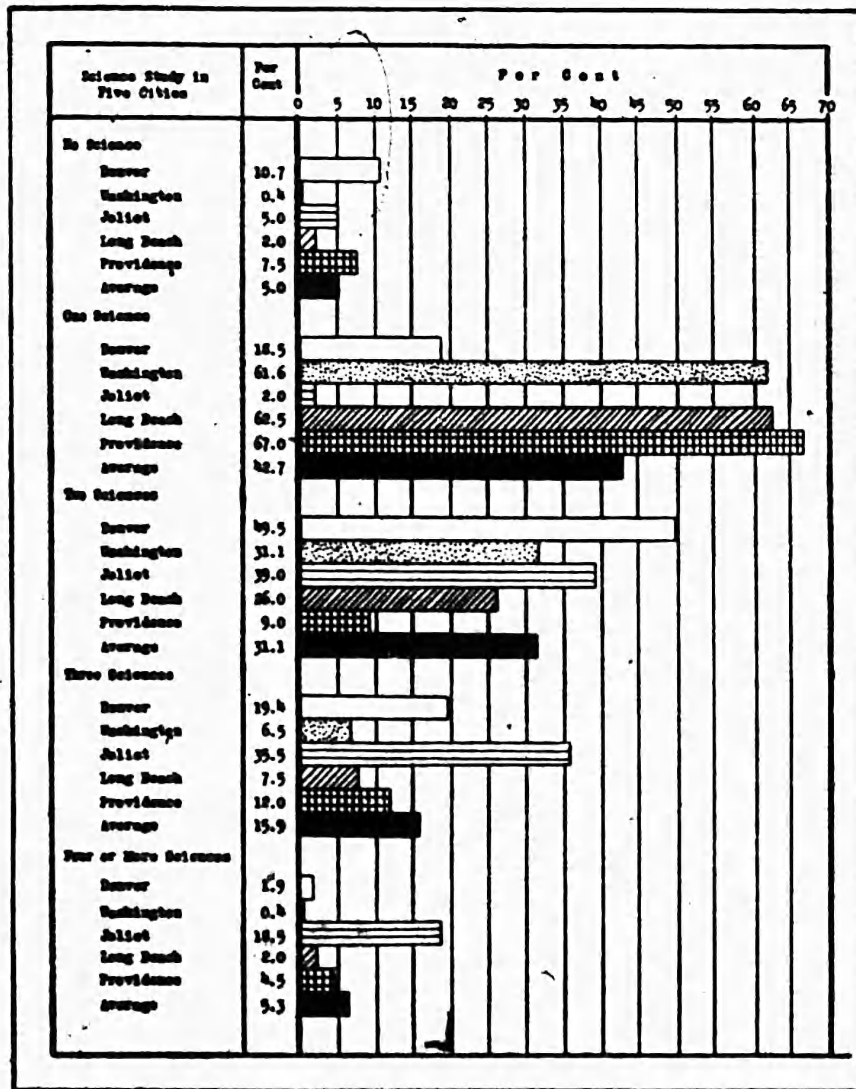


FIGURE 15.—Percentages of graduates in five cities in 1930 who studied no science, one science, two sciences, three sciences, or four or more sciences in grades 9 to 12

sciences studied by a random sampling of the 1930 high-school graduates of Denver, Washington, Providence, Joliet, and Long Beach are shown in Figure 15.

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The bar graphs for the average of the five cities show that only 1 in 20 of the graduates studied no science, more than two-fifths of them studied only one science, nearly one-third studied two sciences, and more than one-fifth studied three or more sciences.

When the five cities are compared, marked differences appear. In Washington, Long Beach, and Providence more than three-fifths of the graduates studied only one science; in Denver one-half of them studied two sciences and another fifth studied three or more sciences; in Joliet about two-fifths studied two sciences and more than half studied three or more sciences.

The sciences and combinations of sciences studied.—The sciences studied by the graduates of the five cities and the various combinations of sciences taken by them are shown in Table 95.

Marked differences among the cities in the percentage of high-school graduates who studied only one science are shown by Table 95. General science alone was studied by two-thirds of the Providence students. No other science was studied alone by the graduates of the Providence high schools. General science alone was studied by only a very small percentage of the graduates of the other cities.

Biology alone held first rank in Washington, where it was the only subject studied in the science field by 42.4 per cent of the graduates, and in Long Beach, where it was the only science studied by 39.5 per cent of the graduates.

When the graduates of the five cities who studied only one science were considered together, it was found that biology was taken by the largest percentage and that general science was taken by the next largest percentage. A very small percentage took physics, chemistry, or any other science alone.

Ten 2-science combinations and ten 3-science combinations are shown in Table 95. As a result, the percentage in the average column for any single combination is small, the largest being 5.9 per cent for general science and biology. This science combination held first rank in Washington and Long Beach, and stood fairly high in the programs of the Joliet graduates.

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TABLE 95.—Percentage distribution of science patterns completed in grades 9 to 12 by high-school graduates in the class of 1950 in five cities

Science patterns	Percentage distribution					
	Denver	Washington	Joliet	Long Beach	Providence	Average
1	2	3	4	5	6	7
No science.....	10.7	0.4	5.0	2.0	7.5	5.0
General science alone.....	1.0			2.0	67.0	13.5
Biology alone.....	8.3	42.4		39.5		18.6
Chemistry alone.....	1.4	13.5		3.5		4.0
Physics alone.....	3.4	5.7	1.0	5.5		3.2
Other science alone.....	4.4		1.0	12.0		3.4
Total—1 science.....	18.5	61.6	2.0	62.5	67.0	42.7
General science and biology.....	1.4	9.2	8.0	9.0	1.5	5.9
General science and chemistry.....	.5	3.9		1.5	1.0	1.5
General science and physics.....	.5	4.8	3.0	2.0	2.0	2.5
General science and other.....	1.0		1.5	.5	4.0	1.4
Biology and chemistry.....	13.6	4.4		2.5		4.2
Biology and physics.....	3.9	.9		4.5		1.8
Biology and other.....	9.2		11.5	3.0	.5	4.7
Chemistry and physics.....	14.6	7.9		2.5		5.1
Chemistry and other.....	1.9			.5		.5
Physics and other.....	2.9		15.0			3.5
Total—2 sciences.....	49.5	31.1	39.0	26.0	9.0	31.1
General science, biology, chemistry.....	1.0	1.3			1.0	0.7
General science, biology, physics.....	.5	.8	4.5	2.0	1.0	1.7
General science, biology, other.....	.5		1.0	1.5	2.0	1.0
General science, chemistry, physics.....	1.0	2.2	4.5	.5	6.5	2.9
General science, chemistry, other.....					1.0	1.5
General science, physics, other.....	.5		3.5			1.5
Biology, chemistry, physics.....	1.4	2.2	.5	3.0	.5	.8
Biology, chemistry, other.....	6.9			.5		3.1
Biology, physics, other.....	1.9		11.0			2.5
Chemistry, physics, other.....	6.2		10.5			.2
Total—3 sciences.....	19.4	6.3	35.5	7.5	12.0	15.9
Four sciences.....	1.9	.4	15.5	2.0	4.9	4.6
Five sciences.....			3.0		.5	.7

The chemistry and physics combination was second in rank among the 2-science combinations; it held first place in Denver where it accounted for 14.6 per cent of the science patterns. Biology and other science was third and biology and chemistry was fourth among the 2-science combinations.

Among the 3-science combinations, only two appeared as often as in 10 per cent of the cases in a single city. These were (1) biology, physics, and other science, and (2) chemistry, physics, and other science, both in Joliet. The only 3-science combinations studied by some graduates in each of the five cities were (1) general science, chemistry, and physics,

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and (2) biology, chemistry, and physics. The various 4-science and 5-science combinations were studied by such small percentages of the graduates that they are not listed in this report.

4. MATHEMATICS

Relationship between study of mathematics and study of other subject fields.—The percentage distribution of high-school work, arranged according to the amount of mathematics completed, was computed for 1,533 pupils who were graduated from the five Denver high schools in 1930. These data are shown in Table 96.

TABLE 96.—Percentage distribution of work completed in grades 9 to 12 by 1,533 Denver high-school graduates of June, 1930. (Classification according to amount of mathematics completed)

Semester hours of mathematics	Number of graduates	Percentage distribution by subject groups					
		English	Social studies	Foreign language	Mathematics	Science	Nonacademic
1	2	3	4	5	6	7	8
0 or 5.....	104	22.1	18.8	11.3	0.2	6.3	41.3
10 or 15.....	195	22.1	18.7	11.3	6.3	7.6	34.1
20 or 25.....	634	22.7	18.1	15.5	12.2	10.7	30.9
30 or 35.....	413	21.3	18.4	15.5	18.4	12.2	14.1
40 or 45.....	187	19.7	17.8	16.5	23.8	12.6	9.7

The amount of mathematics studied by the Denver graduates had little relationship to the percentage of work taken by them in English and social studies. A slight tendency toward a decrease in these fields with an increase in the amount of mathematics was found, but the relationship was of little or no significance. Some relationship is to be expected, since the number of semester hours a pupil ordinarily carries each semester is fixed and more work in one field will result in less work in some other field.

The pupils who studied more mathematics took a larger percentage of work in foreign language than did the pupils who studied less mathematics. Unquestionably, there is a decided tendency for amount of study in these two widely different fields to be positively correlated. This may be due, in part, to the fact that foreign language and mathe-

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mathematics form the most conservative part of the program of studies and, consequently, those who wish to take the major part of their work in the traditional, academic high-school subjects naturally fill their programs with many semester hours in both fields. College entrance requirements also tend to cause correlation between the amounts of work taken in mathematics and foreign language. Students who are preparing for certain colleges must take several courses in both fields in order to be admitted.

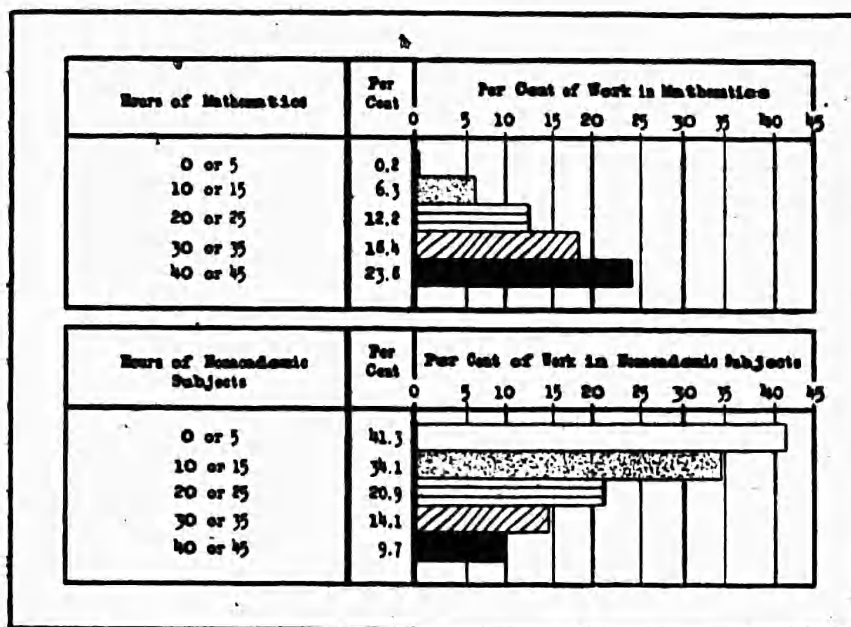


FIGURE 16.—Percentages of work taken in mathematics and in the nonacademic subjects by graduates who took different amounts of mathematics in high school

A tendency for the pupils who took the more mathematics to take the more science was also discovered. This finding is one that would naturally be anticipated as there is an obvious functional relationship between these two fields.

The percentage of work taken in mathematics and in the nonacademic field by the graduates who studied different amounts of mathematics is shown in Figure 16. The percentage of semester hours taken in nonacademic subjects by the high-school graduates fell off very decidedly with an increase in amount of mathematics studied. The percentage of nonacademic work taken by the pupils who earned credit

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in 40 or 45 hours of mathematics was less than one-fourth of the percentage taken by those who had only 0 or 5 hours of mathematics. Without question, the pupils who took more mathematics did so mainly at the expense of the non-academic subjects rather than by taking less work in the other academic fields. It is probable that the negative relationship between the study of mathematics and the study of nonacademic subjects results from the fact that most pupils who take a large amount of work in the nonacademic field are preparing neither for college entrance nor for advanced study in professional or technical fields, and, therefore, need no work in mathematics beyond the minimum requirements for high-school graduation.

5. SUMMARY

1. ~~The~~ fourths of the graduates in five cities studied one or two foreign languages. More than one-fifth of them studied no foreign language and about 1 in 25 studied three or more foreign languages.

2. The differences among the cities in number of foreign languages studied by the high-school graduates were large. In Joliet, more than half the graduates took no foreign language; in Washington, on the other hand, more than half the graduates studied two or three foreign languages; in Providence about one-sixth of the graduates studied three foreign languages.

3. The graduates from high schools in five cities in 1930 studied Latin, French, Spanish, Italian, German, and Greek. Among the graduates who studied only one language, Spanish was first, French was second, and Latin was third. The largest percentage of pupils who studied two languages took Latin and French.

4. Ninety-five per cent of the graduates in five cities studied some science in high school. In all the cities except Joliet from two-thirds to nine-tenths of the graduates had studied one or two sciences. In Joliet more than half the graduates studied three or more sciences.

5. Of the graduates who studied only one science, the largest percentage took biology and the next largest per-

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centage studied general science. In the 2-science group, general science and biology held first rank and chemistry and physics was second in rank. The only 3-science combinations studied by some graduates in each of the five cities were (1) general science, chemistry, and physics, and (2) biology, chemistry, and physics.

6. The amount of mathematics studied by Denver graduates has very little relationship to the percentage of work taken in English and social studies. It was positively correlated with the percentage of work taken in foreign language and science and was negatively correlated with the percentage of work taken in the nonacademic group.

CHAPTER XXIII : TRENDS IN WORK TAKEN BY
HIGH-SCHOOL GRADUATES, 1890 TO 1930

1. THE PROBLEM

It was shown in Chapter XXI that there are wide differences among high schools in average percentages of work taken by the graduates in various subject groups. In some high schools English and foreign languages receive the most emphasis; in other high schools the sciences and the nonacademic subjects are particularly important; in still others the work is quite evenly distributed among the various subject groups. These facts raise a number of interesting questions concerning the history of curriculum development, among which the following questions are outstanding:

1. How does the percentage distribution of work taken by the graduates of representative high schools in 1930 compare with the percentage distribution of work taken by the graduates of the same high schools at earlier periods?

2. Are the differences that now obtain among high schools in percentage distribution of work taken in various subject groups larger or smaller than the differences that existed some years ago?

An attempt will be made to answer the preceding questions by a study of the records of graduates at 10-year intervals in the following high schools: The East High School and the Manual Training High School, Denver; the Classical High School, the Commercial High School, the Hope Street High School and the Technical High School, Providence; and the Long Beach High School. The records used consist of a sampling of the records of all of the graduating classes except those of the 1930 classes of the East High School and the Manual Training High School in Denver, where the records of the whole classes are used. For the East High School of Denver and the Classical and Commercial High School of Providence, the records are studied for the classes of 1890, 1900, 1910, 1920, and 1930. For the Manual Training High

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School of Denver and the Hope Street and Technical High Schools of Providence, the records are taken for the graduating classes of 1900, 1910, 1920, and 1930. For the Long Beach High School, the records of the graduating classes of 1910, 1920, and 1930 are used.

1. GENERAL CHANGES IN PERCENTAGE DISTRIBUTION OF WORK SINCE 1890

The general changes in percentage distribution of work taken by high-school graduates since 1890 will now be presented through comparing, at 10-year intervals, the average distributions for the high schools studied. In this comparison Long Beach is omitted since there are no available data for that school before 1910. The percentages for 1890 are based on three high schools, but for the later decades six schools are included. Figure 17 shows the mean percentage distribution.

Certain definite trends are apparent in this figure. English has gained steadily since 1900; social studies in 1910 were back at approximately the same position as in 1890 after making a good gain between 1890 and 1900, but since 1910 they have gained steadily; the nonacademic subjects made a great gain between 1890 and 1900, a slight gain during the next decade, another large gain between 1910 and 1920, and they have been at a standstill during the last decade. While English, social studies, and nonacademic subjects have been gaining ground, foreign languages, mathematics, and science have, with the exception of a slight gain for science between 1900 and 1910, lost ground in every decade. The losses in the case of foreign languages have been very heavy, but the languages still outrank the social studies in these schools. Since the social studies in the larger group of schools studied in 1930 definitely outrank the languages (Fig. 17), it follows that the true status of foreign languages in 1930 is less favorable than this figure indicates.

The situation of the foreign languages is presented in greater detail in Figure 18, which makes comparisons at 10-year intervals for Classical High School of Providence, East High School of Denver, and the Long Beach High School. If present tendencies are carried to their apparent outcomes,

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the foreign languages may be expected to occupy a still smaller place in the future.

The second question that can be answered from the data relating to percentage distribution at 10-year intervals is

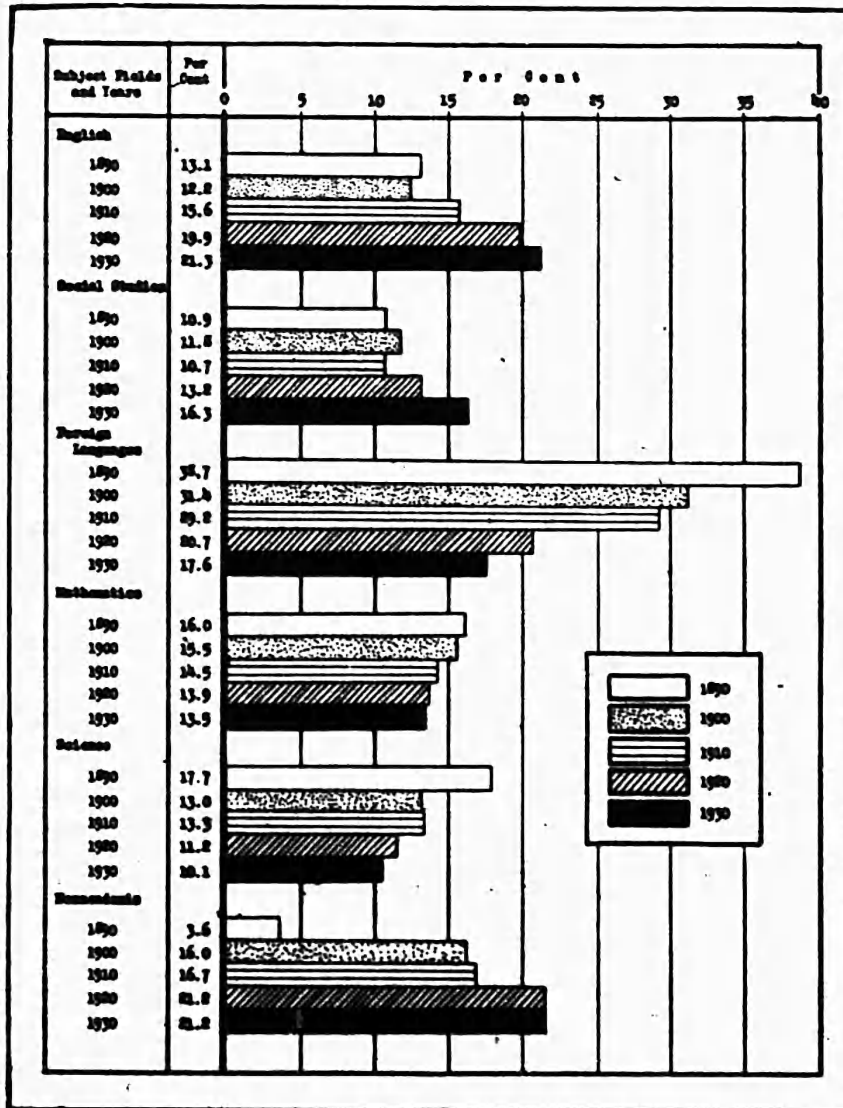


FIGURE 17.—Mean percentage distributions of work taken by graduates of six high schools, 1890, 1900, 1910, 1920, 1930

this: Are these high schools more alike now than they were in 1890? Stated in other words: Are representative high schools becoming more nearly standardized? Table 97

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shows the largest differences between the percentages of work taken in each of the subject groups by the graduates of the various high schools for each decade from 1890 to 1930. From this table it is evident that high schools have been slowly but certainly becoming more nearly standardized. In 1890 the average of the greatest differences in all subjects was 26.7; this average decreased steadily until it was 18.5 in 1930. The average of the greatest differences in the five

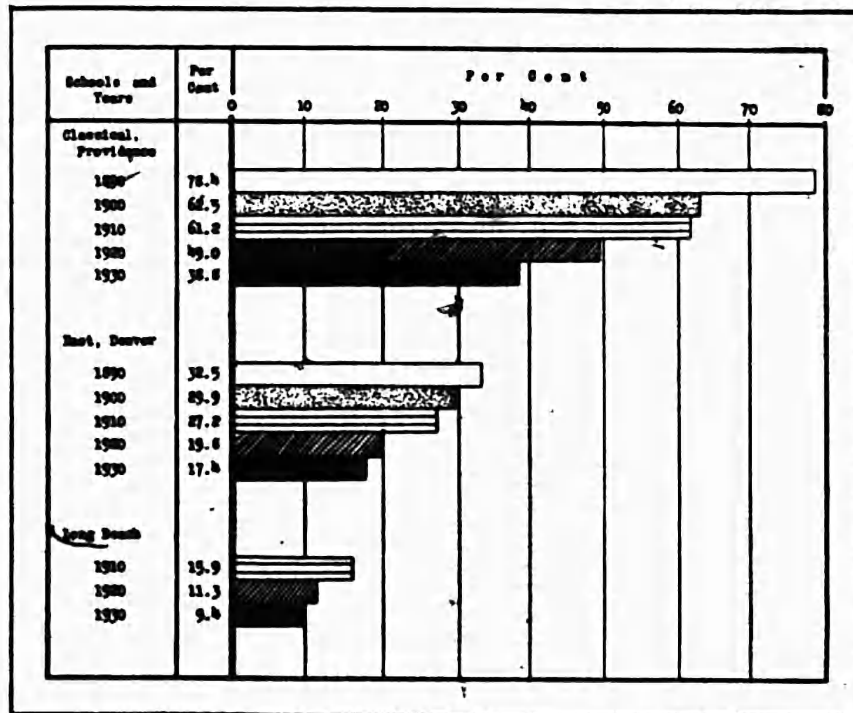


FIGURE 18.—Percentages of work in foreign languages taken at 10-year intervals by the graduates of the Classical High School of Providence, the East High School of Denver, and the Long Beach High School

academic fields in 1930 was less than half as large as in 1890. Mathematics alone among the academic fields showed an increase in the greatest difference from 1890 to 1930. On the other hand the greatest difference in the nonacademic field has increased greatly since 1890. This means that the influences making for standardization in the college-preparatory field have been effective even while the rapid development of nonacademic subjects has been taking place.

