THE HORIZONTAL ORGANIZATION OF SECONDARY EDUCATION

BULLETIN, 1932, No. 17

MONOGRAPH No. 2

TED STATES DEPARTMENT OF THE INTERIOR
OFFICE OF EDUCATION

NATIONAL SURVEY OF SECONDARY EDUCATION

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UNITED STATES DEPARTMENT OF THE INTERIOR
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THE HORIZONTAL ORGANIZATION OF SECONDARY EDUCATION

BY

GRAYSON N. KEFAUVER
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NOTE

Grayson N. Kefauver, Victor H. Noll, and C. Elwood Drake are specialists in school organization of the NATIONAL SURVEY OF SECONDARY EDUCATION. *During the period of the Survey Doctor Kefauver, in addition, held a position as associate professor of education at Columbia University. 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., July 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 4 years ago took the lead in urging a study. It seeemd 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 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.

Study of horizontal organization of secondary education is concerned principally with two classes of education at that level. In the first place it deals with all types of specialized education, whether found in special curriculums such as college preparatory and industrial arts in comprehensive schools, or in special schools, each emphasizing academic work, commercial subjects, manual arts, trades, or some other field. In the second place it deals with part-time education exemplified in the continuation and evening school. In organizing the Survey data for publication it appeared advisable to deal with part-time education in a separate monograph (No. 3), and to reserve for the present monograph the data on comprehensive and specialized schools, specialized curriculums, the summer school, and correspondence instruction.

Since so much of the work in these types of schools and curriculums is of vocational nature, it follows that there is included considerable discussion of the vocational elements and the relationship of these important elements to the complete program of secondary education. There are to be found also extensive data on pupils and their characteristics, their intelligence, parentage and socio-economic status, educational choices and plans, attitudes, and vocational plans. Pupils and former students of 34 full-time schools of various types in 13 cities were studied.

The manuscript is an important one in the series of the National Survey of Secondary Education and I recommend that it be printed as a monograph of that series.

Respectfully submitted.

WM. JOHN COOPER,
Commissioner.

The SECRETARY OF THE INTERIOR.

THE HORIZONTAL ORGANIZATION OF SECONDARY EDUCATION

CHAPTER I : THE PROBLEM OF HORIZONTAL ORGANIZATION

1. THE DEFINITION OF HORIZONTAL ORGANIZATION

The enrollment in secondary schools has increased very rapidly during the past 25 years. Nearly four and one-half million pupils were enrolled in public secondary schools in 1930, whereas, as recently as 1880 there were only about 110,000. It is true that the total population has increased greatly, but the percentage of those of secondary-school age in public secondary schools in 1880 was less than 3, whereas in 1930 the corresponding percentage was almost 50. Similarly, in 1880 there were fewer than 2,500 public secondary schools reporting to the United States Office of Education, while in 1930 there were almost 25,000. Instead of an institution serving only a highly selected group, socially, economically, and intellectually, the secondary schools of today are serving more nearly all of the adolescent youth of the country than ever before in this or in any other country.

The pupils are much more varied now than formerly in abilities, interests, and needs. Many will go on to college, but most of them will go directly from the high school into the activities of the community. Some will enter the professions, but most will be distributed to the occupations below the professional level. The secondary-school population is still somewhat selected from the upper social, economic, and intellectual levels, but more of those from the lower levels are availing themselves of the opportunity for secondary education than ever before.

This extension of the diversity of the pupil population has brought about an expansion in the offerings of the school. Many non-college-preparatory subjects have been added to the program of studies to serve pupils not interested in the more academic subjects or without the ability to succeed

in them. As the program of the school has expanded, the different lines of education have been divided into curriculums, each representing a grouping of subjects preparatory for some line of activity. In some communities, the different sections of the program have been further divided by providing separate schools for each of the major divisions of the program. The college preparatory pupils may be enrolled in one school, the commercial pupils in another, the trade pupils in another, and the technical pupils in still another. Sometimes separate schools are also provided for the pupils who attend school on a part-time basis. Some of these part-time schools care for pupils only in the evening and others are day schools which are attended for only part time. The part-time units are treated in Monograph No. 3, Part-Time Secondary Schools.