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The subject group in which the percentage distribution of the work of the graduates showed the greatest average variation during the entire period was foreign language; the least variation among the schools occurred in mathematics.

TABLE 97.—*Greatest differences between percentages of work taken in the subject fields by graduates of seven high schools in 1890, 1900, 1910, 1920, and 1930*

Subject field	1890	1900	1910	1920	1930	Average
1	2	3	4	5	6	7
English.....	29.0	9.0	9.6	17.1	11.8	15.3
Social studies.....	9.8	20.2	13.6	7.4	7.0	11.6
Foreign languages.....	73.2	48.5	45.1	41.1	31.3	47.8
Mathematics.....	8.8	4.5	8.7	7.0	14.2	8.6
Science.....	28.7	16.3	11.1	10.6	6.9	14.7
Average of academic.....	29.9	19.7	17.6	16.6	14.2	19.6
Nonacademic.....	10.7	34.9	32.9	34.7	39.7	30.6
Average of all.....	26.7	22.2	20.2	19.7	18.5	21.5

3. SUMMARY

1. By far the most important subject group in the early part of the period, as measured by percentage distribution of work, was foreign languages. However, a continuous and marked decrease of emphasis upon this subject field took place until, in 1930, it was surpassed by English and the nonacademic group.

2. The percentages of work taken in mathematics and in science declined steadily between 1890 and 1930, but the decline was less marked than in foreign languages.

3. English, social studies, and the nonacademic subjects gained in percentage of work taken by the graduates.

4. Wide differences occurred among the schools during the 40-year period in the percentage of work taken by the graduates in foreign language and the nonacademic field. The differences among schools in the percentage of work in mathematics, on the other hand, were comparatively slight.

5. The differences among high schools in percentage distribution of work taken by the graduates in the various academic subject groups with the exception of mathematics

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became progressively less between 1890 and 1930; the differences in the percentage of work taken in the nonacademic subjects, on the other hand, became greater during the same period.

6. The most striking facts revealed by this analysis of the four decades from 1890 to 1930 are a decided broadening of the work done in the nonacademic field, and a trend toward a program of studies that is much more nearly uniform for all schools in the academic field.

CHAPTER XXIV : WORK TAKEN BY COLLEGE GRADUATES

1. PURPOSE OF THE STUDY

This chapter reports a study of the high-school and college records of college graduates of seven colleges or universities. The purpose of the study is to report the percentage distribution of work taken by them in high school and college. The higher institutions are Vassar College, Princeton University, The University of Chicago, Denver University, George Washington University, University of Wyoming, and Stanford University. The records used consist of a random sampling of the records of the graduating classes of 1930 in liberal arts for all of the schools except Denver and Wyoming for which the entire classes were included, and of certain earlier graduating classes for Vassar, Denver University, and the University of Wyoming.

The high-school and college work of the students is divided into the following subject groups:

English.—English, public speaking, journalism.

Social studies.—History, economics, political science, sociology, international relations, anthropology.

Classical languages.—Latin and Greek.

Modern foreign languages.—French, Spanish, German, other languages.

Mathematics.—Mathematics.

Natural sciences.—Chemistry, physics, botany, zoology, biology, astronomy, geology, other sciences.

Education, psychology, philosophy.—Education, psychology, philosophy, religion.

Miscellaneous.—Physical education, commerce, art, music, home economics, industrial arts, others (nonacademic).

The study is organized to answer the following questions:

1. How has the percentage distribution of high-school work taken by college graduates in the different subject groups changed in recent years?

2. How has the percentage distribution of college work taken by college graduates in the different subject groups changed in recent years?

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3. How great are the variations among seven colleges in percentage distribution of high-school work taken by the 1930 college graduates in the various subject groups?

4. How great are the variations among seven colleges in percentage distribution of college work taken by the graduates of 1930 in the various subject groups?

5. How does the percentage distribution of work which college graduates take in the various subject groups while they are in high school compare with the percentage distribution which they take while they are in college?

2. CHANGES IN PERCENTAGE DISTRIBUTION OF HIGH-SCHOOL WORK TAKEN BY COLLEGE GRADUATES

For the Denver and Wyoming graduates, the high-school records of the graduating classes of 1914 and 1916, respectively, were available as well as those of the class of 1930. Table 98 shows the percentage distribution of the high-school work of the earlier and later classes.

TABLE 98.—Percentage distribution of high-school work taken in different subject groups by two groups of graduates of Denver University and University of Wyoming

Subject group	Denver		Wyoming	
	1914	1930	1916	1930
1	2	3	4	5
English.....	23.0	22.8	22.1	24.0
Social studies.....	14.6	15.2	20.9	18.1
Classical languages.....	20.6	11.7	14.4	10.2
Modern foreign languages.....	7.4	9.7	6.7	7.0
Mathematics.....	16.9	15.6	16.3	15.9
Natural sciences.....	14.6	13.4	14.4	12.9
Education, psychology, philosophy.....	.5	.9		1.2
Miscellaneous ¹	2.4	10.7	5.2	10.7
Number of cases.....	61	104	10	68

¹ Physical education, commerce, art, music, home economics, industrial arts (nonacademic).

In percentage distribution of work taken in high school, the graduates of each university show a gain in four subject groups and a loss in four groups. The differences are all small except the loss in each case in Latin and Greek and the gain in each case in miscellaneous or nonacademic subjects.

The changes in percentage distribution of high-school work

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taken by the college graduates show considerable similarity to the trends in the distribution of the work of the high-school graduates reported in the preceding chapter. Both groups show a decline in percentage of work taken in foreign languages, mathematics, and science, and exhibit a gain in percentage of work taken in the nonacademic subjects; the chief difference between the groups is that there was a tendency among the high-school graduates to take more work in English and social studies whereas no marked changes in these subject groups were observable for the college graduates. The trend in the work of both groups was away from the traditional subjects to the more recently developed fields.

3. CHANGES IN PERCENTAGE DISTRIBUTION OF COLLEGE WORK TAKEN BY COLLEGE GRADUATES

The college records of the Vassar graduates of 1900, the Denver graduates of 1903 and 1914, and the Wyoming graduates of 1916 were compared with those of the graduates of 1930 for each of these schools. In this study of college records no attempt has been made to determine the changes due to increases or decreases in the proportion of students majoring in the various subject groups. The percentage distribution of work in the various subject groups is shown in Table 99.

TABLE 99.—Percentage distribution of college work taken in different subject groups by various groups of graduates of Vassar College, Denver University, and the University of Wyoming

Subject group	Vassar		Denver			Wyoming	
	1900	1930	1903	1914	1930	1916	1930
1	2	3	4	5	6	7	8
English.....	18.4	16.4	14.9	22.0	17.2	14.3	14.4
Social studies.....	17.3	15.2	8.4	11.5	13.6	15.0	16.0
Classical languages.....	15.3	8.1	11.8	1.8	1.9	2.1	.5
Modern foreign languages.....	14.4	17.0	19.5	15.4	13.4	13.9	11.6
Mathematics.....	7.7	4.7	9.2	10.1	6.2	6.6	2.2
Natural sciences.....	12.4	16.8	16.9	16.5	17.0	12.7	22.2
Education, psychology, philosophy.....	6.8	9.3	17.1	20.4	24.2	18.0	17.9
Miscellaneous ¹	7.7	12.5	2.2	2.3	6.5	16.4	14.3
Number of cases.....	50	100	28	61	104	12	68

¹ Physical education, commerce, art, music, home-economics, industrial arts (nonacademic).

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For the Vassar graduates, percentage gains took place between 1900 and 1930 in four groups and losses in four groups. The losses were in Latin and Greek, social studies, English, and mathematics; the gains were in modern languages, the education-psychology-philosophy group, natural sciences, and the miscellaneous or nonacademic group. The greatest change was a loss of 7.2 per cent in Latin and Greek. The largest gain was 4.8 per cent in the miscellaneous group.

Percentage gains occurred for the Denver graduates between 1903 and 1930 in four groups; no change took place in one, and losses took place in three. The losses were in Latin and Greek, modern languages, and mathematics; the gains were in social studies, English, the education-psychology-philosophy group, and the miscellaneous or nonacademic group. No change took place in natural sciences. The largest gain amounting to 5.2 per cent was in social studies. The greatest change was a loss of 9.9 per cent in Latin and Greek. All this loss seems to have taken place during the first part of the period, as a comparison of the percentage of work taken in Latin and Greek by the class of 1914 and the class of 1930 shows an insignificant gain of 0.1 per cent.

Between 1903 and 1914 a decided gain occurred in the percentage of work in English taken in college by the Denver graduates, and this gain was followed by a considerable loss from 1914 to 1930. Practically the entire gain in percentage of work taken in college in the miscellaneous or nonacademic group by the Denver graduates has occurred since 1914. In mathematics, a slight gain was shown in percentage of work taken during the period 1903-1914, but it was followed by a distinct loss from 1914 to 1930. In the other subject groups, the trends in the percentage of work taken by the Denver graduates were rather consistent from 1903 to 1914 and from 1914 to 1930.

When the changes in percentage of work taken by the Vassar and Denver graduates are compared, it is seen that both groups show marked losses in classical languages and mathematics and both exhibit gains in the education-psychology-philosophy group and the miscellaneous or nonacademic group. Here the agreement ends. The Vassar graduates lost

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in percentage of work taken in the social studies group and in English, whereas the Denver group gained in both; the Vassar graduates gained in modern languages, while Denver lost decidedly. In both institutions, there was a trend away from the traditional course of study; this trend was more marked at Denver than at Vassar.

So few cases were available for the Wyoming graduates in 1916 that comparisons for this school may be unreliable. The most significant changes were a decided loss in the percentage of work taken in mathematics and a large gain in the percentage taken in sciences. The loss in mathematics agrees with the trend in Vassar and Denver, but the gain in sciences is much larger than the gain in Vassar. A small drop took place in percentage of work in the miscellaneous or nonacademic group, but notwithstanding this fact, the Wyoming graduates of 1930 took more of their work in the miscellaneous group than did the graduates of Denver and Vassar.

4. VARIATIONS AMONG COLLEGES IN PERCENTAGE DISTRIBUTION OF WORK TAKEN IN HIGH SCHOOL BY THE 1930 COLLEGE GRADUATES

Comparisons were made of the percentage distributions of work taken in high school by the graduates in the different subject groups in all seven higher institutions listed at the opening of the chapter. The percentages are shown in Table 100.

TABLE 100.—Percentage distribution of work taken in high school by the 1930 graduates of seven higher institutions

Subject group	Vassar	Princeton	Chicago	Denver	George Washington	Wyoming	Stanford
1	2	3	4	5	6	7	8
English.....	19.5	19.1	19.9	22.8	24.9	24.0	24.1
Social studies.....	10.0	8.5	13.1	15.2	14.9	18.1	16.4
Classical languages.....	26.7	22.9	13.7	11.7	11.7	10.2	9.9
Modern foreign languages.....	20.9	20.5	11.3	9.7	13.9	7.0	10.1
Mathematics.....	19.5	22.3	16.8	15.6	15.8	15.9	18.1
Natural sciences.....	4.2	6.7	11.1	13.4	9.1	12.9	13.4
Education, psychology, philosophy.....			.1	.9	.1	1.2	
Miscellaneous ¹.....	.2		14.0	10.7	9.6	10.7	8.0
Number of cases.....	100	100	127	104	63	68	99

¹ Physical education, commerce, art, music, home economics, industrial arts (nonacademic).

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The high-school work taken by the Vassar and Princeton students who were graduated in 1930 was exclusively academic, with foreign languages receiving special emphasis. For the Vassar graduates, the 1930 group took 46.6 per cent of their high-school work in foreign languages and 39 per cent in English and mathematics—a total of 85.6 per cent in these three fields. For the Princeton graduates, 43.4 per cent of the work was in foreign languages and 41.4 per cent in English and mathematics—a total of 84.8 per cent in the three fields. The graduates of Princeton and Vassar had a much smaller percentage of work in high school in the social studies and the natural sciences than did the graduates of the other schools. The graduates of the University of Chicago took only 25 per cent of their high-school work in foreign languages, while 14 per cent of it was in the non-academic group. The percentage of work in English was higher at the University of Chicago, George Washington University, and the three Western universities than at Vassar and Princeton, but the percentage of work in mathematics was considerably lower. The smallest percentage of high-school work in foreign languages was taken by the Wyoming graduates who had only 17.2 per cent of their work in that field.

5. VARIATIONS AMONG COLLEGES IN PERCENTAGE DISTRIBUTION OF COLLEGE WORK TAKEN BY THE 1930 GRADUATES

The records of the graduates of the seven higher institutions were compared from the standpoint of the percentage distributions of college work in the different subject groups. These distributions are shown in Table 101.

The range of percentage of college work taken by the 1930 graduates in Latin and Greek was from 0.3 per cent for George Washington University to 8.1 per cent for Vassar College. Although the Vassar and Princeton graduates took much less Latin and Greek than did the Vassar graduates of 1900 (Table 99), they still took a larger percentage of those languages than did the graduates of the other schools. Social studies were an important subject group in all the institutions, although the percentages were considerably lower for the graduates of Vassar, Denver, and Wyoming

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than for those of the other institutions. The graduates of George Washington University placed marked emphasis on social studies, English, and modern languages. The graduates of the University of Chicago and Stanford University gave considerably less attention to modern languages than was given to this field by the other graduates. In percentage of work taken, mathematics was relatively unimportant in all the higher institutions.

TABLE 101.—Percentage distribution of work taken in college by the 1930 graduates of seven higher institutions

Subject group	Vassar	Princeton	Chicago	Denver	George Washington	Wyoming	Stanford
1	2	3	4	5	6	7	8
English.....	16.4	12.4	14.0	17.2	23.2	14.4	12.6
Social studies.....	15.2	21.1	21.5	13.6	22.2	16.9	20.4
Classical languages.....	8.1	5.5	4.7	1.9	.3	.5	.5
Modern foreign languages.....	17.0	14.4	10.6	13.4	18.3	11.6	10.9
Mathematics.....	4.7	5.3	4.3	6.2	2.1	2.2	3.4
Natural sciences.....	16.9	18.9	23.7	17.0	14.6	22.2	21.7
Education, psychology, philosophy.....	9.3	8.7	13.1	24.2	13.6	17.9	6.3
Miscellaneous ¹	12.5	13.7	8.1	6.5	5.7	14.3	24.2
Number of cases.....	100	100	127	104	63	68	99

¹ Physical education, commerce, art, music, home economics, industrial arts (nonacademic).

Wide variations occurred in the amount of stress placed on the education-psychology-philosophy group by the graduates of the different schools. The range of percentages was from 6.3 per cent for the graduates of Stanford University to 24.2 per cent for the graduates of Denver University. A large percentage of work was taken in sciences in all the institutions; with the exception of the Denver graduates, the graduates of Western universities took a higher percentage of sciences than did those of the Eastern institutions.

The differences in percentage of work taken in the miscellaneous or nonacademic group were even larger than they were in the case of the education-psychology-philosophy group. The graduates of George Washington University had only 5.7 per cent of their work in the miscellaneous group, while the graduates of Stanford University had 24.2 per cent of their work in that group; 12.5 per cent of the

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work of the Vassar graduates and 13.7 per cent of the work of the Princeton graduates was in the miscellaneous group. These percentages were decidedly higher than the percentages of work that the graduates of the University of Chicago, Denver University, and George Washington University took in the miscellaneous field. This finding indicates that the traditional conservatism of certain of the Eastern schools is disappearing.

6. PERCENTAGE DISTRIBUTION OF WORK TAKEN BY COLLEGE GRADUATES IN HIGH SCHOOL COMPARED WITH PERCENTAGE DISTRIBUTION OF THEIR WORK IN COLLEGE

The percentage distribution of the work taken by the graduates of the seven schools in high school is compared with the distribution of their work in college in Tables 102, 103, and Figure 19.

TABLE 102.—Percentage distribution of work taken in high school and college by the 1930 graduates of three Eastern higher institutions

Subject group	Vassar		Princeton		George Washington	
	High school	College	High school	College	High school	College
1	2	3	4	5	6	7
English.....	19.5	16.4	19.1	12.4	24.9	23.2
Social studies.....	10.0	15.2	8.5	21.1	14.9	22.2
Classical languages.....	25.7	8.1	22.9	5.5	11.7	.3
Modern foreign languages.....	20.9	17.0	20.5	14.4	13.9	18.3
Mathematics.....	19.5	4.7	22.3	5.3	15.8	2.1
Natural sciences.....	4.2	16.8	6.7	18.9	9.1	14.6
Education, psychology, philosophy.....		9.3		8.7	.1	13.6
Miscellaneous ¹.....	.2	12.5		13.7	9.6	5.7
Number of cases.....	100	100	100	100	63	63

¹ Physical education, commerce, art, music, home economics, industrial arts (nonacademic).

The graduates of all the colleges took a smaller percentage of work in English in college than in high school. The difference between percentage of work taken in English in high school and in college was small (1.7 per cent) in the case of George Washington University, but it was quite large (11.5 per cent) in the case of Stanford. The median percentage taken in college was 8.4 per cent less than the median percentage taken in high school.

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TABLE 103.—Percentage distribution of work taken in high school and college by the 1930 graduates of four Western higher institutions

Subject group	Chicago		Denver		Wyoming		Stanford	
	High school	College	High school	College	High school	College	High school	College
1	2	3	4	5	6	7	8	9
English.....	19.9	14.0	22.8	17.2	24.0	14.4	24.1	12.6
Social studies.....	13.1	21.5	15.2	13.6	18.1	16.9	16.4	20.4
Classical languages.....	13.7	4.7	11.7	1.9	10.2	5	9.9	.6
Modern foreign languages.....	11.3	10.6	9.7	13.4	7.0	11.6	10.1	10.9
Mathematics.....	16.8	4.3	15.6	6.2	15.9	2.2	18.1	3.4
Natural sciences.....	11.1	23.7	13.4	17.0	12.9	22.2	13.4	21.7
Education, psychology, philosophy.....	.1	18.1	.9	24.2	1.2	17.9	-----	6.3
Miscellaneous ¹	14.0	8.1	10.7	6.6	10.7	14.3	8.0	24.2
Number of cases.....	127	127	104	104	68	68	99	99

¹ Physical education, commerce, art, music, home economics, industrial arts (nonacademic).

A distinct tendency was shown in the work of the graduates for more work in social studies to be taken in college than in high school. The Denver and Wyoming graduates alone showed a slight drop in the percentage of work taken in social studies in college. The median percentages for the seven colleges showed a difference of 5.5 per cent in favor of the college.

In all seven colleges, the graduates of 1930 took a much smaller percentage of their work in Latin and Greek in college than they had taken in high school. The median drop from high school to college was 9.8 per cent. The falling off in percentage of work in Latin and Greek was most marked at Vassar and Princeton.

In general, the graduates of 1930 took a little more work in modern languages in college than they took in high school. The graduates of five of the colleges showed a gain in this respect and two showed a loss. The difference between median percentages for high school and for college was 2.1 per cent. This small gain in work taken in modern languages in college is in decided contrast to the large loss in work taken in Latin and Greek.

The largest drop from high school to college in percentage of work taken in the various fields was in mathematics. The

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graduates of all of the colleges took a much smaller percentage of their work in mathematics in college than in high school. The median percentage for college was only about one-fourth as large as the median percentage for high school. The difference was 12.5 per cent.

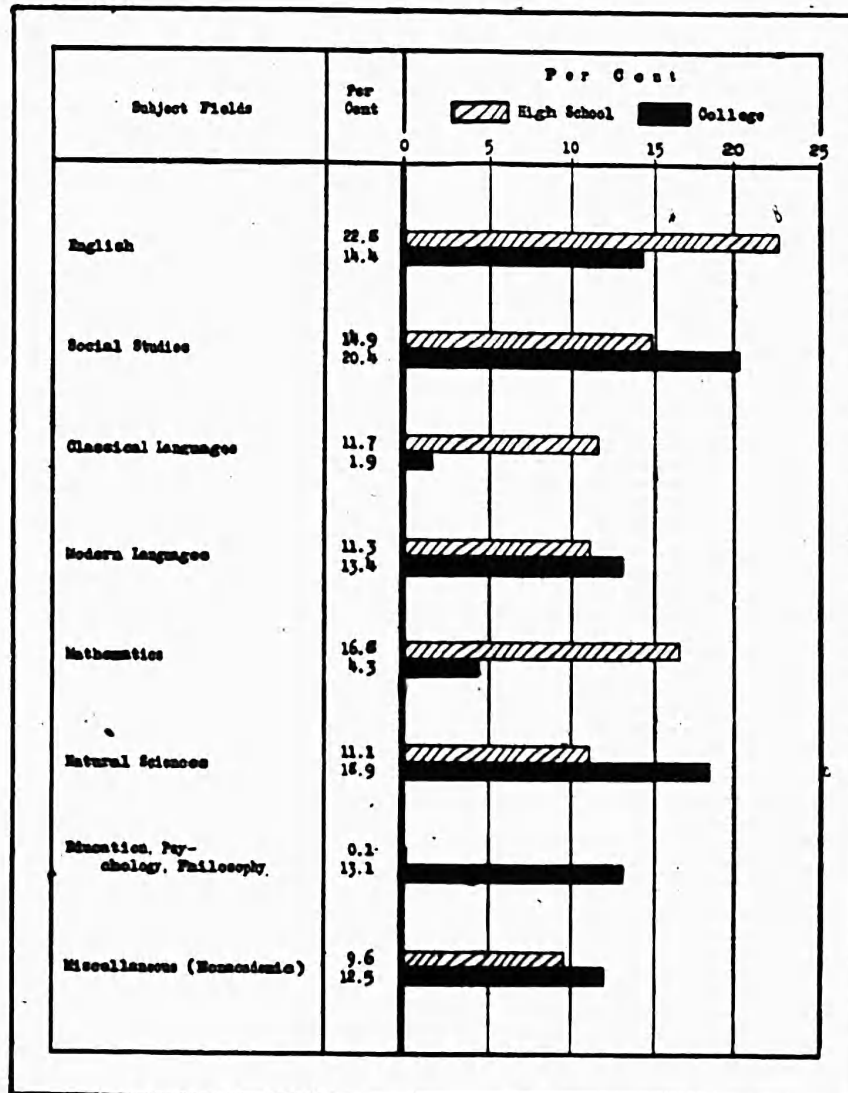


FIGURE 19.—Median percentage distribution of work taken in high school and college by the 1930 graduates of seven higher institutions

In the education-psychology-philosophy group, a much larger percentage of work was taken in college than in high school by the graduates of all of the colleges. The difference

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in median percentages was 13. This difference is not at all surprising, as few high schools offer any considerable amount of work in this group and some colleges do not accept it for college entrance.

The graduates of all the higher institutions took a larger percentage of work in sciences in college than in high school. The difference was small (3.6 per cent) in the case of Denver, but quite large (more than 12 per cent) in the case of Vassar, Princeton, and Chicago. The median percentage for college was 7.8 per cent greater than the median percentage for high school.

When the differences between the percentages of work taken in high school and in college in the miscellaneous or nonacademic group are compared for the individual institutions, it is seen that the tendencies are widely divergent. Three institutions show a smaller percentage of nonacademic work in college and four of them show a larger percentage. The greatest difference is between Chicago and Stanford. The graduates of Chicago took 5.9 per cent more work in the nonacademic group in high school than in college; the graduates of Stanford, on the other hand, took 16.2 per cent more work in the nonacademic group in college than in high school. A comparison of median percentages for the graduates of the seven colleges shows a gain of 2.9 per cent from high school to college.

Probably the most significant general features revealed by the tables are that a large falling off took place in the percentage of work taken in college in Latin and Greek, English, and mathematics as compared with the percentage taken in high school, and that decided gains occurred from high school to college in percentage of work taken in the education-psychology-philosophy group and in the sciences.

7. SUMMARY

1. An analysis of the distribution of work taken in high school by the graduates of two universities in the class of 1930 and classes about 15 years earlier indicates a trend away from the concentration of high-school credits submitted for entrance to college in the fields of Latin and Greek, mathematics, and science, and a tendency toward the pursuit of a

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more varied course of study. The increased amount of work in the nonacademic group is especially marked.

2. During the past 30 years a marked loss took place in the percentage of college work taken by the graduates of Vassar College and Denver University in Latin and Greek and mathematics, and a considerable gain took place in the percentage of work in the education-psychology-philosophy group and the miscellaneous or nonacademic group. The graduates of Wyoming University showed a similar drop from 1916 to 1930 in percentage of work in classical languages and mathematics; the most significant gain in this university was in sciences.

3. In 1930 the distribution of the high-school work of the graduates of Vassar and Princeton was in decided contrast to the distribution of the high-school work of the graduates of the five other schools. The high-school work of the Vassar and Princeton graduates was exclusively academic, with foreign languages receiving special emphasis; the graduates of the other schools, on the other hand, had a much smaller percentage of their high-school work in foreign languages and mathematics and a much larger percentage in sciences and the nonacademic subjects.

4. The percentage distributions of college work taken by the various groups of graduates of 1930 show wide variations. In general, however, the graduates had a relatively small percentage of college work in Latin and Greek and mathematics and a relatively large percentage in the social studies and sciences. The differences among the graduates of the various schools in percentages of work taken were especially marked in the education-psychology-philosophy group and in the miscellaneous or nonacademic group.

5. In general, the college graduates of 1930 took a much smaller percentage of work in Latin and Greek, English, and mathematics in college than in high school and a decidedly larger percentage of work in sciences and the education-psychology-philosophy group in college than in high school.

CHAPTER XXV: SUMMARY AND CONCLUSIONS
OF DIVISION III

The following conclusions seem to be justified by the findings of this study:

1. Recent high-school graduates, in general, have taken much more academic than nonacademic work in grades 9 to 12. For the schools studied, the proportion of academic to nonacademic work ranged from about 2 to 1 to approximately 5 to 1. Nevertheless, more work was taken by high-school graduates in the nonacademic field than in any single academic field.

2. Among the academic subject groups, the largest percentage of work was taken in English and the smallest percentage of work in science. This may be due to the fact that in these high schools a large amount of English and a small amount of science were required for graduation.

3. Differences of considerable size existed among cities and among specialized high schools within the same city in the percentage distributions of work completed by the graduates. These differences were especially noticeable in foreign languages and the nonacademic field.

4. High-school graduates completed a larger percentage of work in academic fields in grades 9 to 12 than was being taken at a given time by the total membership of the same high schools. This was to be expected because of the fact that pupils preparing for high-school graduation were required to take work in certain academic fields in order to qualify for a diploma.

5. High scholarship in high school was correlated positively with academic study. The correlation was highest in the case of foreign languages. This is perhaps traceable in part to the fact that a large proportion of the best students expected to attend college and consequently took a large proportion of their work in foreign languages and other academic fields in order to meet college entrance requirements.

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6. Girls tended to take a larger percentage of work in foreign languages and the nonacademic subjects than boys, while boys surpassed girls in percentage of work taken in mathematics and science.

7. Three-fourths of the high-school graduates studied one or two foreign languages in high school. Large differences, however, were found among cities in this respect. In one city more than half the graduates did not take any foreign language, while in others the majority of the graduates took two or more foreign languages. Nearly all of the foreign-language study of high-school graduates in grades 9 to 12 was in Latin, French, and Spanish.

8. In nearly all these high schools the great majority of the graduates studied one or two sciences. Biology was studied by the largest proportion of pupils who took only one science; general science and biology were studied by the largest proportion of those who took two sciences.

9. The amount of mathematics studied in high school by high-school graduates was positively correlated with the amounts of foreign languages and sciences and negatively correlated with the amount of work in the nonacademic field. This may be due to the fact that pupils who were preparing for college found it necessary to take work in all three of these so-called elective academic fields in order to meet the requirements set up by the colleges. The nonacademic field was largely neglected by such pupils because colleges do not require work in it, and in some cases colleges refuse to allow entrance credit for nonacademic work.

10. A study of the distribution of high-school work taken by the graduates of a number of high schools in 1890, 1900, 1910, 1920, and 1930 shows that the academic subjects dominated the program of studies throughout the period from 1890 to 1930, although specialized schools showed a tendency to break away from traditional courses.

11. In the early part of the period high-school graduates took much more work in foreign languages than in any other subject group. But a continuous decline in amount of work taken in this subject field occurred, until, in 1930, it was surpassed by English and the nonacademic group. A smaller

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loss took place between 1890 and 1930 in the percentage of work taken in mathematics and science. It is probable that the losses in these fields took place in large measure because of changing college entrance requirements. Few colleges now require entrants to present as many credits in foreign languages, mathematics, or sciences as they required 30 or 40 years ago.

12. English, social studies, and the nonacademic subjects gained in percentage of work taken by the graduates between 1890 and 1930.

13. A decided broadening of the program of studies occurred between 1890 and 1930, and at the same time the differences among high schools in percentage distribution of work taken by the graduates became progressively less. If the trend continues it is probable that a marked uniformity in the work taken in the high schools of the country will obtain within a few years.

14. An analysis of the percentage distribution of work taken in high school by college graduates reveals a modern trend away from the concentration of high-school credits formerly submitted for entrance to college in the fields of Latin and Greek, mathematics, and sciences. On the other hand, a marked increase in the percentage of nonacademic work submitted for college entrance has occurred. Notwithstanding this trend, the high-school work which had been submitted for entrance to certain Eastern higher institutions by the 1930 graduates of those institutions was still exclusively academic with foreign languages receiving special emphasis.

15. Classes graduating from college in 1930 took less work in foreign languages and mathematics in college and took more work in science, social studies, and the nonacademic field than was true of classes graduating a number of years earlier. The trend away from the study of the classical languages and mathematics was as marked in a conservative Eastern college as it was in two Western universities.

16. The graduates of higher institutions in 1930 showed a loss from high school to college in percentage of work taken in classical languages, English, and mathematics, and a gain

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from high school to college in percentage of work taken in sciences and a group of subjects consisting of education, psychology, philosophy, and religion. Smaller gains occurred in the social studies, modern foreign languages, and the miscellaneous or nonacademic subjects. Distinct losses took place in college in some of the subject fields studied most extensively in high school. It appears that, in general, students do not tend to continue work in college in the subject fields to which they devote most time in high school.

CHAPTER XXVI : A SUMMARY AND CONSIDERATION OF TRENDS

1. PURPOSE OF THE CHAPTER

Eleven separate studies were presented in preceding chapters. Ten of these concerned changes in programs of studies during periods varying in length from 5 to 25 years. Most of the data were drawn from identical schools. One longer study showed the proportion of work actually completed by the graduates in the major fields. In the present chapter, the second, third, and fourth sections will be devoted, respectively, to a summary of the more significant trends in junior high school programs, senior high school programs, and work completed by graduates. In the last section an attempt will be made to forecast the lines along which future revisions of secondary-school programs will proceed.

1. THE JUNIOR HIGH SCHOOL PROGRAM OF STUDIES

Trends in identical junior high schools.—Five studies are included under the junior high school section. Three of these deal with shifts occurring in programs in three groups of identical junior high schools, comprising 60, 14, and 39 schools, respectively. The first one covers a period of 10 years, the second 7 years, and the third 5 years. The first and last groups of schools are located in cities varying in size and location, and the second group is composed of 14 situations selected as outstanding. The first part of this section will summarize the trends in these schools.

Of the last two studies that concern the junior high school, one compares programs in grades 7, 8, and 9, before and after reorganization on the junior high school plan, and the other compares the programs in the three grades in unreorganized and reorganized schools. A later part of this section will show the relationship of trends indicated in the first three studies to those revealed in the last two. A series of generally

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accepted functions peculiar to junior high schools will be used as criteria for judging trends.¹

General plans of school and curriculum organization.—Trends indicate that administrators are not yet agreed on any one or two plans of organization of grades as best suited to all needs. On the whole, an increase is shown for the 6-6 and 6-3-3 plans at the expense largely of the 6-2-4 and the traditional 8-4 plans. Two other types occur less frequently in the systems studied. In one of these the junior college is included in the secondary-school organization; in the other the traditional 12 years of general education are reduced to 11.

In the plans for the administration of programs there is a decided tendency to allow the pupils at the ninth-grade level freedom in the election of courses by substituting the constants-with-variables or the combination type of program for the single and the pure multiple-curriculum types formerly in use. In grades 7 and 8, however, the tendency in recent years has been to restrict, to a greater degree than in the earliest reorganizations, the number of periods of work which the pupil may choose of his own volition.

The number of curriculums offered by the average school which opens up multiple curriculums for election shows little change, remaining at approximately four in both early and late periods. However, almost half the schools in the later period administered constants-with-variables programs that do not include the multiple-curriculum plan. A great variety of names is used to designate curriculums and no tendency toward standardization of names can be discerned. The general curriculum and, to a lesser degree, the fine arts curriculum appear to be increasing at the expense of the college-preparatory curriculum.

The trend is toward a longer classroom period—one of more than 50 minutes in the modern junior high school. This is probably due to longer periods in schools offering for the first time fields like practical arts, commerce, and physical education, as well as to a realization that extended class periods provide greater opportunities for individual help and study in school.

¹ The functions are stated in sec. 3 of ch. II of this report.

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The major subject fields offered.—Variations among individual schools are great, but three distinct trends are discernible in changes in the total offering. First, the total of all periods of work offered increased slightly in grade 9, but did not increase in grades 7 and 8. Second, a tendency is seen for the nonacademic fields to gain in number of periods of work at the expense of the academic fields. Increments in the number of periods offered in the academic fields are confined largely to the social studies, while in the nonacademic fields increments are shown for physical education, fine and practical arts, and a group of "socializing-integrative" activities, including the home room, clubs, guidance, and auditorium. These increments are more pronounced in grade 9 than in grades 7 and 8. A significant decrease occurs below the ninth grade in foreign languages and commerce. Third, an increase is shown in the number of schools offering for the first time physical education and commerce.

The major subject fields required.—A larger percentage of work was required during the later period in practically all fields in grades 7 and 8 than was required in the earlier period. In the later period English, social studies, mathematics, and physical education were required in these two grades in almost all schools; fine arts, industrial arts, and home economics were required in at least two-third of the schools; science was required in approximately half the schools; socializing-integrative activities were required in about a third of all schools. Except for a few schools requiring courses in general language and in junior business training, foreign language and commerce were not represented in the required work.

In grade 9 in the later period English was required in all schools; social science and mathematics in a bare majority; science, due to a considerable increment, in almost half the schools; fine arts and the socializing-integrative activities in approximately a third; industrial arts and home economics in approximately a sixth of all schools.

About 90 per cent of the work in grades 7 and 8 and 55 per cent of the work in grade 9 was required. The wide disparity between the percentage required in the first two grades and in the last suggests that the work of the earlier years in the junior

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high school is not well integrated with the work of the final year.

Noticeable shifts from the earlier period to the later one in emphasis upon the different fields are apparent. The most significant increments in required work are in the fields of social studies, physical education, and the socializing-integrative activities. Science shows, to a lesser degree, an increase in grades 8 and 9. The required work in the other fields has changed only slightly in grades 7 and 8. In grade 9 the trends are toward decreased emphasis on mathematics, fine arts, industrial arts, and home economics. English shows a decrease in the average number of minutes of work required but this is due for the most part to savings through the integration of minor courses into a generalized course.

Specific courses offered and required.—Two definite trends are apparent in the changes that have taken place recently in specific courses. In the first place, there have been increments in the number of general courses, in some cases of an exploratory nature, achieved through the correlation of two or more minor courses. In English, for example, a decrease is shown in the number of schools offering such courses as grammar, reading, penmanship, and spelling, and an increase occurs in courses appearing simply as "English."

In the second place, an increment is apparent in the number of new courses of an applied nature, accompanied in some cases by the abandonment of those holding a place largely through tradition. For example, more applied courses in the field of English include library, public speaking, journalism, and dramatics. Significant increments can also be discerned in courses of a more exploratory nature, such as general language, vocations, and junior business training, and of activities of a socializing-integrative nature such as clubs, guidance, home room, and assembly.

Comparison of unreorganized and reorganized schools.—(1) In schools that formerly had a traditional organization and have recently formed junior high schools, differences between unreorganized and reorganized programs tend to be even more prominent than in the trends just considered. This is true with respect to curriculum organization, emphasis on

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physical education, industrial arts, home economics, and socializing-integrative activities in all three grades; emphasis on social studies, fine arts, and commerce in grade 9; and the offering of more generalized, exploratory, and practical courses. (2) Similar differences are observable when a group of unreorganized schools is compared with a group of schools reorganized on the junior high school plan. The trends are especially noticeable in cities of less than 35,000 population.

Shifting concepts of functions.—The concept of the functions of the junior high school is evidently shifting away from the traditional college-preparatory and disciplinary aims. Trends indicative of decreased emphasis on college preparation include greater representation of the nonacademic fields, reduced emphasis on mathematics and foreign languages, and the introduction of more meaningful materials followed by the elimination of some courses that have held place largely through tradition.

There is considerable evidence of greater efforts to realize certain peculiar functions on which leaders have based their arguments for reorganization, namely, meeting individual differences, providing prevocational training, exploration, and guidance, and providing for training in social responsibility, for retention of pupils, for adolescent needs, and for economy of time. The following trends are illustrative of those that appear to result from the newer concept of functions: An increase in general curriculums at the expense of the college-preparatory group; a longer class period; a greater number of fields of work; increments in the offering of social studies, physical education, guidance, and other socializing-integrative activities; greater exposure to the fine and practical arts; more general or correlated and exploratory courses; enrichment through the introduction of new and more practical materials and the abandonment of traditional materials.

The trends do not indicate, however, that degree of integration and articulation of the work of these grades which might be anticipated if the newer concept of functions was clearly recognized by all the schools. The tendency in one group of junior high schools studied was to require more work in grades 7 and 8 and less in grade 9 during the period

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1929-1931 than had been required 10 years earlier. The result was that an average of 7.2 courses was required in the former grades and only 3.5 courses in the latter. Many programs indicate a belief that exactly the same fields required in grade 7 should make up the core curriculum in grade 8. This conception may extend to grade 9 as well, but college entrance requirements have forced a departure from such a procedure in this grade. In conformity to the modern concept of its functions, the program of the junior high school should gradually be modified into a rich and varied program. If this is to be realized increased opportunities for election, especially in grade 8 should be provided.

3. THE SENIOR HIGH SCHOOL PROGRAM OF STUDIES

Trends in identical schools.—Five studies of programs from senior or 4-year high schools were presented in Division II. In all cases, the programs were for grades 9 to 12 in identical schools. Four of the studies dealt with public high schools and one with private high schools. The four groups of public high-school programs were received from 152, 35, 15, and 39 cities, respectively, representing changes over respective periods of 16, 25, 6, and 5 years. The programs were from schools in cities of varying size and location. The group of 26 private high schools was selected because of report of significant revision in programs within the past five years. Trends in the four groups of public high schools will be presented first and will be followed by a comparison with those found in private high schools.

General plans of school and curriculum organization.—Trends in general plans of organization in the senior high school are similar to those reported for the junior high school in that they show increments in plans for the 6-3-3 and 6-6 organization of grades; increments for the constants-with-variables and the combination types of programs; and increments in the length of the class period. In contrast to the junior high school programs, however, the average number of curriculums has increased from four to five except in one group of schools chosen as outstanding where the average was approximately eight curriculums at each period. As was true in the junior high school programs, a decrease is shown

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in the proportions of college-preparatory curriculums. This decrease is accompanied by increments in the general, practical arts, and fine arts curriculums.