The organization of secondary education to provide specialized training to serve specific needs, as well as opportunities for general education, can appropriately be referred to as *horizontal organization*, since it is concerned with the arrangement of the different divisions of the program at the same horizontal level. The relation of the specialized curriculums and schools to general education may be thought of as horizontal articulation. The horizontal organization may be contrasted with the vertical organization which refers to the organization of the educational units on different levels. The development of the junior high school and the junior college represents shifts in vertical organization.[1] Vertical articulation would be the relation of schools at the different levels to each other.

The horizontal organization of secondary education has been based largely on the vocational portions of the program. Many of the specialized curriculums in secondary schools are groupings of subjects preparatory for some occupation. Some are more specific than others but practically all have a vocational objective. The specialized schools have vocational labels, such as commercial, trade, technical, vocational, and academic. The academic curriculums and schools can safely be referred to as vocational for many pupils since this training

[1] A study of the vertical organization of secondary schools is reported as another project of this Survey under the title of "The Reorganization of Secondary Education."

usually represents the beginning of a more extended program of training for the professions. The subjects required for entrance to college are believed to be preparatory for the more advanced professional courses in the higher institutions. Therefore, the secondary courses might be considered as the first steps in professional (vocational) training.

An investigation of the horizontal organization of secondary education inevitably involves a consideration of vocational education. The specialized schools have been organized to provide better forms of vocational education. What types of vocational education have emerged under these different types of schools? What provisions are made for the non-vocational education of children in schools organized primarily to serve vocational ends? This essential tie-up of the investigations of horizontal organization and vocational education account for their inclusion together in this volume.

The change in pupil population of schools has been largely responsible for the horizontal expansion of the program of the secondary school. Also, the investigation of horizontal organization has involved a study of the pupils served by the different courses and schools. Consequently, many data have been gathered on the characteristics of the pupil population of secondary schools. These data will be presented in detail in connection with the treatment of the different courses and schools and in summary form with other information about pupils in Monograph No. 4, The Secondary-School Population.

8. MAJOR INVESTIGATIONS REPORTED IN THIS MONOGRAPH

The problems investigated and reported on in this monograph will be described in detail at the point of the reports of each investigation. Only brief reference will be made to them here to give an overview of the more detailed treatments which follow.

The issues involved in the horizontal organization of secondary education will be defined and the plan and procedure of investigation in the whole project will be presented later in the present chapter. In Chapter II will be presented a description of the different types of secondary schools and the programs that have been developed in them. This will

involve a study of the curriculums and courses offered, with illustrative curriculums from individual schools and systems. This analysis will be concerned primarily with the vocational sections of the programs of these schools, insofar as the different schools have been organized to serve vocational ends. Some attention will be given, however, to the nature of the offerings for achieving the more general objectives of secondary education. Cooperative courses have been developed in some schools in which experiences in schools are supplemented by experiences in occupations. These attempts will be described in Chapter III. The provisions for guidance in different types of schools will be analyzed and compared in Chapter IV. The possible influence which proximity of the schools to the homes of pupils has on the curriculums pursued by them in comprehensive and specialized high schools is investigated in Chapter V.

Different schools and curriculums have been provided to serve different types of pupils. What are the characteristics of the pupils served by these different provisions? Data on this subject will be presented in Chapter VI. The segregation of pupils is believed by some to have an undesirable effect on the attitudes of different groups of pupils toward each other. The results of an attempt to measure such attitudes of pupils in different types of schools will be given in Chapter VII. Further information on the effects of different types of organization will be given in Chapter VIII, where data will be presented on the subsequent educational and vocational activities of former pupils. To what extent do pupils who go through different types of school supplement this training with further schooling? To what extent do they enter the occupations for which they are trained in different types of schools and are there any contrasts in the vocational success of pupils with the different forms of training? These different types of data are intended to show the nature of the education provided in different types of secondary schools and to give some indication of their effectiveness.

Because the facts concerning the status of correspondence courses and summer high schools help to give an understanding of the complete array of types of educational opportunity

at the secondary levels, these are dealt with, respectively, in Chapters IX and X. The exposition is made in the present monograph even though the evidence concerning the provisions has less meaning for the articulation of general and specialized education than other chapters of the monograph.