The total offering.—The most obvious trend in the total offering is that all subject fields show a significant increase from early to late periods. The average increase for three of the groups of schools is about 13 units per school. In the group of 35 schools whose changes of programs over a quarter century were studied, the number of different courses has increased about 500 per cent. The increments are most marked in the nonacademic fields. In the academic fields, the increments are largest for the social studies and smallest for mathematics. In the nonacademic fields, the increments are greatest for commerce, fine arts, and industrial arts. Percentages of actual enrollment in each subject field, computed in the study of 15 schools over a period of six years, show increments especially noticeable in the social studies and commerce, and large decreases for mathematics and foreign languages.

The required work.—English, social studies, and physical education are the only fields required by a majority of the schools. Less than half the schools require algebra and plane geometry. Some schools require art, music, industrial arts, home economics, and socializing-integrative activities in grade 9, but few requirements occur in grades 10 to 12 outside the fields of English, social studies, physical education, and mathematics. The average school now requires little more than half of all the work. The required work has increased by approximately half a unit per school in recent years. The major gains in required work are shown for social studies and physical education, while slight increments are found for science and music. Mathematics shows the largest loss in required work.

Specific courses offered.—The modern senior high school program, to an even greater extent than the junior high school program, shows increments in the number of new and practical courses and decreases in traditional courses. In the social studies, for example, the number of schools offering such courses as problems of democracy, social problems,

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international relations, and world history has increased and the number offering ancient, medieval and English history has fallen off. Enrichment of a similar nature obtains in English, fine arts, industrial arts, home economics, and commerce. Except for the tendency to offer botany and zoology as a correlated course in biology and for changes already noted in the ninth-grade offering, the senior high school lags far behind the junior high school in the integration of academic materials and the development of socializing-integrative activities.

Trends in individual curriculums.—In one study in which requirements and offerings were separately tabulated, a larger proportion of work was required in the college preparatory curriculum and approximately as much work was required in the commercial curriculum in the later period as in the early one. A greater requirement of mathematics and science appears in the former curriculum and of commerce in the latter, and the amount of the requirement in the social studies and physical education show an increment in both curriculums. Although the number of electives permitted each pupil is more restricted in the late period, a wider range is allowed in the choice of electives.

A comparison with trends in private schools.—Trends in private school programs incident to revision are somewhat similar to those indicated for public schools, but shifts are less prevalent. Exceptions to the trends that have been pointed out for the public schools are: The organization of grades is in almost all cases on the traditional 8-4 plan; increments are greatest for commerce, with a slight decrease for social studies and the industrial arts; the amount of work required in physical education has decreased, and the amount required in foreign language has increased slightly. Courses in religion are required of all pupils in about a third of the schools.

The shifting concepts.—The great popularization of the senior high school in recent years has been accompanied by a shift from the traditional college-preparatory and disciplinary aims to those embodied in the "cardinal principles" namely, citizenship, health, command of fundamental proc-

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esses, use of leisure time, worthy home membership, ethical character, and vocational efficiency. Analyses of programs of students show decreased emphasis on academic subjects, especially on mathematics and foreign languages, and greater emphasis on physical education, the fine arts, practical arts, commerce, and general training.

The cardinal principles have unquestionably had great influence in redirecting high-school instruction. There can be little doubt that emphasis on citizenship, health, use of leisure, worthy home membership, and vocations has contributed to the significant increments shown for the social studies, physical education, fine arts, home economics, and practical arts, including commerce.

4. WORK ACTUALLY COMPLETED BY GRADUATES

Growth of different fields.—Further evidence concerning shifts in fields of instruction was gathered through a study of the work actually completed by graduates of nine widely distributed high schools, through comparison of high-school work taken at early and late periods, and through comparison of high-school and college work taken in 1930 and of college work taken at early and late periods.

It is not surprising in view of the greater requirements shown for these fields that more work was taken by graduates in 1930 in English and social science than in the other academic fields. The other academic fields, listed in order of amount of work, were foreign language, mathematics, and science, the last field named comprising a tenth of all work taken. More than a fourth of all work was taken, however, in the nonacademic fields.

Analysis shows that the work taken in the nonacademic fields by graduates of six of the nine schools at different periods has increased during a period of 40 years, from a total of 3.6 per cent to 21.2 per cent of all work taken. English and social studies also show a marked increase during this period. These gains have been made largely at the expense of foreign languages, although mathematics and science have also lost considerably during the period. Computation of greatest differences between percentages of work taken in the subject fields at each of the 10-year periods

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indicates that different high schools are adopting a much more nearly uniform program in the academic fields with the advance in years.

Work taken in foreign languages, science, and mathematics.—The patterns of work taken in foreign languages and science in five cities were computed. Approximately a fifth of the pupils took no foreign language, a half took one language, and a fourth took two languages. Latin appeared in more combinations than any other language, but of the pupils who took only one foreign language, the largest number chose Spanish and the next largest number French. Large differences occurred among cities with respect to the amount of foreign languages taken by the graduates.

The differences among cities with respect to the amount of science taken were even greater than in foreign language. A twentieth of all pupils took no science, more than two-fifths took one, and almost a third took two. The subject most often taken was general biology, followed by general science.

The relationship between mathematics and the other fields was computed for the 1930 graduates of one city. It was found that the pupils who took more mathematics also took more foreign language and science largely at the expense of the nonacademic fields.

Differences in certain groups.—Comparisons are made of the differences among the nine cities in work taken by the graduates, of work taken in the specialized high schools, of work taken by graduates and that taken by the school as a whole, of work taken by bright and dull groups, and of work taken by boys and girls. The graduates of western schools, as a whole, took less mathematics and foreign language than did those of eastern schools. The greatest differences among schools are shown in the amount of work taken in foreign languages, which ranged from 7.4 per cent in Joilet to 19.6 per cent in Washington, and in the nonacademic fields, which ranged from 16.7 per cent in Washington to 32.6 per cent in Springfield. The high percentage in foreign language and low percentage in nonacademic fields shown for Washington pupils is accounted for in some measure by the fact that all were college-preparatory pupils.

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Wide differences are shown in the percentage distribution of work completed in classical, commercial, and technical high schools. English and social studies alone are fairly consistent in all three types of schools. Foreign language and mathematics are emphasized in the classical high school, the nonacademic fields in the commercial high school, and mathematics, science, and the nonacademic fields in the technical school.

The study indicates that graduates take more work in the academic and less in the nonacademic fields than does the school as a whole. A relationship is shown between scholarship and the amount of foreign language and mathematics taken, the best pupils taking more of these subjects. Comparisons by sex indicate that girls take more foreign language and nonacademic subjects, while boys take more mathematics and science.

Work taken by college graduates.—A comparison of the percentages of high-school work taken by graduates of two western universities in 1915 and 1930 indicates increments for the nonacademic fields and decreases for foreign language, mathematics, and science. In percentage distribution of college work taken by the graduates of the two western universities and one eastern college at early and late periods at least 14 years apart, losses are shown for classical languages and mathematics. Gains appear in the eastern school and one of the western schools for the education-psychology-philosophy field and the nonacademic fields. In the other western school a large gain is shown for natural science. Modern foreign languages lost in the western schools and gained in the eastern school, while the reverse situation was found for social studies.

Decided variations were found among eastern and western colleges in percentage distribution of high-school work taken by the college graduates. Students preparing for two conservative eastern schools took much more classical and modern foreign languages and mathematics in high school than did students preparing for western colleges. The western college students, on the other hand, took more high-school work in English, social studies, and the nonacademic fields.

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The differences among the colleges in percentage distribution of college work taken by the graduates were somewhat less marked than the differences in high-school work. Foreign languages were taken more in the eastern schools than in the western schools, while the western schools emphasized natural science to a greater degree than did the eastern schools.

A comparison of high-school and college work taken by the graduates of four western and three eastern higher institutions indicates that more work was taken in high school than in college in English, classical languages, and mathematics. On the other hand, more work was taken in college than in high school in natural science and in the education-psychology-philosophy field. Somewhat larger percentages of social studies and modern foreign language were also taken in college, but this tendency was not uniform among the graduates of all schools.

5. PROBABLE LINES OF FUTURE REVISION

Reliability of the trends as a basis of prediction.—In this final section of the chapter suggestions are made concerning the lines along which future revision of the secondary-school curriculum will probably proceed. For at least 30 years the lines of development have been essentially determined by college-entrance requirements. As these have been gradually modified the secondary school has slowly changed its program. The rapid expansion of the offering of the school has been made possible in large degree, however, by the tremendous increase in the noncollege-preparatory registration rather than by any major change in college requirements.

The indications of an impending series of revolutionary changes in the program of studies of the secondary school suggest the necessity for caution in projecting trends from the last 20 or 30 years very far into the future. In fact the continuity of development of the secondary school is even now breaking down. The significant action recently of the University of Chicago in proposing to begin college two years earlier means that an organization which has been in operation for several years in Pasadena and certain other communi-

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ties in California and elsewhere will be given further trial and development.²

This revolutionary change can be matched by other proposals which may easily prove fully as upsetting to any prophecies based on the assumption that trends found over the past three decades will continue. Learned's proposal, for example, in the Inglis lecture in 1932 that Carnegie units be abandoned would, if adopted, release the secondary school from an administrative device which has operated for many years to prevent thorough reorganization of the program of studies.

Certain major features of the new program of studies can certainly be inferred from the trends which have been discovered, but it would be easy to attach too great importance to such inferences as they are stated in this chapter.

General plans of organization.—In all probability the program of elementary education will be completed in six years, and secondary education will universally begin two years earlier than formerly. A corresponding change in the time of beginning college education is foreshadowed by several experiments carried on under the auspices of the North Central Association.³ If these experiments succeed, the new high school will end at what is now the end of the tenth grade. The program will provide for pupils who plan to continue general education in college, but it will also provide for those who look forward to technical and commercial education at the level of the new college. In the new cosmopolitan college various curriculums will be provided for those who need terminal courses of vocational nature as well as for those who are looking toward professional education.

Guidance.—A thorough program of guidance will be established in order to steer pupils adequately into curriculums suggested by their needs and into materials suited to their abilities. A development of guidance activities through regular courses is already shown in junior high school programs. Less provision of this sort is being made in the senior high schools, but the need for it is suggested by several trends,

² See Part III, Special Reorganizations, in Monograph No. 5, of the National Survey of Secondary Education.

³ The North Central Association Quarterly, Vol. VII, No. 2, September, 1932, pp. 172-184.

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among which are the following: (1) Graduates take more academic work than do the high-school pupils in general; (2) the decrease in work taken in academic fields and the increase in work in nonacademic fields is much greater in high schools established especially for technical and commercial pupils than in conventional high schools; (3) the change in the distribution of work actually taken by pupils during a 40-year period is much less than increments in courses offered in nonacademic fields would lead one to expect.

Emphasis on major fields.—The recent significant increments in the social studies, physical education, and the fine and practical arts, including commerce, have come about because of the needs of a changing social order. Continued and increasing emphasis will probably be placed on these fields in the future. The place of science in the modern world seems to demand that it be given greater recognition than in the past, but the trend in this direction is less marked than in the fields just mentioned. The sharp decline in foreign language and mathematics during recent years shows that the former extensive requirements in these subjects are undergoing marked revision. It is probable that in the near future these fields will be stressed only for pupils who have need and ability to understand them.

Integration of work.—Further integration of both academic and vocational fields of instruction in junior and senior high schools will doubtless be encouraged. Opportunity will be given pupils to explore higher materials of instruction as well as the various vocational possibilities. Tendencies noted in the junior high school to offer general courses in the academic fields through the correlation of minor courses and the introduction of work usually postponed to later grades will be further developed in order that the work from grade to grade, especially between traditional elementary and high-school grades, may be more continuous. Experiments along this line are under way in 20 selected centers under the auspices of the Progressive Education Association and the National Department of Secondary School Principals. One phase of the Pennsylvania Study financed by the Carnegie Foundation for the Advancement of Teaching is an attempt to work out

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for superior pupils a unified curriculum with continuity and interrelationship of materials as the dominant characteristics.

The constant element of the program.—Trends in the junior high school program suggest that the constants will include three years of English, social studies, mathematics, and physical education and two years of science, fine arts, and practical arts. The significant increments shown for socializing-integrative activities, as well as the aims attempted in this field, may justify the inclusion of three years of these activities as constants in the junior high school program.

In the senior or 4-year high school, trends indicate that three or four years of English, social studies, and physical education will be required. The growing importance of science would seem to justify also the requirement of general science and biology, and the realization of avocational aims might also justify the inclusion of various courses in the fine arts.

Requirements for college entrance.—The influence of college-entrance requirements on the work taken by high-school pupils has long been recognized. Recent changes in requirements for entrance to college seem to indicate growing dissatisfaction with traditional standards. Experiments now in progress seek to broaden the relationship between high-school and college education. Two of them seem to be of especial significance. The School and College Relations Committee of the Educational Records Bureau has recently recommended that the candidate for admission to college be considered one year before time of entrance and that, if accepted, he be allowed to devote the last year of high school to adjusting himself to college instruction. The Progressive Education Association, with the official cooperation of the Department of Secondary School Principals, has appointed a committee on the relation of schools and colleges which has secured the cooperation of a large number of colleges and universities for a proposal to launch a fundamental reorganization in the programs of a number of cooperating public and independent high schools in the fall of 1933 under an arrangement by which the work of such schools will be accepted for college entrance.

PART 2

PART II : REGISTRATION AND SCHEDULE MAKING

By B. LAMAR JOHNSON

CHAPTER I : PURPOSE AND METHOD OF THE STUDY¹

1. THE PURPOSE

Two among a host of problems which the high-school principal faces are (1) registering pupils and (2) arranging a schedule of classes for pupils and teachers. If he is prepared to meet these problems, his school is likely to function from the beginning of the school year. If, on the other hand, the principal has not effectively planned for the registration of pupils and for the making of the class schedule, a condition approaching chaos is likely to exist at the opening of school and may continue throughout the year.

Puckett has pointed out the importance of schedule making in relation to its influence upon pupils:

Every September hundreds of thousands of high-school pupils give up their vacation activities and start in again with their scholastic education. For many of them the first few days are of extreme importance and often determine whether or not pupils will actually get further education. If the school has been organized thoroughly and every effort is made to make these pupils feel at home and to adapt the work to them, they will probably stay in school. But if the school happens to be one in which the principal is not a leader and an organizer with a vision, these doubtful pupils may become discouraged with a constant shifting from one section to another and drop out of school, never to return. Even if they do stay in school, this shifting and unsettled condition may handicap them with a bad mental attitude towards their work. Unfortunately this drama is enacted every fall in far too large a number of our high schools. In some cases, of course, the pupil may not have the capacity to do the work of the school, but too frequently, however, it is largely a matter

¹ The consideration of registration and schedule making, although not falling strictly within the field of the program of studies, bears significant relationship to it. These relationships explain the publication of this report with the treatment of the organization and scope of the offering.

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of having everything organized efficiently at the start and of quickly getting the pupil into the type of work for which he is fitted.¹

Since the important problems of registration and of schedule making are faced by the principals of secondary schools of all types and sizes, high-school administrators should be interested in learning how other principals are meeting these problems. It is the purpose of this investigation to report registration and schedule-making practices in schools which have been recommended as having successful practices along these lines. More specifically, the purposes of the present study may be listed as follows:

1. To report regarding registration practices in selected secondary schools.
2. To present data regarding schedules and schedule making in selected secondary schools.
3. To describe the working day of pupils in schools in which schedules of different types are found.

In presenting this material special effort will be made to note and describe innovations in registration, schedules, and schedule making.

2. SOURCES OF INFORMATION USED

Early in the Survey there were sent to State commissioners of education and to city school superintendents inquiry forms asking them to list the names of schools with outstanding practices in, among other activities, registration and schedule making. On another inquiry form high-school principals were asked to indicate whether their schools have outstanding practices in registration and scheduling. To the names of schools obtained from these sources were added those of schools reported in the literature on the subject to have outstanding practices in registration and schedule making. Inquiry forms concerning the method of registration, the method of making the schedule, and characteristics of the schedule were sent to 300 of the 771 schools recommended as having outstanding practices in registra-

¹ Puckett, Roswell C. *Making a High-School Schedule of Recitations*. New York, Longmans, Green & Co., 1931, pp. 1-2.

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tion and schedule making.³ Replies were received from 179 schools located in 41 States and the District of Columbia. Approximately half of the schools from which returned inquiry forms were received are 4-year high schools. (See Table 1.) Twenty-four of the schools replying have enrollments of 100 or fewer, and 17 have more than 2,000 pupils. The intermediate enrollment groups, however, include a larger number of the schools returning the form.

TABLE 1.—Schools replying to inquiry form classified according to types and enrollment groups

Type of schools	Enrollment					
	100 or fewer	101-300	301-750	751-2,000	More than 2,000	All schools
1	2	3	4	5	6	7
Junior high school.....	2		14	22	8	41
Junior-senior high school.....	1	12	7	2	1	23
Senior high school.....	2	1	6	12	5	26
4-year high school.....	19	29	16	17	8	89
Total.....	24	42	43	53	17	179

On the basis of the information on the returned inquiry forms, 11 schools were selected to be visited. These schools, located in six States and the District of Columbia, were selected as being representative of schools with outstanding practices in registration and schedule making.⁴

During the visits to these schools interviews of considerable length were held with the principals and other persons who assisted in conducting registration and in making the schedule. Special effort was made to learn of devices found helpful in registration and making the schedule, and also to determine the advantages and disadvantages of unusual features of the schedule in these schools.

In six schools (two having periods less than 45 minutes in length and four with periods at least 55 minutes long) the

³ Inquiries were not sent to all of the schools recommended because 471 of the 771 schools had already received a number of forms relating to other aspects of the Survey and it was not felt that the principals of these schools should be burdened with additional inquiry forms.

⁴ The States in which schools were visited and the number of schools visited in each State are as follows: Pennsylvania, 3; Michigan, 2; Ohio, 2; New Jersey, 1; Wisconsin, 1; Minnesota, 1; District of Columbia, 1.

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pupils were given checking lists upon which to indicate the amount of time they spent, the day previous to the visit, in studying outside of class each subject which they were taking. The purpose of obtaining this information was to compare the characteristics of the pupils' working day in schools with long and short periods.

3. RECENT STUDIES OF REGISTRATION AND SCHEDULE MAKING

Puckett's investigation.—Two studies of recent date present data regarding present practices in registration and schedule making in secondary schools. Puckett⁵ conducted a study of registration procedure and the making of schedules in 278 schools in all sections of the country. More than four-fifths of the schools taking part in Puckett's study have preliminary registration, most of them conducting this registration for the September opening before school closes in the spring.

Puckett found that in approximately two-thirds of the schools he studied the schedule is made by one person without assistance. As would be expected, the principal makes the schedule more often than persons in any other position; the superintendent often works on the schedule, especially in small high schools. Puckett found that in slightly less than one-fifth of the schools the schedule for the previous year is used as a basis for the new schedule.

Puckett reports great variation as regards the time at which schedules are completed in the various schools: Some schools complete their schedule for the fall before the close of school in the spring; on the other hand, in some schools (particularly the smaller ones) the schedule is not completed until the first day of school in the fall.

The time at which the school day opens varies from 8 to 9 a. m. in the schools studied by Puckett, larger schools showing a tendency to begin school earlier in the morning than do small schools. The author suggests that this is probably due to the longer distances which pupils in the smaller communities have to travel in going to school. He reports that the time of closing school in the afternoon shows even greater variation, ranging from 1 to 4.15.

⁵ Puckett, Roswell O. *Making a High-School Schedule of Recitations*. New York, Longmans, Green & Co., 1931. 164 p.

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The number of periods in the school day ranges from 5 to 10 and the length of the periods from 40 to 70 minutes. Puckett found, in general, that schools with longer periods had fewer periods in the school day. Two schools have periods of different lengths in the morning and in the afternoon. The shortest lunch period reported in any school is 15 minutes; the longest is 105 minutes.

A significant feature of Puckett's report of his investigation is his description of unusual or successful practices carried on in the schools replying to his inquiry form.

Warner's investigation.—In his investigation of schedule making in the junior high school Warner⁶ received replies from 64 junior high schools. One reply was received from a school in each of the 62 cities with populations of more than 100,000 which have junior high schools, and schools in two other cities also were studied in order to give the schools taking part in the study a wider geographical distribution. A significant factor in Warner's study is that replies were received from all the schools requested to take part in the study.

Warner reports from 5 to 10 periods a day in the schools studied, the length of the period ranging from 40 to 60 minutes. The median length of periods is 50 minutes. In 53 of the 63 schools replying to the question teachers are expected to provide for a certain amount of supervised study in the content subjects. Warner concludes that the practice of supervised study undoubtedly accounts for relatively long periods found in these schools.

In the 64 junior high schools the length of the lunch period varies from 15 to 90 minutes, the median length being 35 minutes.

In 46 of the schools studied by Warner the principal makes the schedule; in 8 schools the schedule is made by the assistant principal; and in the remaining 10 schools persons in other positions have charge of making the schedule.