3. SOME ISSUES INVOLVED IN HORIZONTAL ORGANIZATION

A statement of some of the issues involved in a consideration of different plans of organization of secondary education will help to define certain of the problems under investigation. These issues have been drawn from the literature on the organization of secondary education and vocational education, and from conferences by the present investigators with workers in different types of schools. Data have not been obtained on all the issues and those presented will not be adequate to settle finally the issues raised. They will throw some light on the different problems and demonstrate the need for objective evidence on issues now decided almost entirely on the basis of personal opinion. The following issues merit consideration in deciding on a plan of organization of secondary education.

(1) *How much importance should be attached to training for a vocation in secondary schools?*—Is it of major importance or of minor importance in comparison with the social, health, and recreational objectives? Is it desirable for the vocational activities to dominate the secondary-school program of pupils or should they be given a position of importance without permitting them to interfere seriously with the activities intended to attain the other objectives of the school? Some differences exist between the importance attached to the vocational objective by the proponents of comprehensive schools and of specialized vocational schools.

(2) *What should be the breadth of the vocational training offered in secondary schools?*—Is it desirable for pupils at this age to prepare intensively for some particular occupation? Some believe that vocational education is of little value unless such a high degree of mastery is obtained as is possible only under narrow specialization. Others believe that the variation in activities within an occupation, the amount of shift on the part of individuals, and the number of pupils who never

enter the occupation for which they are trained do not warrant such narrow specialization. Those favoring intensive specialized training tend also to favor the specialized vocational school because they believe that the form of training which they support can not be offered in a comprehensive school.

(3) *Should vocational subjects be taken by pupils along with other forms of training or should they be postponed until after other forms of training have been completed and taken just before leaving school?*—Some believe that general education only should be given until perhaps age 16 or even 18, this to be followed by a short period of intensive vocational training. The opponents of this belief contend that it is more desirable to have general and vocational education parallel one another over a longer period. They suggest that the presence of the vocational element in the secondary school causes pupils to recognize it in planning their educational program; that it causes some pupils who might otherwise drop out of school to remain; and that it makes possible exploration and modification of plans in the light of capacities and interests discovered in vocational courses.

(4) *What effect does segregation of pupils in specialized schools have on the social attitudes of these pupils?*—It has been said by those who do not favor the specialized schools that they breed class distinctions and prejudices between pupils in different schools. On the other hand, it has been suggested by those who do not favor the comprehensive school that the closer association of pupils in this type of organization make pupils more conscious of group differences than when they are segregated. If any type of school organization fosters and increases class differences, it handicaps integration of society through the schools.

(5) *Can the obstacles to effective use of programs of specialized schools be overcome by programs of guidance?*—The organization of separate specialized schools is said to erect certain barriers which must be overcome if the program is to function properly. Those mentioned are: (*a*) A tendency on the part of pupils to attend the school nearest their homes even though it does not offer the training they desire; (*b*) a tendency on the part of pupils to attend the high school in which their friends are enrolled or expect to enroll, in spite

of the fact that this particular school may not offer the type of training needed, or offer a less appropriate type of training than that given in another school; (*c*) a tendency for some pupils to attend the school having a higher social standing; (*d*) a tendency for pupils in a school to remain in a school in spite of a shift to a new vocational objective which could be better served in some other school. Certain of these barriers are claimed to exist in a smaller measure, and others not at all, in the comprehensive school, assuming that the latter provides all types of training for which there is demand. The issue revolves around the question of whether or not a program of guidance can be developed in the specialized schools that will function efficiently enough to overcome such barriers as arise from the segregation of pupils in different types of schools.

(6) *Is the attitude of the staffs of comprehensive high schools toward vocational education sufficiently negative to preclude the development of properly functional vocational programs in these schools?*—It is believed by many of those with strong enthusiasms for vocational education that the principals and most of the staff of comprehensive high schools are "academically minded" and that they attach little importance to practical forms of education. It is contended that such lack of interest in this work prevents the development of a proper program, and that the unfavorable attitude of the teachers also conditions unfavorably the attitude of pupils toward the vocational courses. This negative attitude is believed to discourage pupils from enrolling in vocational courses and to reduce the enthusiasm of those in the courses for their work. The importance attached to a subject by the specialists in that subject is usually greater than that accorded to it by the principal and by specialists in other fields, but such contrasts are believed to be greater for the vocational than for other subjects.

(7) *Which plan of organization is the more economical?*—The matter of cost is an important one. Where expensive equipment is required, economical administration requires as nearly continuous use of it as possible. It is desirable to eliminate unnecessary and costly duplication. It is claimed for the specialized schools that they meet these

desirable conditions much more adequately than comprehensive schools since it costs less to furnish one school with all necessary equipment than to equip several comprehensive schools. The answer to this question depends in part on the nature of the equipment which is considered essential for effective vocational training.

Other issues might be listed, but it is believed that these will help to define some of the more important phases of the problem under consideration. It is hoped that data presented in later chapters of the report will furnish not only a picture of present-day secondary schools and their pupil population, but also that some data will be given which will be of value in throwing some light on certain of the issues which have been described.

4. METHODS OF THE INVESTIGATION

The procedures used in the investigation reported in this monograph are essentially as follows:

1. *Extensive canvass by use of inquiry forms.*—The procedure here consisted of devising inquiry forms for different types of schools to obtain data on their programs, organization, enrollments, and related matters. Four such forms were prepared, one each for full-time schools, evening schools, part-time continuation and cooperative schools, and summer schools. The mailing lists for these were made up almost entirely from the returns of preliminary inquiries sent out in the early stages of the Survey to city superintendents of schools and high-school principals and from the directory of schools receiving Federal aid for vocational work as published by the Federal Board for Vocational Education. Additional names of schools were secured from statistical reports sent by schools to the Office of Education. The aim in making up these mailing lists was to locate as many as possible of the schools of the various types in the group for which each questionnaire was designed. The details of this matter will be presented at the appropriate points in subsequent portions of this report. These questionnaires were sent out early in the fall of 1930.

2. *Intensive study by visitation.*—In order to obtain certain data in addition to those obtained by the methods described

in paragraph 1, notably data from school records and from pupils, it was found desirable to visit certain selected cities and study their schools at first hand. The first task which presented itself was the selection of cities to visit. The primary consideration was, of course, that these cities should be representative of American secondary education. To secure a complete and exact representation was a practical impossibility. The only thing that could be done was to select the cities as carefully as possible, taking into account all known factors. Some of the more important of these were the type of program of secondary education which the city had developed, the breadth or scope of this program, the size of the city, the location of the city, and, of course, its desire or willingness to cooperate. In addition to the various inquiry forms already submitted by State departments of education, city superintendents, and individual schools (which provided a large amount of data for the selection of cities) another inquiry form was prepared and sent to all State departments of education. In this form the departments were requested to list the cities in their respective States that were doing outstanding work in vocational and industrial education, to check the types of organization included in each city system mentioned, and to check twice the ones that were doing particularly effective work. Replies were received from 40 State departments of education. Probably not many outstanding city systems were missed in the returns.

The request for information on cities that were doing outstanding work in vocational and industrial lines may appear to have overemphasized this phase of the study. As a matter of fact all types of organizations were listed in the check list except the strictly general and college preparatory, although not all were specifically mentioned. Those listed were comprehensive, technical, commercial, evening, continuation, and summer high schools, and part-time cooperative and trade schools. A city system could thus be checked as outstanding in vocational or industrial work and include one or all of these types of schools. It is believed that the selections of cities as finally made included representatives of some of the best of all types of secondary-school organizations and programs.

A total of 15 selected cities agreed to cooperate in this phase of the work. The cities and their populations for 1930 are: Bridgeport, Conn. (146,716); Springfield, Mass. (149,900) Winston-Salem, N.C. (75,274); Indianapolis, Ind. (364,161); Detroit, Mich. (1,568,662); Milwaukee (578,249), and La Crosse (39,614), Wis.; Joliet, Ill. (42,993); New Orleans, La. (458,762); Omaha, Nebr. (214,006); Tulsa, Okla. (141,258); Denver, Colo. (287,861); Los Angeles (1,238,048), Ontario (13,583), and Oakland (284,063), Calif. They represent all sections of the country except the extreme Northwest. The populations of these cities vary from 13,583 to 1,568,662. The three largest are Detroit, Los Angeles, and Milwaukee. All the others are less than 500,000. Eight are between 100,000 and 500,000. One is between 75,000 and 100,000. Three are below 50,000. Although no very small communities were included (the smallest was Ontario, Calif., with a population of more than 13,000) the group is otherwise fairly well distributed with respect to size of population.