In assigning pupils to class sections, ability grouping is used to some extent in 53 schools; sex segregation is used in 46 schools; and curriculum segregation is reported in 31 schools.

⁶ Warner, Harold Ellsworth. *Schedule Making in the Junior High School*. Unpublished Doctor's thesis, George Washington University, Washington, D. C., 1931. 233 pp.

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In 26 of the 63 schools supplying Warner with information on this point class sections are equalized before school opens. In 14 of the remaining schools part of the class sections are equalized before school opens.

A significant fact reported by Warner is that 58 of a group of 62 schools place their school schedule in operation and hold classes on the first day of school. In commenting on this situation he states, "The above response indicates high success in at least one of the outcomes toward which expert scheduling should aim, namely, greatest promptness in getting the new schedule into operation."⁷

These brief statements concerning the studies by Puckett and Warner can not at all do justice to them. It is hoped that the comments may at least direct attention to the character and merit of the studies. The present study differs from them in certain respects, one of the differences being that it deals with practices in schools reported to be outstanding in matters pertaining to registration and schedule making.

⁷ Ibid., p. 101.

CHAPTER II : PRELIMINARY REGISTRATION

1. THE PRACTICE IN SCHOOLS OF DIFFERENT ENROLLMENTS

One of the important problems in relation to the registration of pupils is the time at which they first indicate the subjects they wish to take during the following term of school. On the inquiry form sent to schools cooperating in this investigation considerable emphasis was placed upon information regarding various practices which relate to this preliminary registration.

Most schools replying to the inquiry forms sent them conduct preliminary registration. (See Table 2.) All schools with enrollments of more than 2,000 have their pupils indicate their choice of subjects before school opens and only 2 of the 53 schools with enrollment of from 751 to 2,000 fail to have a preliminary registration. On the other hand, 10 of the 24 schools with 100 or fewer pupils do not conduct preliminary registration. Although most schools in each enrollment group have preliminary registration, these data indicate a tendency for small schools to conduct preliminary registration less frequently than do larger schools.

TABLE 2.—Numbers of schools of different enrollments holding preliminary registration before school opens in the fall

Practice	Enrollment					Total (179)
	100 or fewer (24)	101-300 (42)	301-750 (48)	751-2,000 (53)	More than 2,000 (17)	
1	2	3	4	5	6	7
Preliminary registration is held.....	* 14	35	39	51	17	156
No preliminary registration is held.....	10	7	4	2	.....	23

NOTE.—The numbers in parentheses indicate the number of schools in the various enrollment groups.

* Preliminary registration is held less frequently before the opening of the second term of the school year. In only 91

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of the 172 schools supplying data relative to this point do pupils indicate the subjects they wish to take before the opening of the second term of the school year. This situation must be due to the fact that in many schools no new schedule is prepared for the second semester. Most schools with enrollments of 750 or fewer do not have preliminary registration for the second term of the school year, but pupils in 51 of the 70 schools with enrollments of more than 750 indicate the subjects they wish to take before the opening term of the school year.

1. TIME OF PRELIMINARY REGISTRATION

A decision of importance with respect to preliminary registration is that relating to the time at which pupils should be asked to report the subjects they wish to take during the next term of school. Many principals point out the advantages of holding preliminary registration at an early date. These administrators state that if before the close of school in spring pupils select the subjects they wish to take in the fall, this information will be of value to the principal during the summer in determining the number of class sections to organize and in checking the number of teachers to employ.

The time at which preliminary registration for the fall term is held in more than half of these schools is the last week of school in June. (See Table 3.) In 20 schools, however, preliminary registration is held the week before school opens and 43 schools conduct preliminary registration from 2 to 10 weeks before school closes in June. In general, small schools do not hold preliminary registration so early as do the larger ones.

Forty-nine of the ninety-one schools having preliminary registration before the opening of the second term of the school year report that this registration takes place during the last week of the first term. Fifteen schools have their preliminary registration six or more weeks before the close of the first term.

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TABLE 3.—*Time preliminary registration for the fall term is held in schools classified according to enrollment groups*

Time	Enrollment		
	300 or fewer (49)	More than 300 (107)	Total (156)
1	2	3	4
During the week before school opens.....	13	7	20
During the last week of school in June.....	28	54	82
2 weeks before the close of school in June.....	2	7	9
3 weeks before the close of school in June.....		8	8
4 weeks before the close of school in June.....	3	9	12
5 weeks before the close of school in June.....		3	3
6 weeks before the close of school in June.....	1	10	11
7 weeks before the close of school in June.....		1	1
8 weeks before the close of school in June.....	1	4	5
9 weeks before the close of school in June.....		3	3
10 weeks before the close of school in June.....		1	1
Time of preliminary registration not given.....	1		1

NOTE.—The numbers in parentheses indicate the number of schools in the various enrollment groups which hold preliminary registration for the fall term.

3. POSITIONS OF PERSONS CONDUCTING PRELIMINARY REGISTRATION

In schools with enrollments of 300 or fewer preliminary registration is usually conducted by the principal, by the superintendent, or by the principal and superintendent working together. (See Table 4). In larger schools, however, the principal rarely conducts preliminary registration. The home-room teacher, the assistant principal, and advisers often have charge of preliminary registration in these schools. In only 3 of the 68 schools with enrollments of more than 750 do classroom teachers assist in supervising preliminary registration; on the other hand, in 35 of these 68 schools the home-room teacher takes part in supervising preliminary registration. These data reveal the fact that the home room is frequently the unit of the school's organization in which preliminary registration takes place.

4. FORMS USED IN PRELIMINARY REGISTRATION

In addition to deciding when to hold preliminary registration and who is to conduct this registration, the administrator must decide what information to get from pupils and on what forms the pupils are to report it. In most schools the pupils record the information called for in preliminary registration on cards; 41 schools use sheets of paper; 31 schools

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use small slips of paper; and in 5 schools the pupils make their preliminary registrations in descriptive booklets in which is given information about the various offerings of the schools.

TABLE 4.—Positions of persons who conduct preliminary registration in schools classified according to enrollment groups

Position	Enrollment					Total (156)
	100 or fewer (14)	101-300 (35)	301-750 (39)	751-2,000 (51)	More than 2,000 (17)	
1	2	3	4	5	6	7
Principal.....	9	16	8	4	2	38
Home-room teacher.....			3	9	4	16
Principal and home-room teacher.....		2	5	8	1	16
Principal and classroom teacher.....	1	3	5			9
Superintendent.....	3	4	1			8
Superintendent and principal.....	1	3	2			6
Principal and assistant principal.....			3	3		6
Adviser and home-room teacher.....				4	2	6
Principal, assistant principal, and home-room teacher.....			1	3	1	5
Assistant principal.....			1	4		5
Adviser or counselor.....			2	1	1	4
Principal, assistant principal, dean of girls, and classroom teacher.....				3		3
Classroom teacher.....		2				2
Principal, adviser, and classroom teacher.....		1	1			2
Principal and dean of girls.....			1	1		2
Assistant principal and home-room teacher.....				2		2
Principal and adviser.....		1		1		2
Assistant principal and adviser.....			1	1		2
Other.....		4	4	6	4	18
Position not given.....			1	1	2	4

NOTE.—The numbers in parentheses indicate the number of schools in the various enrollment groups.

Usually preliminary registration is regarded merely as a time when pupils list the subjects they wish to take during the following term of school. Study of the forms on which preliminary registration is made indicates, however, that many schools call for a wide range of information at the time of preliminary registration. A total of 41 different items are included on the forms used in the 156 schools which have preliminary registration. (See Table 5.) It was to be expected that the pupil's name and the subjects which he wishes to take are items which are found on all forms. Noteworthy, however, is the fact that none of the remaining

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39 items is called for in as many as half the schools. In 66 schools the pupils list the subjects they are now taking, and in 54 schools parents are required to sign the forms on which pupils make their preliminary registrations. In 47 schools (most of them with enrollments of more than 750) home-room teachers sign preliminary registration forms, and in 37 schools (most of them with enrollments of 300 or fewer) the principal signs the forms. The names of subjects the pupil has previously taken are required in 38 schools. It is somewhat surprising to find this item occurring more frequently in small schools than in large ones, for in the smaller school it should be easier to know each pupil and keep in touch with his record than in the larger school.

TABLE 5.—Items on preliminary registration forms in schools classified according to enrollment groups

Item	Enrollment					Total (156)
	100 or fewer (14)	101-300 (36)	301-750 (39)	751-2,000 (51)	More than 2,000 (17)	
1	2	3	4	5	6	7
Name of pupil.....	14	35	39	51	17	156
Name of subjects pupil wishes to take.....	14	35	39	51	17	156
Age of pupil.....	11	24	18	14	10	77
Name of subjects pupil is now taking.....	6	8	15	26	11	66
Signature of parent.....	3	6	16	22	7	54
Signature of home-room teacher.....	1	4	10	23	9	47
Names of subjects pupil has taken.....	6	8	10	10	4	38
Signature of principal.....	8	15	10	3	1	37
Pupil's I. Q. or other mental test data.....	2	2	5	16	6	31
Teacher's estimation as to whether pupil will pass.....	3	1	6	13	2	25
Signature of counselor.....	1	2	7	11	3	24
Pupil's address.....	1	8	6	4	1	20
Pupil's telephone number.....	1	5	4	3	1	14
Parents' name.....	1	6	2	3	1	12
Parents' occupation.....		4	3	1	1	9
School last attended.....	1	3	1	2	1	8
Subjects in which pupil has failed.....		1	3	3	2	9
Grade in school.....		1		3	2	6
Vocational plans.....		1	1			4
Home-room number.....				3		3
Credits earned.....		1	1		1	3
Signature of assistant principal.....				3		3
Hours off for outside work.....			1	1		2
Teachers pupil prefers.....				2		2
Pupil's birthplace.....	2					2
Pupil's religious preference.....	1					1
Parents' birthplace.....					1	1
Date of parents' entry into United States.....		1				1
Grades in required subjects previously taken.....				1		1
Grammar school pupil graduated from.....				1		1
Lunch hour desired.....				1		1

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TABLE 5.—Items on preliminary registration forms in schools classified according to enrollment groups—Continued

Item	Enrollment					Total (156)
	100 or fewer (14)	101-300 (35)	301-750 (39)	751-2,000 (51)	More than 2,000 (17)	
1	2	3	4	5	6	7
Name of pupil's employer.....			1			1
Graduation requirements.....					1	1
Resident or nonresident pupil.....			1			1
Locker number.....				1		1
Home-room teacher.....				1		1
Pupil's estimate as to whether he will pass.....				1		1
Date pupil entered school.....		1				1
Desire to change course.....			1			1
Pupil's plans as to returning to school in the fall.....			1			1
Pupil's choice regarding having classes begin with the first shift (8.10 a. m.) or with the second shift (8.50 a. m.).....				1		1

NOTE.—The numbers in parentheses indicate the number of schools in the various enrollment groups which conduct preliminary registration.

Thirty-one schools have mental-test data recorded on the preliminary form. These data are undoubtedly used in helping the pupil select the subjects he is to take. In 25 schools spaces are provided on the preliminary registration form for teachers to indicate whether they expect the pupil to pass in the subjects he is taking. At the Jackson (Mich.) High School, the pupils indicate at the time of preliminary registration whether they expect to pass each subject they are taking.

A number of schools call for the pupil's address and telephone number. This information is reported to be helpful during the summer if situations arise which require changes from preliminary registration. Parents' names and parental occupation are included on the preliminary registration forms of 12 and 9 schools, respectively.

A group of schools have recorded on the preliminary registration form information regarding pupils' previous achievement in school. In nine schools the pupils are requested to list the subjects in which they have failed. At West High School, Denver, Colo., space is provided for recording pupils'

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marks in required subjects which they have previously taken.

At the time of preliminary registration four schools have the pupils indicate their vocational plans. At Washington Union High School, Centerville, Calif., pupils indicate on the preliminary registration form not only their vocational plans, but also what work they are doing outside of school, and their employers' names.

Pupils in the Moline (Ill.) High School, are permitted to indicate their choices in a number of matters which will influence their individual programs in the fall. They may name the teachers they prefer for their various classes; they may select the hour at which they wish to go to lunch; they may state whether they wish to have a program which opens at 8.10 or at 8.55; and they may note the hours at which they wish to be excused to work outside of school. In arranging pupils' programs efforts are made to conform to the pupils' wishes where possible.

At the Miamisburg (Ohio) High School, pupils are asked to report whether or not they plan to return to school in the fall. Pupils in this high school are also given an opportunity to indicate on the preliminary registration form their desire to change the curriculum which they have been pursuing.

A number of schools include on their preliminary registration forms certain items of which the value seems doubtful. It is difficult, for example, to see the use to which such information as the pupil's religious preference will be put in arranging his program for the school year. On the other hand, there are included among the items seldom reported, data which might well be gathered in a larger percentage of schools. Such factors as the pupils' plans to return to school in the fall and the hours during which he must work outside of school have an important bearing on the use to be made of the data obtained at the time of preliminary registration.

1. TABULATION OF PRELIMINARY REGISTRATION DATA

If maximum use is to be made of information reported during preliminary registration, the data gathered must be summarized in a manner which will facilitate their use. Tabulations of the subjects elected in preliminary registration are

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made in 87 of the 91 schools which indicate whether or not such tabulations are made. (See Table 6.) It is quite obvious from these data that schools having preliminary registration summarize the information received from this registration and put it in such form that it can be useful in making the schedule for the following school year.

TABLE 6.—Positions of persons making tabulations of subjects elected by pupils in preliminary registration in schools classified according to enrollment groups

Position	Enrollment					Total ¹ (87)
	100 or fewer (6)	101-300 (12)	301-750 (19)	751-2,000 (36)	More than 2,000 (14)	
1	2	3	4	5	6	7
Principal.....	5	12	15	22	3	58
Clerk.....	1	5	13	22	3	44
Assistant principal.....	1		6	14	4	25
Home-room teachers.....			1	16	6	23
Counselor.....		2	2	6	1	11
Superintendent.....	2	2	2			6
Chairman of faculty schedule committee.....				2		2
Department heads.....				2		2
Teachers.....			1		1	2

¹ In a considerable number of schools persons in two or more positions are reported to work on these tabulations.

NOTE.—The numbers in parentheses indicate the number of schools in the various enrollment groups which make tabulations of preliminary registration data.

Tabulating the subjects elected by pupils is, it would seem, mere clerical work with which the principal should not be burdened. Although most principals assist in this tabulating, persons in other positions usually do the major part of this work. In the larger schools the principal has no part in tabulating these materials. In more than half of the schools clerks work on the tabulations of the data. The assistant principal and home-room teachers tabulate the subjects elected in 25 and 23 schools, respectively. At Eastern High School, Washington, D. C., each home-room teacher tabulates the subjects elected by the pupils in his home room. The faculty schedule committee collects the sheets on which are tallied the tabulations for the various home rooms. A master tabulation for the entire school is then made by combining the data on the sheets prepared by the home-room

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teachers. At this high school it is reported that the plan of having tabulations made by the home-room teachers proves very satisfactory. It is said that the division of the work of making tabulations among the home-room teachers places no great burden on any one person and expedites assembling the data obtained during the period of preliminary registration.

No school reports that pupils assist in tabulation of the subjects elected at preliminary registration. Puckett recommends the practice of having pupils tabulate the subjects elected at the time of preliminary registration. In discussing the fact that six of the schools he studied used pupil assistants in tabulating the subjects elected in preliminary registration, Puckett says:

It is somewhat surprising to find that so few schools make use of the help of the seniors who can do this work efficiently under supervision. They generally consider it a privilege to help with office work, and the training which they get from this type of work is of enough value to justify making use of them.¹

6. USE MADE OF DATA OBTAINED IN PRELIMINARY REGISTRATION

Schools cooperating in the present investigation were requested to report the uses which they make of data gathered in preliminary registration. Study of the uses reported should be of value to the principal who is considering the advisability of conducting preliminary registration in his school and also to the administrator who has preliminary registration in his school but who may wish to modify the practices in his school.

The chief use made of the data obtained is to determine the number of class sections that will be needed the following term. (See Table 7.) Reports from 55 schools indicate that preliminary registration data are valuable in making the class schedule. In 36 schools the summaries of the subjects elected by the pupils are used in deciding the number of teachers needed during the coming school year. Eleven reports mention the use of preliminary registration data in selecting the subjects to be offered and nine schools state that the data are used in determining the textbook

¹ Puckett, Roswell C. *Making a High-School Schedule of Recitations*. New York, Longmans, Green & Co., 1931. (See pp. 56-57.)

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needs of the school. Determining the number of classrooms needed and estimating the supplies needed are reported on four and three inquiry forms, respectively. Two schools use the forms made out at the time of preliminary registration in checking on the subjects elected as related to the intelligence of the various pupils.

TABLE 7.—Use made of data obtained during preliminary registration

Use	Number of schools
Determining number of class sections.....	62
Making schedule.....	55
Determining number of teachers.....	36
Determining subjects to be offered.....	11
Determining textbooks needed.....	9
Determining number of classrooms needed.....	4
Determining supplies needed.....	3
Checking on subjects pupil has selected as related to his intelligence	2

7. GUIDANCE GIVEN PUPILS IN SELECTING THEIR SUBJECTS

If pupils are to be enrolled in courses which best suit their needs and if large numbers of changes in preliminary registration are to be avoided, pupils must be given guidance in selecting the subjects they are to take. Only 32 of the selected schools taking part in this investigation do not provide guidance for members of entering classes before they select the courses they wish to take. (See Table 8.) Small schools fail to give assistance in selecting subjects more often than large schools. This may be explained by the smaller number of elective subjects in small schools. In fact, pupils in small schools often have no electives at all but must take without question the subjects assigned to them.

Not only the size of the school but also the type of school has an influence on the decision as to whether new pupils are to be given guidance in selecting their subjects. Guidance is given to pupils entering junior high school less frequently than to those who enter schools of any other type. (See Table 9.) This is probably owing to the absence of electives in the opening grade of many junior high schools. In a number of cases principals of junior high schools made notations similar to the following on the

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inquiry forms which they filled out: "No electives in the seventh grade."

TABLE 8.—Guidance given to new pupils in schools classified according to enrollment groups

Practice	Enrollment					Total (179)
	100 or fewer (24)	101-300 (42)	301-750 (43)	751-2,000 (53)	More than 2,000 (17)	
1	2	3	4	5	6	7
Guidance is given incoming pupils.....	13	36	34	39	17	138
Guidance is not given incoming pupils.....	8	6	7	12	.....	32
No report.....	3	2	2	2	.....	9

* NOTE.—The numbers in parentheses indicate the number of schools in the various enrollment groups.

TABLE 9.—Guidance given to new pupils in schools classified according to types of schools

Practice	Types of schools				Total (179)
	Junior (4)	Junior-senior (23)	Senior (26)	4-year (89)	
1	2	3	4	5	6
Guidance is given incoming pupils.....	23	19	24	72	138
Guidance is not given incoming pupils.....	16	2	2	12	32
No report.....	2	2	.....	5	9

NOTE.—The numbers in parentheses indicate the number of schools of the various types.

The schools taking part in the present investigation report nine different methods of helping new pupils select the subjects they are to take. The most used means of giving guidance to incoming pupils is to have a representative of the school give a talk to the pupils in the school which they are attending. (See Table 10.) Bulletins describing courses offered are distributed to the new pupils in 82 schools. At Appleton, Wis., there is distributed to all ninth-grade pupils in the junior high schools of the city a 60-page bulletin entitled "Futures—Your Need of the Senior High School." This bulletin, which is revised

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annually, includes information on the values of a high-school education, a description of Appleton High School and its various curriculums, and a discussion of graduation and college entrance requirements. For 3 or 4 weeks, before preliminary registration takes place, the ninth-grade social science classes in the junior high schools use "Futures" as the basis of their class work. Following the study of this bulletin the pupils who are going to enter senior high school fill in the preliminary registration forms. The principal of the Appleton High School reports that placing this bulletin in the hands of all ninth-grade pupils and having them use it as the basis for class discussion has been of great assistance in the intelligent selection of courses by members of incoming classes.

TABLE 10.—Type of guidance given incoming pupils to assist them in selecting subjects they wish to take in schools classified according to enrollment groups

Type of guidance	Enrollment					Total (138)
	100 or fewer (13)	101-300 (35)	301-750 (34)	751-2,000 (39)	More than 2,000 (17)	
1	2	3	4	5	6	7
Talk by representative of school before graduating class in junior high school or elementary school.....	3	16	25	34	12	90
Bulletin describing courses and subjects.....	3	14	21	31	13	82
Conferences between representative of school and each incoming pupil.....	12	18	18	10	6	64
Meeting of representative of school with parents.....	3	2	11	7	2	25
Conference between representative of school and individual parents.....	3	5	6	5	2	21
Guidance course given in the elementary school.....			1	2		3
Conference with counselor in schools from which pupils come.....				1	1	2
Talk to pupils by city guidance director.....					1	1
Conferences with pupils by teachers of schools from which they come.....					1	1

NOTE.—The numbers in parentheses indicate the number of schools in the various enrollment groups which report giving guidance to incoming pupils.

The methods mentioned (giving talks to pupils in the school from which they are to come and the use of bulletins) are more frequently used in large schools than in smaller schools. On the other hand, smaller schools report having

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conferences between a representative of the school and the pupils more often than do the larger schools.

In a considerable number of schools the attempt is made to secure direct contact with the parents of incoming pupils. Twenty-five schools hold meetings for the parents of entering pupils. At these meetings a representative of the school (usually the principal) discusses with the parents the various courses offered in the school and an opportunity is provided for them to confer with the principal or another member of the school staff.

A number of schools report receiving cooperation along the lines of guidance from the schools the pupils are attending. Three schools report that in a guidance course offered in the elementary schools the pupils are given assistance in selecting subjects in high school. Two schools indicate that the counselors in the schools from which the pupils come help the pupils select the subjects which they may take in their new school. The principal of Foch Junior High School, Detroit, Mich., reports that the teachers in the elementary schools assist in guiding pupils before they enter the junior high school.

The principal of the Bay View High School, Milwaukee, states that the city guidance director visits the elementary schools and holds meetings with the pupils who are to enter high school.

The principal must not only assist new pupils select the subjects they are to take but he must also provide guidance for the pupils already attending school. Only 10 schools report that they do not assist pupils attending the school select the courses they wish to study. (See Table 11.) Four of these 10 schools have enrollments of 100 or fewer, and for this reason, without doubt, offer no electives. Among 68 schools with enrollments of more than 750, only 2 indicate that they do not give guidance to their pupils prior to preliminary registration. Although a large majority of the schools in each enrollment group give guidance to their pupils in selecting the subjects they wish to take, the smaller schools give such guidance less frequently than do larger schools.

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TABLE 11.—Guidance given to pupils attending school in schools classified according to enrollment groups

Practice	Enrollment					Total (179)
	100 or fewer (24)	101-300 (42)	301-750 (43)	751-2,000 (53)	More than 2,000 (17)	
1	2	3	4	5	6	7
Guidance is given pupils attending school.	16	37	38	50	16	157
Guidance is not given pupils attending school.	4	2	2	2	1	10
No report	4	3	3	1	1	12

NOTE.—The numbers in parentheses indicate the number of schools in the various enrollment groups.

Despite the fact that junior high schools give guidance to incoming pupils less often than do schools of other types,² they give guidance to pupils already in their schools in larger proportions than do schools of other types. (See Table 12.) It seems probable that after pupils have taken the exploratory courses required in the seventh grade, the junior high schools assist them in choosing the courses they wish to take in the following years.

TABLE 12.—Guidance given to pupils attending in schools classified according to types

Practice	Types of schools				Total (179)
	Junior (41)	Junior-senior (23)	Senior (26)	4-year (89)	
1	2	3	4	5	6
Guidance is given pupils attending school.	40	20	24	73	157
Guidance is not given pupils attending school.	1	1	1	7	10
No report	1	2	1	9	12

NOTE.—The numbers in parentheses indicate the number of schools of the various types.

See Table 9.

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TABLE 13.—Types of guidance given to pupils attending in schools classified according to enrollment groups

Type	Enrollment					Total (157)
	100 or fewer (16)	101-300 (37)	301-750 (38)	751-2,000 (50)	More than 2,000 (17)	
1	2	3	4	5	6	7
Conference between staff members and pupils.....	15	34	34	41	15	139
Bulletins describing courses and subjects given to pupils.....	2	11	25	34	13	85
Home-room discussions.....	1		2	6		9
Talks by principal.....		1	3	3	1	8
Guidance class.....	1		3	3		7
Talks by home-room teachers.....				5		5
Talks by teachers of elective subjects.....				1		1
Life career club.....				1		1
Talks at assembly by successful men in various vocations.....			1			1
Conference between principal and parents.....				1		1

NOTE.—The numbers in parentheses indicate the number of schools in the various enrollment groups which report giving guidance to pupils in school.

In general, methods of advising pupils already in school are similar to those used in helping new pupils choose the subjects they wish to take. The administration of such guidance is, however, somewhat different. Conferences between pupils and staff members are most frequently used in helping pupils select the subjects they wish to take. (See Table 13.) Bulletins describing courses offered are used in more than half of the schools. Bulletins are, however, used by few small schools. A number of schools report using the home room in assisting the pupils select the subjects they wish to take: In nine schools home-room discussions are held regarding courses offered, and in five schools home-room teachers give talks to their pupils regarding the various subjects in the curriculum. Home-room discussions and talks-by home-room teachers are more often used in junior high schools than in schools of other types. (See Table 14.) Talks by the principal are reported by eight schools; and guidance classes are listed in the reports of seven schools, four of which are junior high schools. At the West Side Junior High School, Little Rock, Ark., teachers of the various elective subjects give assembly talks in which they

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discuss the courses in their departments. The Bayonne Junior High School, Bayonne, N. J., reports that pupils are assisted in choosing the subjects which they wish to take by discussions at meetings of the life career clubs to which they belong. Assembly talks by men successful in various occupations, are given from time to time at the A. J. Demarest High School, Hoboken, N. J. The principal reports that these talks give guidance to the pupils in planning the subjects they wish to take.

TABLE 14.—Types of guidance given to pupils attending in schools classified according to types

Type	Types of schools				
	Junior (40)	Junior- senior (20)	Senior (24)	4-year (73)	Total (157)
	1	2	3	4	5
Conference between staff members and pupils.....	35	19	19	66	139
Bulletins describing courses and subjects given to pupils.....	24	10	16	35	85
Home-room discussions.....	5	1	1	2	9
Talks by principal.....	3		4	1	8
Guidance class.....	4	2		1	7
Talks by home-room teachers.....	3		1	1	5
Talks by teachers of elective subjects.....	1				1
Life career club.....	1				1
Talks at assembly by successful men in various vocations.....				1	1
Conferences between principal and parents.....			1		1

NOTE.—The numbers in parentheses indicate the number of schools of the various types.

At the Williamsport (Pa.) Senior High School, an interesting combination of methods of guidance is used before preliminary registration is held. About 12 weeks before the close of the school year open house for the parents of pupils is held at the high school. A systematic program of publicity, most of which is in charge of pupils in the school's journalism class, precedes the open house so that all parents may know of the meeting. Newspaper articles, posters, hand bills, and letters are used at various times in advertising the school's open house. The early part of the evening is occupied by the meeting of regular high-school classes in their respective rooms; during the two periods of classes parents may visit the classes which their children are taking.

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Following this the parents meet in the auditorium where the school's program of studies is explained to them in some detail. Here an opportunity is given for the asking of any questions and the discussion of problems which the parents may care to raise. On the two days following this open house the principal meets with the pupils of the school, discusses the offerings with them, and distributes to them the cards upon which they will make their preliminary registration. These cards are taken home (they must be signed by the parents) and are returned on a date about two weeks after their distribution. During these two weeks the principal sets aside at least three evenings during which time he is at the high school for conferences with individual parents. The principal reports that parents take advantage of the opportunity to confer with him and that often he is occupied with these conferences from four to five hours each of the nights they are held. Working with both the pupil and the parent is said to prove most helpful in reducing the number of changes made in preliminary registration by the pupils at Williamsport High School.

CHAPTER III : FINAL REGISTRATION

1. PROCEDURES IN FINAL REGISTRATION

Not only must schools conduct preliminary registration but they must also hold a final registration at which time pupils' programs of classes are finally made out. Schools report using various methods in carrying out this final registration. In approximately half the schools the subjects elected by the pupil at preliminary registration are arranged on his schedule without consulting him. (See Table 15.) In 55 schools having preliminary registration the pupil's program is arranged by an adviser in consultation with the pupil. Pupils' programs in small schools are usually arranged by the pupils themselves; on the other hand, in the larger schools the individual programs are more often arranged without consulting the pupils. Five schools report that on the opening day of school groups of pupils arrange the subjects selected at preliminary registration under the direction of advisers. If pupils have, at the time of preliminary registration, been given careful guidance in selecting the subjects they wish to take, it should scarcely be necessary for the pupil to be present when his program is arranged.

Schools which do not have preliminary registration conduct registration on the opening day of the school year. In 17 such schools the pupils and advisers arrange the individual programs on the opening day. In the remaining three schools which do not conduct preliminary registration groups of pupils arrange their programs under the direction of an adviser on the opening day of school. Without doubt, conducting only final registration with no preliminary registration does not give pupils an opportunity to give careful consideration to the selection of subjects.

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TABLE 15.—*Procedure in final registration in schools classified according to enrollment groups*

Procedure	Enrollment					Total (159)
	100 or fewer (22)	101-300 (34)	301-750 (38)	750-2,000 (48)	More than 2,000 (17)	
1	2	3	4	5	6	7
Subjects selected by pupil in preliminary registration arranged on his schedule without consulting him.....	4	11	22	31	11	79
Subjects selected by pupil in preliminary registration arranged on his schedule by adviser in consultation with pupil.....	9	14	11	15	6	55
Pupil makes no preliminary registration, reports to school on opening day, and in consultation with adviser arranges his schedule.....	7	5	4	1		17
Pupils make no preliminary registration; groups of pupils arrange their subjects under the direction of an adviser on opening day of school.....	2	1				3
Pupils make preliminary registration; groups of pupils arrange their subjects under the direction of an adviser on opening day of school.....		3	1	1		5

NOTE.—The numbers in parentheses indicate the number of schools in the various enrollment groups which report the procedure used in final registration.

9. EQUALIZING CLASS SECTIONS

In approximately two-thirds of the schools class sections are equalized by tabulating the number of pupils assigned to each section. (See Table 16.) Making such tabulations at the time of registration undoubtedly eliminates much of the disorder and confusion which results from changing pupils from section to section after classes have opened. Sixty-three schools, a number of which also keep a tally of pupils assigned to each class section, equalize classes by transferring pupils from section to section during the first days of school.

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TABLE 16.—*Methods of equalizing class sections in schools classified according to enrollment groups*

Method	Enrollment groups					
	100 or fewer (24)	101-300 (42)	301-750 (43)	751-2,000 (53)	More than 2,000 (17)	Total (179) ¹
1	2	3	4	5	6	7
Keep a tabulation of the number of pupils assigned to each class.....	4	22	33	45	15	119
Transfer pupils from class to class during the first days of school.....	2	13	15	26	7	63

NOTE.—The numbers in parentheses indicate the number of schools in the various enrollment groups.

¹ A number of schools report using both methods of equalizing class sections.

IV : MAKING THE CLASS SCHEDULE

1. THE TIME OF COMPLETING THE CLASS SCHEDULE

In connection with making the class schedule the school administrator must make a number of decisions: He must determine when the schedule is to be made; he must decide who is to make the schedule; and he (or those whom he selects) must devise methods of making the schedule. On the inquiry forms returned by the schools cooperating in this study information was requested regarding practices with relation to these and other concerns of schedule making.

The time of completing the schedule has an important influence on the prompt organization of the school for effective work; for if the class schedule is not completed until after school opens, much confusion is likely to result during the opening days of school. Puckett particularly recommends making the schedule before the close of school in the spring. He says:

This has many advantages, as it enables the principal to check on his proposed schedule before the pupils leave for the summer. He is then able to make any necessary changes before the schedule is actually put into operation. In cases where the individual pupils' schedules or programs are to be made out in the office, this work can be started as soon as school closes in June so that everything is organized long before the first day of school in September.¹

Only 21 of the 179 schools taking part in this study complete the class schedule on the opening day of school. (See Table 17.) In 3 schools the schedule is finished the day before school opens, and 31 schools report that the schedule is completed during the week preceding the beginning of the school year. In 67 schools, however, the schedule is made during the summer, and in 56 schools it is completed before school closes in the spring. The explanation of the large proportion of the schools which complete their class schedules at early dates must be found in the fact that the schools represented

¹ Puckett, Roswell C. *Making a High-School Schedule of Recitations*. New York, Longman's, Green & Co., 1931. (See pp. 70-71.)

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in the study were recommended for their noteworthy practices in registration and schedule making and, in consequence, represent a selected group in this respect.

TABLE 17.—The time the schedule is completed in schools classified according to enrollment groups

Time of completion	Enrollment					Total (179)
	100 or fewer (24)	101-300 (42)	301-750 (43)	751-2,000 (53)	More than 2,000 (17)	
1	2	3	4	5	6	7
During the summer.....	8	16	17	22	4	67
During the week before school closes in the spring.....	4	7	10	17	7	45
During the week before school opens.....	3	14	6	7	1	31
First day of school.....	9	4	6	2		21
2 weeks before school closes in the spring.....			1	2	1	4
1 day before school opens.....		1	2			3
3 weeks before school closes in the spring.....				1	2	3
4 weeks before school closes in the spring.....			1		2	3
6 weeks before school closes in the spring.....				1		1
Time of completing the schedule is not given.....				1		1

NOTE.—The numbers in parentheses indicate the number of schools in the various enrollment groups.

2. POSITIONS OF PERSONS MAKING THE SCHEDULE

An important consideration in relation to schedule making is the decision regarding who shall make the schedule. (See Table 18.) In more than half of the schools included in this study the principal makes the schedule without reported assistance from any other staff member. In the smaller schools the principal alone, the superintendent alone, or the principal and superintendent working together usually carry this responsibility. As the size of schools increases, however, principals more and more place at least a share of the responsibility for making the schedules on persons in other positions. In 21 schools neither the principal nor the superintendent takes any part in making the schedule; in 13 of these schools the assistant principal makes the schedule; in 3 schools the schedule is made by clerks; the schedule of 1 school is made by department heads; and in 1 school the class program is arranged by the assistant principal and a clerk.

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TABLE 18.—Positions of persons making schedules in schools classified according to enrollment groups

Position	Enrollment					Total (179)
	100 or fewer (24)	101-300 (42)	301-750 (43)	751-2,000 (53)	More than 2,000 (17)	
1	2	3	4	5	6	7
Principal.....	14	25	25	27	2	93
Assistant principal.....				7	6	13
Principal and clerk.....			4	5		9
Principal and committee of teachers.....	3	3		3		9
Principal and superintendent.....	2	6		1		9
Superintendent.....	4	3				7
Principal and assistant principal.....			2	3		5
Principal and department heads.....			1		3	4
Committee of teachers.....		2			1	3
Clerk.....		1	1		1	3
Superintendent and teacher.....		1				2
Principal, assistant principal, and teacher.....			2			2
Principal and counselor.....			1	1		2
Principal, teacher, and clerk.....			1	1		2
Other.....	1	1	2	2	3	9
Positions of persons making schedule not given.....			3	3	1	7

NOTE.—The numbers in parentheses indicate the numbers of schools in the various enrollment groups.

At Eastern High School, Washington, D. C., the making of the school's schedule is in complete charge of a teachers' committee of three members. This committee, the membership of which usually remains constant from year to year, assembles the data from preliminary registration, and completes the schedule for the following year two weeks before the close of school in June. Copies of the master schedule are given the school counselors who in turn make out the individual programs of the pupils in their advisory groups. The programs for all pupils in the school are returned to the schedule committee before the close of the school year, and for a few days after school has closed the teachers on this committee work making necessary adjustments on individual programs. About one week before school opens in the fall the members of the schedule committee return to school and take charge of registering new pupils from out of town and also make such changes in individual pupils' programs as may be necessary due to attendance at summer school.

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At Central Senior High School, South Bend, Ind., department heads, the assistant principal, and the principal make the school schedule. The department heads make the schedules for their respective departments as they should like to have them. These proposed department schedules are combined by the assistant principal and such changes as are necessary are made by him. The principal then studies the completed program and consults with the assistant principal regarding any difficulties which may arise.

At Belmont High School, Los Angeles, the department heads make the schedules for their respective departments. They then meet together as a group and make a final schedule for the school. This schedule is studied by the principal before its final adoption.

3. METHODS OF SCHEDULE MAKING

The three methods of making a schedule reported by schools taking part in this investigation are the block method, the mosaic method, and the combination method. In using the block system the person making the schedule groups together the program cards of all pupils taking the same combination of subjects, makes the required number of sections, and then assigns the pupils in each section (or block) classes at the different periods of the day. Puckett describes a definite example of making a schedule by the block method as follows:

... suppose 90 pupils have registered for English 9B, civics 9B, algebra 9B, and Latin 9B. This will be enough to form three blocks of 30 pupils each. The schedule maker may then select a series of periods for each block. For block 1, he could have English 9B the first period, civics 9B the third period, algebra 9B the fifth period, and Latin 9B the seventh period. For block 2, he could have English 9B the second period, civics 9B the fourth period, algebra 9B the sixth period, and Latin 9B the eighth period. For block 3, he could select English 9B the third period, civics 9B the fifth period, algebra 9B the seventh period, and Latin 9B the first period.¹

Puckett shows as follows the arrangement of the procedure described above:

¹ Ibid., p. 132.

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Subject	Periods for recitations		
	Block I	Block II	Block III
1	2	3	4
English 9B.....	1	2	3
Civics 9B.....	3	4	5
Algebra 9B.....	5	6	7
Latin 9B.....	7	8	1

In speaking of the mosaic method Puckett says:

It is much less exact than the block system, yet if used in a systematic way, may be very effectively employed. This method consists in placing the different sections at different periods of the day where the schedule maker thinks there will be no conflicts, but without regard for any set arrangement of any particular group or combination of subjects.³

In the combination method the person making the schedule employs the block method for all pupils whose programs adapt themselves to that method. The mosaic method is then used in arranging the remaining classes.

The mosaic method is used by approximately three-fourths of the schools which report the method of making their schedules. (See Table 19.) Puckett believes the frequency with which the mosaic method is employed may be explained by the fact that "it grows out of a hit-and-miss method which the beginner so frequently employs."⁴

TABLE 19.—Methods of making schedules in schools classified according to enrollment groups

Method	Enrollment					Total (179)
	100 or fewer (24)	101-300 (42)	301-750 (43)	751-2,000 (53)	More than 2,000 (17)	
1	2	3	4	5	6	7
Mosaic.....	11	21	22	24	10	88
Combination.....	-----	3	5	12	3	23
Block.....	-----	-----	3	4	-----	7
No reply.....	13	18	13	13	4	61

NOTE.—The numbers in parentheses indicate the number of schools in the various enrollment groups.

³ Ibid., p. 136.

⁴ Ibid.

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The block method is used in only 8 schools and the combination method in 23 schools. The block system is undoubtedly used so infrequently due to irregular pupil programs caused by such factors as failure and the choice of electives. Those who wish to use the block method usually, therefore, combine the block and the mosaic methods.

4. BASES FOR DETERMINING MEMBERSHIP IN CLASSES

The use of ability grouping, sex segregation, and segregation by curriculum raises problems which must be considered at the time of making the schedule. The consideration of these factors has, of course, an important influence on the making of the schedule, for classes must be so arranged that pupils of like ability, those of like sex, or those taking the same curriculum, can be grouped together and yet have no conflict in their schedules.

More than half of the schools taking part in this study report using ability grouping. (See Table 20.) Segregation by curriculum is used in 56 schools, and 14 schools report that they use sex segregation. The frequency with which ability grouping and curriculum segregation are found reveals the fact that many principals must take account of these factors at the time of making the class schedule.

TABLE 20.—Bases for determining membership in class sections in schools classified according to enrollment groups

Base	Enrollment					Total (179)
	100 or fewer (24)	101-300 (42)	301-750 (43)	751-2,000 (53)	More than 2,000 (17)	
1	2	3	4	5	6	7
Ability grouping.....	8	17	23	37	11	96
Curriculum segregation.....		9	16	27	4	56
Sex segregation.....		2	3	8	1	14

NOTE.—The numbers in parentheses indicate the number of schools in the various enrollment groups.

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5. DEVICES USED IN MAKING SCHEDULES

Because the present investigation aims to report outstanding practices, there was provided on the inquiry form sent to the schools taking part in this study space for describing procedures found particularly helpful in constructing the schedule. Especially requested were devices used in connection with schedule problems related to ability grouping, sex segregation, and irregular pupil schedules.

The device reported more than any other is that of using the schedule of the previous year as the basis for the new schedule. (See Table 21.) At Central High School, St. Joseph, Mo., for example, the principal states, "All one-section classes are given at the same period from year to year." Two schools go so far as to use the same schedule from year to year. It seems that changes in the teaching staff, changes in the curriculum, and variations in pupil subject elections would make particularly difficult the use of the same schedule from year to year.