These cities include all types of systems from that in which one comprehensive high school serves the entire community to that in which all types of training, such as commercial, technical, and trade, are given under separate organizations. They also include various combinations and modifications of the two extremes.

The visits to cities were made during the months of February, March, April, May, and June 1931. From 1 to 5 weeks were spent in each city. During this time all the data for this investigation were gathered except those collected by use of the preliminary inquiries, the check list to former pupils, and certain facts on the secondary-school population of Seattle and Bridgeport. In general the procedure in each city was as follows:

(1) The first step was to administer a check list designed to obtain a large amount of data on the characteristics of the pupil population. The sampling procedure followed will need some explanation.

In a few small schools the entire group of pupils was represented. In most schools the sampling procedure aimed to secure a large enough number of each group following a particular curriculum to make any results based on the data

from the sample representative of the entire group. For example, if only 35 pupils in the whole school were enrolled in household arts all of these would probably be included in the sampling. On the other hand, if 500 were enrolled in the general curriculum, perhaps only one fifth of the pupils or even less might be taken as a sample of this group. By thus sampling in varying proportions it was hoped to obtain adequate representation of pupils in all lines without getting the large numbers from certain groups and very small numbers from others that a constant proportion would give.

This method of sampling might be further clarified by comparisons with two other possible procedures. (*a*) The same number of pupils might have been taken from each school regardless of the size of its enrollment, thereby giving each school equal weight in the sampling. This plan would have ignored completely the variation in the size of schools. (*b*) The number from each school might have been made proportionate to the size of its enrollment. Proportionate representation would have made it possible for a school with a very large enrollment to influence the sampling of the schools of a certain type more than a number of smaller schools. Thus, a school of 5,000 would have a representation equal to that for 10 schools of an enrollment of 500. The smaller schools have a smaller number in the sampling than the larger schools, but the contrasts are not so great as would have been obtained if the representation had been made proportionate to the size of the enrollments.

The same general procedure was followed in determining the number of pupils to represent each subject field within a school. That is, the sampling did not include an equal number from each subject group; neither were the proportions from the various groups the same in every case. When the enrollment in a subject was small, most or all of the pupils were taken. When it was large, only a fraction of the group was included in the sample and the fraction became smaller as the size of the group increased.

The sampling could not be based on the number enrolled in each curriculum as some schools did not have specialized curriculums and still others did not have records of the curriculums followed by the pupils. Enrollments were available

for the different courses. By sampling the pupils enrolled in the courses in each of the various curriculums, a sampling was obtained of the pupils specializing in each curriculum.

While the plan used does not give a completely proportionate representative sampling of secondary-school population, it is probable that the combination of the schools into groups served to make the variation of percentage of representation for types of curriculums within groups of schools less than exists among curriculums within a single school. For example, in one school the pupils in auto mechanics might receive undue weighting when combined with those in carpentry. However, in a second school those in carpentry might receive as much excess weighting when combined with auto mechanics as the latter did in the first school. Then, when the pupils in these two lines of work, along with a large number of others in similar lines, are all combined into an industrial arts group for each school, and when all the industrial arts groups for the schools of a group, such as the comprehensive group, are also combined, it seems probable that the total will be a rather fair and adequate representation of pupils in this particular field of work. However, it should be recognized that curriculums with uniformly high enrollments in all schools do not have a representation in the sampling comparable to the numbers enrolled in them and that curriculums with uniformly small enrollments in all schools have larger representations than their enrollments would give them.

The filling out of check lists on pupil characteristics usually required a full hour. In addition there were a number of schools in which the same pupils filled out other materials, notably the student-opinions scale. This required at least 30 minutes more. The necessity of strict sampling should be apparent.

(2) The second step in the procedure was to arrange times and places for meeting the pupils to collect the data. In almost every case the pupils were called into the auditorium and the check lists administered by one or the other of the two field workers of this project. In a few cases they were administered by the principal or competent teachers.

(3) A check list was administered to the entire teaching and administrative staff of each full-time school visited. This will be described in a later chapter.

(4) A staff of clerical workers was set to the task of taking the data from the school records for the follow-up study of former pupils.

(5) In the full-time and the evening schools the teachers and department heads in certain applied fields were asked to give detailed information concerning the topics included, relative emphases given these topics, and the like in courses taught by them.