TABLE 21.—*Devices used in making schedules in schools classified according to enrollment groups*

Device in making the schedule	Enrollment					Total (179)
	100 or fewer (24)	101-300 (42)	301-750 (43)	751-1,000 (53)	More than 2,000 (17)	
1	2	3	4	5	6	7
Use schedule of previous year as basis		1	4	5		10
Make the schedule for senior classes first, then junior, etc.		2	1	4		7
Use card pocket device with colored cards		1		5		6
Use board with movable blocks representing class sections			2	2		4
Schedule required subjects first		1		3		4
Use schedule of previous years		2				2
Have three levels of same subject (English, for example) meet during same period					2	2
Estimate percentage of promotion upon basis of past experience				1	1	2
Schedule classes of which there is only one section first		1			1	2
Make schedule of the ninth grade first, then tenth grade, etc.				2		2
Schedule elective subjects first			1	1		2
Alternate subjects (English III and IV) various years	1	1				2
Arrange laboratory subjects the first period in the morning or the first period in the afternoon to facilitate preparation of the apparatus	2					2

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TABLE 21.—*Devices used in making schedules in schools classified according to enrollment groups—Continued*

Device in making the schedule	Enrollment					Total (179)
	100 or fewer (24)	101-300 (42)	301-750 (43)	751-2,000 (53)	More than 2,000 (17)	
1	2	3	4	5	6	7
Schedule classes of the pupils with a regular program first, then those with irregular programs.....				1		1
Cooperate with other schools in county in working out alternate subjects for various years for the sake of pupils who transfer.....		1				1
Confer with teachers.....		1				1
Confer with subject supervisors.....			1			1
Assign teachers of unusual patience to advise pupils with irregular schedules.....				1		1
Have most difficult subjects meet in the morning where possible.....	1					1
So arrange schedule that members of the same department have a common vacant period—avoid after school departmental meetings.....					1	1
Arrange special sections for repeaters.....			1			1
Arrange subject and its prerequisite for same period to accommodate pupils who have failed.....					1	1
Schedule classes of pupils with irregular programs first.....			1			1
Keep record of the number who select each course in preliminary registration as compared with the number who actually take the course when school opens in the fall.....				1		1
Ask department heads the probable number of failures in the beginning courses in their department.....					1	1
Do not schedule classes in the same course for two succeeding periods unless there are more than two sections of the class.....					1	1
First schedule classes which meet at a fixed time due to the fact that they are taught by part-time teachers.....				1		1
First schedule classes with double periods.....			1			1
First schedule classes requiring special rooms.....			1			1

NOTE.—The numbers in parentheses indicate the number of schools in the various enrollment groups.

In seven schools classes for seniors are arranged first, those for juniors next, etc. Those using this device point out that the pupils in the upper years of school have more irregular programs than pupils in the lower grades. Therefore, the upper-grade classes should be scheduled first because the arrangement of these classes is less flexible than those of pupils in the lower grades. In two schools, however, the foregoing

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procedure is reversed, classes of the lower years in school being scheduled first.

Reports from six of the larger schools state that the use of cards and a card-pocket device is helpful. The general plan used in these schools is to make one card for each class section in the school. These cards are fitted into a series of pockets, each row of which represents a period of the day. The cards are arranged and rearranged until conflicts are eliminated. Four schools use boards on which are marked off squares for each teacher for each period of the day. Movable blocks representing the various class sections are moved about upon this board until the schedule is completed. In a number of schools the cards or blocks used are of different colors to represent the various grades in the school.

Reports from four schools indicate that required subjects are scheduled first. One principal gives his reason for this procedure as follows: "I schedule required subjects first, making sure there will be no conflicts between them. I then schedule elective subjects making every attempt to avoid conflicts. If conflicts occur, however, the pupils must change their electives."

A device for use in connection with the problem of ability grouping is reported by Foch Junior High School, Detroit, and by Lincoln High School, Los Angeles. In arranging the schedules at these schools three levels of the same course are programmed for the same hour of the day. This is not only helpful in arranging the schedule but it is also reported to be convenient if, after school has opened, it is found necessary to change pupils from one ability level to another in certain classes. Such changes can be made without disrupting other parts of the pupils' programs.

All schools confront the problem of changes in preliminary registration. Usually the schedule is arranged on the basis of data obtained during preliminary registration, and changes in pupil election (due to failures, for example) cause difficulty as regards the schedule. At Eastern High School, Washington, D. C., and at Wilson Junior High School, Philadelphia, the percentage of pupils who will fail the various courses is estimated upon the basis of past experience. At Central

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High School, Detroit, the department heads are asked to send to the principal's office estimates of the number of failures in the beginning courses in their departments. Past experience at Central High School has indicated that the number of failures in the advanced classes are balanced by the number of failures in preceding courses. For example, the number of failures in English III will be approximately equal to the failures in English IV; therefore the enrollment in English IV will remain nearly constant.

At the Williamsport (Pa.) Senior High School, a record is made each year of the number who select various courses during preliminary registration as compared with the number who actually take the courses when school opens in the fall. Data kept for a number of years indicate that the actual enrollment in Latin III classes is about 25 per cent less than the number who register for this subject at the time of preliminary registration; on the other hand, the enrollment in chemistry is usually about 12 per cent more than the number who select this subject at the time of preliminary registration. Knowledge of tendencies of this type is reported to be very helpful in estimating the number of sections needed for various courses.

Two of the smaller schools report that they offer certain subjects only every second year. The principal of Liberty High School, Granite, Okla., where subjects are alternated from year to year, reports that the high schools of the county cooperate in arranging the subjects which are offered during alternate years so that during a given school year the same subjects will be offered in the various schools of the county. This arrangement has been made to help pupils who find it necessary to transfer from one school to another.

At the New Underwood (S. Dak.) High School and at the Huntingtown (Md.) High School an effort is made to have classes with laboratory periods meet either the first period in the morning or the first period in the afternoon so that the instructors in charge may have needed apparatus set up at the opening of the period.

At the Thomas Edison Junior High School, Los Angeles, each department in the school has one period during which

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no teacher in the department has a class. The purpose of this arrangement is to make it possible to hold departmental meetings during school hours.

The schedule at Eastern High School, Washington, D. C., is so arranged that subjects and their prerequisites meet the same hour. For example, one section of French III meets the same period as one section of French IV. The purpose of this arrangement is to accommodate pupils who have irregular programs due to failure.

At Central High School, Detroit, classes in the same course are not scheduled for succeeding periods unless there are more than two sections of the subject. If such classes were to meet in two contiguous periods, the course might be closed to pupils having one class which meets those same two periods.

CHAPTER V : CHARACTERISTICS OF THE SCHEDULE

1. THE LUNCH PERIOD

Before the schedule can be prepared, a number of decisions must be made regarding characteristics of the school day. Among the problems which must be considered are methods of arranging the lunch period, whether time for extracurriculum activities is to be provided during school hours, the length of class periods, the number of class periods in the school day, and provisions for intermission between periods. Knowledge of practice with regard to these problems in the selected schools cooperating in the present investigation should be of assistance to school administrators who find themselves confronted with the necessity of making decisions regarding the school day in their schools. For this reason, the schools taking part in this study were asked for information about a number of characteristics of the school day.

All schools make provision for a lunch period. The periods for lunch range in length from 10 minutes to 2 hours, the average being 50.7 minutes. (See Table 22.) In schools with enrollments of 300 or fewer the lunch period is longer than in schools with larger enrollments. This may be explained by the fact that in many small schools most pupils go home to lunch; in the larger schools, however, the pupils usually eat their noon meal in the school building.

In 49 schools part of the pupils are at lunch while others attend classes or study. This arrangement is usually made in order that the school lunchroom may more easily accommodate all pupils. Two lunch periods are scheduled in 23 schools, and 18 schools have three lunch periods. One school reports six lunch periods. Only 8 of the 119 schools with enrollments of 750 or fewer have their pupils go to lunch in two or more groups; on the other hand, 41 of the 70 schools with enrollments of more than 750 have two or more lunch periods.

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TABLE 22.—Length of lunch periods in schools classified according to enrollment groups

Number of minutes	Enrollment					Total (176)
	100 or less (24)	101-300 (40)	301-750 (43)	751-2,000 (52)	More than 2,000 (17)	
1	2	3	4	5	6	7
10			1			1
15			1	1	1	3
20		1	2	3		6
25			1	7	2	10
30	1	3	7	13	7	31
35	1	1	1	4		7
40			5	1	2	8
45	1	4	3	4	2	14
50	1	2	1	2	3	9
55		3	2			5
60	16	10	8	4		38
65			2	1		3
70	1	4	1	4		10
75	2	9	3	3		17
80		2	2	4		8
85			1			1
90	1	1	1	1		4
120			1			1
Average length of lunch period in minutes.	50.6	50.9	50.9	44.6	35.0	50.7

NOTE.—The numbers in parentheses indicate the number of schools reporting the length of their lunch periods.

1. ACTIVITY PERIODS

A large majority of the schools included in this investigation regularly set aside periods within the school day for extracurriculum activities. (See Table 23.) All senior high schools and 38 of the 40 junior high schools schedule activities periods. Twelve of the 88 4-year high schools and 7 of the 22 junior-senior high schools do not provide for extracurriculum activities within the school day. These data reveal the fact that larger proportions of junior and senior high schools than schools of other types schedule activities periods.

Small schools have activities periods less frequently than do large schools. Fifteen of the 63 schools with 300 pupils or fewer make no provision for extracurriculum activities within the school day; on the other hand, only 6 of the 110 schools with more than 300 pupils fail to provide periods for extracurriculum activities.

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TABLE 23.—Schools setting aside periods within the school day for extracurriculum activities

Practice	Types of schools				
	Junior (40)	Junior- senior (22)	Senior (23)	4-year (88)	Total (173)
1	2	3	4	5	6
Periods are set aside for extracurriculum activities.	38	15	23	76	152
Periods are not set aside for extracurriculum activities.	2	7	.....	12	21

NOTE.—The numbers in parentheses indicate the number of schools of the various types reporting regarding a period for extracurriculum activities.

As is to be expected the activity most often provided for is the assembly, for which allowance is made in 126 schools. (See Table 24.) Periods are set aside for the home room in 116 schools and for extracurriculum activities other than the assembly and the home room in 82 schools. Large schools have home-room periods more often than do smaller schools. This situation may be accounted for by the fact that small schools have less need of the home-room organization than

TABLE 24.—Activities for which periods within the school day are set aside in schools classified according to enrollment groups

Type of activity	Enrollment					Total (152)
	100 or fewer (17)	101-300 (31)	301-750 (38)	751- 2,000 (51)	More than 2,000 (16)	
1	2	3	4	5	6	7
Home room.....	12	11	31	48	14	116
Assembly.....	14	27	34	41	10	126
Other extracurriculum activities.....	10	17	25	23	8	82

NOTE.—The numbers in parentheses indicate the number of schools in the various enrollment groups which set aside periods for one or more types of extracurriculum activities.

do larger schools.

In junior and senior high schools home-room periods are found more than in either junior-senior or 4-year high schools. Fewer junior high schools have assembly periods than is the

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case with schools of other types. Junior high schools, however, have periods set aside for extracurriculum activities other than assembly and home room more than any other type of school.

The activity for which most time in the schedule is set aside is the home room, for which an average of more than 59 minutes a week is provided. (See Table 25.) Small schools set aside more time than do large schools for assembly programs and also for extracurriculum activities other than home room and assembly. Schools which set aside periods for extracurriculum activities allow an average of more than 142 minutes a week for these activities.

Junior and senior high schools allow more time for home-room activities than do the other types of schools. Junior high schools devote more time to extracurriculum activities other than home room and assembly than do schools of other types. Both the number of junior high schools having these periods and the amount of time devoted to these activities indicate that junior high schools are making greater provision for the meetings of pupil organizations during school hours than are schools of any other type. This situation may be owing to the belief of authorities that pupils of junior high school age should under no circumstances be required to come to school for extracurriculum activities in the evening.

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TABLE 25.—Minutes per week set aside for extracurriculum activities in schools classified according to enrollment groups and types of schools

Activity	Enrollment					Types of schools				
	100 or fewer (17)	101-300 (31)	301-750 (38)	751-2,000 (51)	More than 2,000 (15)	Junior (38)	Junior-senior (15)	Senior (23)	4-year (76)	Total (152)
1	3	3	4	5	6	7	8	9	10	11
Assembly periods:										
Average.....	41.2	45.4	42.9	37.8	35.7	34.3	35.0	50.4	42.3	40.8
Range.....	0-90	0-200	0-120	0-100	0-80	0-100	0-60	0-120	0-200	0-200
Number of schools in which no time is set aside for assembly periods.....	3	4	4	10	5	10	2	2	12	26
Home-room periods:										
Average.....	72.9	30.6	56.2	72.8	66.6	77.5	45.0	75.0	48.5	59.6
Range.....	0-225	0-180	0-240	0-200	0-150	0-200	0-180	0-180	0-240	0-240
Number of schools in which no time is set aside for home-room periods.....	5	20	7	3	1	1	5	1	29	36
Periods for extracurriculum activities other than home room and assembly:										
Average.....	56.4	47.3	51.6	29.1	33.7	47.3	40.3	37.8	41.5	42.2
Range.....	0-240	0-200	0-200	0-150	0-250	0-200	0-200	0-180	0-250	0-250
Number of schools in which no time is set aside for extracurriculum activities other than home room and assembly.....	7	14	43	28	8	13	7	14	36	70
Total time per week set aside for extracurriculum activities:										
Average.....	170.5	123.3	150.9	139.7	126.0	159.1	120.3	163.2	132.3	142.6
Range.....	20-300	30-250	30-300	20-300	25-400	25-330	30-300	25-300	20-400	30-400

NOTE.—The numbers in parentheses indicate the number of schools in the various enrollment groups and of the various types which set aside periods for extracurriculum activities.

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3. LENGTH AND NUMBER OF CLASS PERIODS

The length of the class period must be given careful consideration in making the schedule, for it influences the methods of teaching used in the school. If teachers are to conduct supervised study, class periods may be expected to be long; if, on the other hand, the principal wishes to make no provisions for supervised study, the class periods will probably be short. In the selected schools included in the present investigation class periods range in length from 35 to 75 minutes, the average being 47.2 minutes. (See Table 26.)

If periods of 55 minutes or more are regarded as adequate in length for supervised study, more than a fourth of the schools cooperating in this study may be said to have class periods the length of which encourages this method of teaching. Neither the size nor the type of school appears to have any important influence on the length of the class period. The class periods in junior and in senior high schools, however, tend to be slightly longer than those in schools of other types.

TABLE 26.—Length of class period in schools classified according to enrollment groups and types of schools

Number of minutes	Enrollment					Types of schools				
	100 or fewer (24)	101-300 (42)	301-750 (43)	751-2,000 (53)	More than 2,000 (17)	Junior (41)	Junior-senior (23)	Senior (26)	4-year (39)	Total (179)
1	2	3	4	5	6	7	8	9	10	11
35		1		3		1			3	4
40	9	18	14	12	7	8	10	5	37	60
45	6	10	8	8	3	6	7	3	19	35
50	2	1	9	14	1	15	1	2	9	27
55	2	7	7	9	6	7	3	12	9	31
60	3	3	3	5		3		3	8	14
65		1		1					2	2
75				1				1		1
Number of minutes in class period not given	1	1	2			1	2		1	4
Average length of class period in minutes	46.4	46	47.2	48.7	46.8	48.5	44.3	51.9	45.9	47.2

NOTE.—The numbers in parentheses indicate the number of schools in the various enrollment groups and of the various types.

¹ One school in this group has 60-minute periods in the forenoon and 40-minute periods in the afternoon.

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Closely related to the problem of the length of the class period is the number of class periods in the school day. Schools report from 4 to 10 class periods a day, the average being slightly less than 7. (See Table 27.) Although the size of the schools bears no consistent relationship to the number of periods in the school day, the type of school appears to have some influence on this characteristic of the schedule, for junior and senior high schools tend slightly to have fewer class periods than do either junior-senior or 4-year high schools. This situation can be explained by the fact that the periods in junior and senior high schools are somewhat longer than those in schools of the other types.

TABLE 27.—Number of class periods per day in schools classified according to enrollment groups and types of schools

Number of periods	Enrollment					Types of schools				
	100 or fewer (24)	101-300 (42)	301-750 (42)	751-2,000 (53)	More than 2,000 (17)	Junior (41)	Junior-Senior (23)	Senior (25)	4-year (89)	Total (178)
1	2	3	4	5	6	7	8	9	10	11
4				1				1		1
5	3	3	6	5		4		4	9	17
6	7	8	16	28	9	24	6	14	24	68
7	2	11	14	7	2	6	4	2	24	36
8	10	17	6	12	5	7	13	3	27	50
9	2	3							5	5
10					1			1		1
Average	7	7	6.5	6.5	7	6.4	7.3	6.2	6.9	6.8

NOTE.—The numbers in parentheses indicate the number of schools in the various enrollment groups and of the various types which report the number of class periods in the school day

At the Williamsport (Pa.) Senior High School there are four class periods of 75 minutes each in the school day. Each class meets four periods a week, and every pupil takes five subjects. In this way no pupil has a vacant period, and the credits required for graduation are 20 instead of the usual 15 or 16. The principal favors having pupils secure 20 credits, for in this way they may meet college entrance requirements and in addition take a number of subjects for which colleges will not give entrance credit. This makes it possible for the high school to break away from restrictions usually imposed upon the school by college entrance requirements. Having

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periods of this length and having all pupils in class every period of the day encourages, of course, the extensive use of supervised study. The principal of Williamsport Senior High School, who is especially interested in the influence of the schedule arrangement on supervised study, says in discussing the length of the periods in his school, "Working under the direction of teachers (even though the teachers do not supervise study in the accepted use of the term) is superior to having pupils work in study halls under the direction of teachers not at all familiar with the lessons the pupils are studying."

4. INTERMISSION BETWEEN PERIODS

The schedule must, of course, allow time between periods to permit pupils to go from class to class. Fourteen schools (9 of which have 100 or fewer pupils) report, however, that they do not have intermissions between periods. Only 3 of the 108 schools with enrollments of more than 300 have no intermissions between periods. Undoubtedly in the schools which have no intermission, the pupils are allowed a few minutes to pass from class to class. One of the smaller schools reports, however, that no intermission is necessary because the pupils remain in the same classrooms and the teachers change rooms.

TABLE 28.—Length of intermission between periods in schools classified according to enrollment groups

Number of minutes	Enrollment					Total (160)
	100 or fewer (13)	101-300 (39)	301-750 (40)	750-2,000 (51)	More than 2,000 (17)	
1	2	3	4	5	6	7
1	4					4
2	4					8
3	1	14	9	3		30
4	1	9	18	28	3	59
5	1	5	2	8	5	21
6	3	11	11	12	8	45
7						
Average	2.6	3.3	3.4	3.6	4.5	3.5

NOTE.—The numbers in parentheses indicate the number of schools which report the length of intermission between periods.

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The length of the intermission varies from 1 minute in four schools with 100 or fewer pupils to 7 minutes in a school with an enrollment of more than 2,000, the average length of the intermission being 3.5 minutes. (See Table 28.) The intermission periods are consistently longer in larger schools than in smaller schools. This must be owing to the fact that in the small school classrooms are not widely scattered and little time is required for the pupils to move from class to class; on the other hand, in the larger buildings and plants the distance between rooms is greater and the time allowed for moving from room to room must be correspondingly greater than in smaller schools.

5. WARNING BELL BEFORE CLOSE OF CLASS PERIODS

Seventy schools (40 per cent of the 175 schools) indicate that they have warning bells sound before the close of class periods. (See Table 29.) The warning bell is found somewhat more often in large than in small schools; it is, however, used in 7 schools with 100 or fewer pupils and in 16 schools with enrollments from 101 to 300.

TABLE 29.—Schools having warning bells before close of periods

Practice	Enrollment					Total (175)
	100 or fewer (24)	101-300 (41)	301-750 (41)	751-2,000 (52)	More than 2,000 (17)	
1	2	3	4	5	6	7
Have warning bell.....	7	16	18	20	9	70
Do not have warning bell.....	17	25	23	32	8	105

NOTE.—The numbers in parentheses indicate the number of schools in the various enrollment groups which indicate whether or not they have warning bells.

The warning bell sounds from 1 to 12 minutes before the close of the period, but the average length of time for the ringing of the bell is 3.3 minutes before the period ends. (See Table 30.) Not only do large schools more often have warning bells than do small schools, but in the large schools, which have warning bells, the bell sounds at a longer interval before the close of the period than in small schools.

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TABLE 30.—Number of minutes before close of period at which warning bell rings in schools classified according to enrollment groups

Number of minutes	Enrollment					Total (66)
	100 or fewer (7)	101-300 (15)	301-750 (18)	750-2,000 (17)	More than 2,000 (9)	
1	2	3	4	5	6	7
1.....	2	1	4	3		10
2.....	1	6	5	2	3	17
3.....	2	3	5	7	2	19
4.....						
5.....	2	4	3	3	3	15
6.....						
7.....		1				1
8.....						
9.....						
10.....						
Average.....	2.9	3.3	3.0	3.3	4.1	3.3

NOTE.—The numbers in parentheses indicate the number of schools in the various enrollment groups reporting on this item. See Table 1 for the total number of schools cooperating in the study.

6. ROOMS WHERE PUPILS SPEND VACANT PERIODS

At the time of making the schedule, provision must be made for rooms in which pupils may spend their vacant periods, if the schedule includes such periods. Study halls are used in 144 of the 179 schools. (See Table 31.) Pupils in 83 schools spend study periods in the library, and in 27 schools the home room is used by pupils when they are not in class. Sixteen schools report that at times pupils are required to spend their vacant periods in classrooms where classes are meeting. This situation occurs most often in schools with enrollments of 100 or fewer, but it is also found in 7 schools with enrollments of more than 750 pupils.

TABLE 31.—Rooms in which pupils spend their vacant periods in schools classified according to enrollment groups

Room	Enrollment					Total (179)
	100 or fewer (24)	101-300 (42)	301-750 (43)	751-2,000 (63)	More than 2,000 (17)	
1	2	3	4	5	6	7
Study hall.....	19	28	26	40	11	144
Home room.....	5	6	9	5	2	27
Library.....	8	11	27	31	6	83
Classroom where class is meeting.....	5	2	2	6	1	16

NOTE.—The numbers in parentheses indicate the number of schools in the various enrollment groups.

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7. ROTATION OF CLASSES

Only six schools rotate from day to day the time at which classes meet. (See Table 32.) Three of these schools have enrollment of 300 or fewer and 3 have enrollments of more than 750. Apparently, size of school has no relationship with the practice of rotating periods.

TABLE 32.—Schools rotating from day to day the time at which classes meet

Practice	* Enrollment					Total (166)
	100 or fewer (21)	101-300 (39)	301-750 (38)	751-2,000 (61)	More than 2,000 (17)	
1	2	3	4	5	6	7
Time at which classes meet is rotated.....	2	1	-----	2	1	6
Time at which classes meet is not rotated.	19	38	38	49	16	160

NOTE.—The numbers in parentheses indicate the number of schools in the various enrollment groups which indicate whether the time at which classes meet is rotated from day to day.

CHAPTER VI : THE PUPILS' WORKING DAY

1. THE TIME THE SCHOOL DAY BEGINS AND ENDS

Among the various factors to be considered in making the schedule the length of the pupils' working day is one of the most important. The time at which the school day opens in the schools cooperating in this study ranges from 8 to 9.10 a. m., the median time being 8.34. (See Table 33.) The school day opens earlier in the larger than in the smaller schools. This tendency is due to the fact that in rural communities where most small schools are located, transportation facilities are not of the best, and many pupils must travel a considerable distance in going to school.

The median hour at which schools close in the afternoon is 3.33. (See Table 34.) In general, small schools close later in the day than do large schools. This is to be expected in view of the fact that small schools open later in the day than large schools.

TABLE 33.—*The time the school day opens in schools classified according to enrollment groups*

Time	Enrollment			Time	Enrollment		
	300 or fewer (65)	More than 300 (111)	Total (176) ¹		300 or fewer (65)	More than 300 (111)	Total (176)
1	2	3	4	1	2	3	4
8.00-8.04.....	2	4	6	8.40-8.44.....	4	3	7
8.10-8.14.....		4	4	8.45-8.49.....	7	8	15
8.15-8.19.....	5	10	15	8.50-8.54.....		4	4
8.20-8.24.....	3	9	12	8.55-8.59.....	3	3	6
8.25-8.29.....		7	7	9.00-9.04.....	23	10	33
8.30-8.34.....	17	40	57	Median opening time.....	8.45	8.32	8.34
8.35-8.39.....	1	8	9				

NOTE.—The numbers in parentheses indicate the number of schools in the various enrollment groups which report the time at which the school day opens.

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TABLE 34.—The time the school day closes in schools classified according to enrollment groups

Time	Enrollment			Time	Enrollment		
	300 or fewer (65)	More than 300 (111)	Total (176)		300 or fewer (65)	More than 300 (111)	Total (176)
1	2	3	4	1	2	3	4
1.00-1.14.....	1	1	2	2.45-2.50.....	1	3	4
1.15-1.29.....		1	1	3.00-3.14.....	3	30	33
1.30-1.44.....		1	1	3.15-3.29.....	6	20	26
1.45-1.59.....		2	2	3.30-3.44.....	15	28	43
2.00-2.14.....		1	1	3.45-3.59.....	11	8	19
2.15-2.29.....		2	2	4.00-4.14.....	28	8	36
2.30-2.44.....		6	6	Median closing time.....	3.54	3.21	3.33

NOTE.—The numbers in parentheses indicate the number of schools in the various enrollment groups which report the time at which their school day closes.

1. CHARACTERISTICS OF THE SCHOOL DAY

The average length of the school day in the schools taking part in this study is slightly less than 6 hours. (See Table 35). In the average school the typical pupil¹ spends 3 hours and 40 minutes in class, slightly more than 1½ hours in study, and 24 minutes in extracurriculum activities. An average of 19 minutes of each day is consumed by intermissions between periods.

Size of school appears to have no consistent influence on the length of the school day or the time given over to extracurriculum activities. In the case of time taken by intermissions between periods, time spent in class, and time allowed for study, the size of the school appears to have a significant influence. As would be expected, large schools require more time for the intermission between periods than small schools. The average pupil in schools with enrollments of 300 or fewer spends 3 hours and 20 minutes a day in class and approximately 2 hours in study. In schools with enrollments of more than 300 pupils, the pupil spends about 3 hours and 50 minutes in class and less than 1½ hours in study. In other words, the pupils in the larger schools spend more time in class but less time in study periods than pupils in small schools.

¹ The data in Table 35 are based on information supplied by principals regarding the average pupil load in their schools.

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TABLE 35.—Minutes devoted to various activities during the school day in schools classified according to enrollment groups and types of schools

Activities	Enrollment						Types of schools				
	100 or fewer (21)	101-300 (40)	301-750 (41)	751-2,000 (51)	More than 2,000 (17)	Junior (40)	Junior-senior (19)	Senior (24)	4-year (87)	All schools (170)	
1	3	3	4	5	6	7	8	9	10	11	
Total school day:											
Average.....	361.0	358.8	349.8	353.7	367.9	357.2	358.9	370.0	350.6	355.8	
Range.....	330-405	290-395	295-360	268-420	300-450	300-395	315-400	345-450	268-420	268-450	
In class:											
Average.....	205.1	194.2	224.9	238.5	224.9	272.7	198.9	220.5	200.3	220.0	
Range.....	160-275	160-328	155-330	160-360	160-336	163-360	156-288	160-300	160-330	156-360	
In extracurriculum activities:											
Average.....	28.4	16.9	27.3	28.4	24.8	30.0	14.1	20.6	22.2	24.2	
Range.....	0-60	0-60	0-60	0-60	0-60	0-65	0-60	5-60	0-60	0-60	
In intermission between periods:											
Average.....	10.0	19.7	19.0	20.6	25.1	19.5	24.2	21.5	17.3	19.2	
Range.....	0-36	0-40	0-45	0-36	10-44	0-45	9-40	0-40	0-44	0-45	
In school study outside of class:											
Average.....	119.5	124.05	78.6	68.2	91.1	35.0	121.7	98.4	110.8	92.4	
Range.....	60-180	10-180	0-168	0-168	0-240	0-135	10-180	0-240	0-180	0-240	

NOTE.—The numbers in parentheses indicate the number of schools in the various groups which reported the time allotments within the school day.

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Type of school has no significant influence on the length of the school day. Of real significance, however, is the relationship between (1) the type of school and (2) the time the pupil spends in class and study during the school day. In the junior high school, the average pupil spends $4\frac{1}{2}$ hours in class and only 35 minutes in study periods outside of class. In schools of other types, the pupils spend less than $3\frac{1}{2}$ hours in class and more than $1\frac{1}{2}$ hours in study periods. These data indicate that the pupils in junior high schools spend more time under the supervision of their classroom teachers than do those in schools of other types.

3. PUPILS WORKING DAY AS RELATED TO SEX AND LENGTH OF CLASS PERIOD

Without doubt one of the most important decisions to be made regarding the schedule is that which concerns the length of the class period. Since the long period is usually regarded as a means of encouraging supervised study, discussion regarding the length of the period is tied up with arguments regarding the merits of supervised study.

A significant question with relation to supervised study and to the length of the period is the influence of these factors on the amount of time which pupils work, inclusive of time in and out of class. An argument often used in favor of long periods is that such periods cause pupils to study more and thus increase the efficiency of instruction. In other words, it is claimed that although long periods require pupils to spend more time in class than short periods, the pupils will spend equally as much time in study outside of class, regardless of the length of the period. As a part of the present investigation an effort was made to determine the validity of this claim. To this end, 8,453 pupils in six senior high schools (two with short periods, 40 and 41 minutes in length, and four with long periods from 57 to 75 minutes long) were asked to indicate the subjects they take and the amount of time they spent in studying each subject at school and at home the day before making the report. The pupils were informed that the information they were supplying was being used in a study conducted by the United States Office of Education to determine the amount of time pupils spend

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on various subjects of the high-school curriculum. Emphasis was given to the fact that the information supplied was strictly confidential and that it would have no influence upon their marks. In interpreting the data reported below it is necessary to bear in mind that the materials on which they are based were obtained from six schools only. Although every effort was made to select schools which were similar except for the length of their class period, more data are necessary before the tendencies noted can be regarded as established for schools in general.

The average length of the working day worked out from the data reported by 8,453 pupils is 6 hours and 41 minutes. (See Table 36.) Considerably more than half of this time (3 hours and 50 minutes) is spent in class, and the remaining time, 2 hours and 51 minutes, is spent in study. The reports of pupils show that on the average they study 1 hour and 20 minutes at school and 1 hour and 31 minutes at home.

TABLE 36.—*Pupils' working day in schools classified according to the length of their class periods*

Item	Boys			Girls			Boys and girls		
	Schools with long periods	Schools with short periods	All schools	Schools with long periods	Schools with short periods	All schools	Schools with long periods	Schools with short periods	All schools
1	2	3	4	5	6	7	8	9	10
Number of schools.....	4	2	6	4	2	6	4	2	6
Number of pupils reporting time spent in study.....	1,686	2,251	3,937	1,879	2,637	4,516	3,565	4,888	8,453
Average number of minutes spent in class during school day.....	266.9	198.5	227.8	271.4	203.9	232.0	269.3	201.4	230.0
Average number of minutes spent in study at school.....	55.3	100.1	80.9	53.2	98.8	79.8	54.2	99.4	80.3
Average number of minutes spent in study at home.....	70.0	81.3	76.5	90.2	113.0	103.5	80.6	98.6	90.9
Average total number of minutes spent in study.....	125.3	181.4	157.4	143.4	211.8	183.3	134.8	198.0	171.2
Average number of minutes in pupils' working day (time spent in class plus time spent in study).....	392.2	379.9	385.2	414.8	415.7	415.3	404.1	399.4	401.2

In schools with short periods pupils spend less time in class, more time in study at school, and more time in study at home than do pupils in schools with long periods. In-

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other words, the data indicate that the longer the time pupils spend in class, the less time they spend in study outside of class. Undoubtedly this situation reflects the fact that in schools having longer periods the pupils are allowed time for study during the class period.

The data reported in Table 36 do not bear out the contention that long periods make the pupils' working day longer, for there is a difference of less than 5 minutes in the average length of the working day of pupils in schools with long and short periods. Although the length of the working day is similar in schools with long and short periods, the pupils in schools with long periods spend a much greater portion of their time in work under the direct supervision of their teachers than do pupils in schools with short periods.

Sex has a definite influence upon the length of the pupils' working day, for the working day of girls is approximately 30 minutes longer than that of boys. This difference consists largely in the greater amount of time which girls spend in study at home. Boys study at home an average of 76.5 minutes, whereas girls spend 103.5 minutes in study at home. These data have an interesting implication when the evidence of studies concerning the scholarship of boys and girls is considered. Such investigations agree in concluding that girls typically have marks superior to those of boys. The evidence reported in the present investigation suggests that the amount of time they spend in study may be an important factor in the superior scholarship of girls.

4. TIME PUPILS SPEND ON VARIOUS COURSES

The information pupils supplied regarding the amount of time they spend in study is of value not only in relation to the pupils' working day but also in relation to the amount of time pupils spend on individual subjects. Knowledge of the amount of time required by various courses should reveal whether certain subjects demand an undue amount of the pupils' time, while others require little time.

Computations on pupils' reports disclose that the various courses require an average amount of time ranging from 69 to 118 minutes a day. (See Table 37.) Such a range in-

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dicates that pupils are spending approximately 70 per cent more time in shorthand than in industrial arts, mechanical drawing, or typing. This fact raises the question as to whether the pupil should be granted as much credit for a course which requires 1 hour and 10 minutes of his time each day as for a course in which he finds it necessary to spend 2 hours a day. It is possible that study of time requirements of various subjects will suggest to some principals the possibility of adjusting such time requirements by means of changes in the class schedule.

A second factor to be considered in relation to the amount of time spent on various subjects is the influence of the length of periods on the amount of time required by various courses. The reports indicate that the length of the class period has no consistent influence upon the total amount of time spent in work on various courses. The length of time does, however, influence the way in which the pupils spend their time.

In schools with short periods the pupils spend more time at school and at home in studying the various subjects than do those in schools with long periods. The larger amount of time spent in study by pupils in schools with short periods is compensated for by the longer time spent in the classroom by pupils in schools with long periods. In the case of six subjects (bookkeeping, art, household arts, office management, mechanical drawing, and industrial arts) pupils in schools with short periods spend more time in class than those in schools with long periods. This situation is, of course, accounted for by the double periods taken for these subjects in schools with short periods. In each of these six courses the pupils in schools with short periods spend a greater amount of time than those in schools with long periods. This situation reflects the fact that pupils spend comparatively little time in studying these six courses outside of class.

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TABLE 37.—Average number of minutes per day required by various courses in schools classified according to the length of their class periods

Subject	Number of pupils in schools with—			Total minutes in study in schools with—			Minutes in class in schools with—			Total minutes spent in schools with—		
	Short periods	Long periods	Total	Short periods	Long periods	Total	Short periods	Long periods	Total	Short periods	Long periods	Total
Shorthand.....	1,000	505	1,514	86.8	41.0	71.6	60.4	58.5	46.4	127.2	99.5	118.0
Trigonometry.....	98	60	156	75.1	51.3	66.1	40.4	55.1	46.1	115.5	106.4	112.2
Latin IV.....	86	55	141	63.4	33.2	52.4	40.1	58.0	46.6	103.5	91.2	98.0
Bookkeeping.....	653	736	1,389	41.1	31.6	35.6	67.1	59.0	62.6	108.2	90.5	98.1
Latin II.....	844	411	1,255	52.8	41.2	46.5	40.2	59.9	50.9	98.0	101.1	97.4
Chemistry.....	564	451	1,015	48.8	30.1	40.4	56.4	57.8	57.0	105.2	87.9	97.4
History.....	2,308	2,345	4,653	57.1	35.2	46.1	40.5	58.7	49.7	97.6	93.9	96.8
Physics.....	351	319	670	47.5	37.8	38.1	58.7	58.6	57.6	104.2	96.4	96.7
Twelfth-grade English.....	1,257	862	2,119	57.0	34.9	48.0	40.5	58.0	47.6	97.5	92.9	94.6
Civics.....	1,338	84	1,422	47.9	36.2	49.3	40.7	63.7	45.3	88.6	113.9	94.6
German I.....	179	62	241	52.7	30.0	48.4	40.8	57.0	45.0	93.5	93.0	93.4
Plane geometry.....	1,008	697	1,705	48.7	40.6	43.8	40.5	58.7	49.1	87.2	90.3	92.9
Latin III.....	189	74	263	54.9	38.8	47.0	41.0	58.9	45.4	95.0	93.7	92.4
Sociology.....	196	144	342	49.9	30.9	44.4	41.0	57.6	48.0	90.9	94.5	92.4
French II.....	343	137	480	48.7	37.0	45.5	40.4	60.8	46.2	89.1	97.8	91.7
Algebra.....	934	614	1,548	45.8	37.8	42.6	40.2	59.0	47.7	88.0	94.8	90.8
Biology.....	1,185	911	2,096	40.1	28.0	32.7	46.8	57.8	57.2	96.9	80.8	89.9
Eleventh-grade English.....	1,257	1,251	2,508	49.0	30.4	40.9	40.5	58.2	48.2	89.6	88.6	88.1
French I.....	219	420	639	44.1	33.1	38.8	40.5	61.1	50.3	84.6	94.2	89.1
Commercial arithmetic.....	247	344	591	43.7	32.0	36.8	40.0	60.5	51.9	83.7	92.5	88.7
Spanish I.....	180	86	266	51.8	22.2	41.9	40.4	60.0	46.8	91.7	82.2	88.7
Tenth-grade English.....	1,967	1,443	3,410	47.0	30.6	40.1	40.5	58.4	48.1	87.5	89.0	88.2
Economics.....	1,800	1,154	2,954	60.8	23.3	41.5	40.5	58.7	46.7	103.1	91.3	88.2
Art.....	326	296	621	24.0	9.3	17.0	81.1	57.8	70.0	103.1	67.1	87.0
Household arts.....	362	357	719	23.3	21.5	22.4	71.2	57.8	64.5	94.5	79.3	86.9



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Letting I.....	117	120	237	54.9	18.3	36.4	40.4	58.4	49.5	96.3	76.7	85.9
Commercial law.....	278	129	404	44.2	19.4	36.3	40.4	61.1	47.0	84.6	80.5	83.3
General mathematics.....	197	178	375	44.9	21.3	33.7	40.9	58.7	49.4	80.8	80.0	83.1
Commercial geography.....	146	88	232	41.4	26.1	36.7	40.0	69.4	47.2	81.4	86.5	82.9
Office management.....	50	227	277	15.9	23.4	22.0	82.0	55.0	59.9	97.9	78.4	81.9
Solid geometry.....	69	129	198	40.1	19.9	28.9	40.4	59.2	52.7	80.5	79.1	79.6
Typing.....	981	629	1,590	31.0	13.7	24.2	48.4	58.4	47.5	71.4	72.1	71.7
Mechanical drawing.....	283	286	569	9.1	3.4	7.2	69.7	57.5	63.5	78.8	82.9	70.8
Industrial arts.....	216	364	570	3.1	3.3	4.5	77.0	57.3	64.7	80.1	62.6	69.2

* This table includes only data regarding subjects taken by at least 50 pupils in schools with long periods and also by at least 50 pupils in schools with short periods.

CHAPTER VII : SELECTED PRACTICES REPORTED
BY COOPERATING SCHOOLS

Study of the data reported by the selected schools cooperating in the present investigation reveals a number of practices which may be suggestive to principals who are planning registration and schedule making in their schools. The following practices have been reported to be successful in schools cooperating in the study:

PRELIMINARY REGISTRATION

(1) A large majority of the schools included in this study conduct a preliminary registration during which pupils report the subjects they wish to take during the following term of school.

(2) More than 85 per cent of the schools have preliminary registration before the close of school in June, and a number of schools hold this registration as early as 8 or 10 weeks before the end of the school year.

(3) A large number of schools use the home-room organization as the unit through which preliminary registration is conducted.

(4) The two score or more different items called for on the preliminary registration forms of the schools cooperating in this study show that these schools not only wish to know the subjects that pupils select but also other facts which relate to the election of courses. In other words, the information obtained from pupils at the time of preliminary registration indicates a close relationship between the guidance program and the conducting of preliminary registration.

(5) Among the uses made of preliminary registration data in the schools cooperating in this study are the following: Determining the number of teachers required, determining what courses are to be offered, and estimating the supplies needed during the following school year.

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(6) The selected schools included in this investigation report a number of means of giving guidance to pupils before they select the subjects they wish to take. Among the guidance activities used in various schools are the following: Conferences with pupils, conferences with parents, bulletins describing various courses, home-room discussions, talks by principals and teachers, and guidance classes.

FINAL REGISTRATION

(1) In approximately one-half of the schools included in the present investigation the subjects elected by the pupils at preliminary registration are arranged on his schedule without consulting him.

(2) A large majority of the schools equalize class sections at the time of final registration by tabulating the number of pupils assigned to each section.

MAKING THE SCHEDULE

(1) More than a fourth of the schools complete their schedules for the fall before the close of school in June. This makes it possible for programs of individual pupils (based on subjects elected at the time of preliminary registration) to be made during the summer.

(2) In many schools principals place at least a share of the responsibility for making the schedule upon persons in other positions. Among those who assist in schedule making are department heads, teachers, assistant principals, and clerks.

(3) A number of devices are reported to be helpful in making the schedule. Among these devices are the following: Using card-pocket devices with cards to represent class sections, using boards with movable blocks representing class sections, scheduling classes of seniors first, scheduling required subjects first, and scheduling the courses with one class section.

CHARACTERISTICS OF THE SCHEDULE

(1) A considerable number of the larger schools have two or more lunch periods in order to avoid congestion in the rooms provided for the pupils during their lunch hour.

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(2) A large majority of the schools cooperating in this investigation regularly set aside periods within the school day for one or more extracurriculum activities.

(3) A number of schools included in the present study have long class periods which encourage teachers to conduct supervised study.