Some idea of the magnitude of the work may be gained from the statement that in the city of Detroit, which was the largest and which presented the greatest problems in organizing the work, the pupils in 5 full-time schools, 4 evening schools, and 4 continuation schools, were sampled, and filled out check lists. The work in this system involved a total of more than 3,000 pupils. In addition the staff check list and blanks on content of courses were administered in 7 schools and the data for the follow-up study were collected in 6 schools. A total time equivalent to the full time of one person for 5 weeks was spent in this city by the two field workers and in addition approximately 2 months of clerical service was required to complete the work of sampling and to collect the data for the follow-up study. No city, except Ontario and Oakland, Calif., required less than 1 week by one or the other of the investigators or less than 2 weeks of clerical assistance.

By the procedure outlined data were obtained which provide the basis, not only for a description of the organization and population of the various types of schools, but which also permits of some comparisons of the effectiveness of the programs in various forms of organization. In addition, it is the plan in presenting the data of this study to use those collected by mail from the various types of full-time high schools as a background of average or general practice in each case, against which to paint the picture of the selected schools studied through personal visitation. It will be possible to do this only with respect to the organizational aspects of the study, since data on population were obtained only through personal visitation. This plan of presentation is fully in accord with the general plan of the National Survey of Secondary Education.

CHAPTER II: PROGRAMS OF DIFFERENT TYPES OF SECONDARY SCHOOLS

1. PREVALENCE OF DIFFERENT TYPES OF SCHOOLS

Variety of types extant.—Other volumes of the report of the National Survey of Secondary Education will present data descriptive of the variation in the vertical organization of secondary education, showing the extent of the development of junior high schools, junior colleges, 6-year secondary schools, 4-4 organization of 8-year secondary schools, etc. There is also large variation in the type of schools set up to provide education on the senior high school level of secondary education. The variations consist, for the most part, in provisions for all forms of education in the same institution in contrast with provision of separate institutions for each type of training or combination of types. The comprehensive high schools include all forms of secondary training provided for a community or section of a larger community. Specialized secondary schools are limited in the scope of their offering and serve a somewhat homogeneous group of students drawn from a larger area than can be completely served by one school. These specialized schools are organized largely on the basis of a group of occupations for which pupils are preparing. The most common types of units are the comprehensive, academic, commercial, technical, trade, and general vocational high schools.

Prevalence of different types of organization.—It is not possible to report the number of schools of the different types in existence in the United States. The reports to the United States Office of Education do not contain this item of information. All of the schools of the country could not be reached in the present investigation. An attempt was made to locate the schools offering the various vocational courses. The list of schools approached was compiled from the list of the schools receiving Federal aid through the Federal Board for Vocational Education, the schools reporting courses in the vocational field, and the list of schools

obtained from a preliminary check list sent to superintendents of schools as part of the program of the National Survey of Secondary Education.

Inquiry forms were sent to 1,783 high schools. The blanks were returned for 994 schools (Table 1) which is 55.4 per cent of the number approached. All these schools were offering vocational training in one or more fields. About two-fifths of them received Federal aid for at least part of their work. The comprehensive type school predominated, about three-fourths of them being of this type. The type of school next in frequency is the academic school. Some of the schools labeled as academic might have been included with the comprehensive group but they were so labeled by the respondents and they offered few vocational subjects, most of which were in the commercial field. The trade school supported by Federal aid is the most common strictly vocational school. The commercial school and the technical school have approximately the same frequency. A negligible number of agricultural schools, State supported and controlled, were located by this canvass.

TABLE 1.—*Number of schools of each type included in the investigation*

Type of school	With Federal aid	Without Federal aid	Total
1	2	3	4
Comprehensive	293	467	760
Academic	[1] 15	90	105
Agricultural	[1] 9	.....	9
Commercial	.....	16	16
Technical	.....	17	17
Trade	87	.....	87
Total	404	590	994

[1] Because of small number of cases, few data are reported concerning this group in the following pages.

Geographical distribution of the different types of schools.—An analysis of the returns for the different sections of the country, reported in Table 2, discloses large differences in the distribution of the schools in the different sections. While there might be some variation in the selection represented in the returns, the distribution of the schools that returned the

check list can be accepted as roughly representative of the situation in the various sections of the country. The percentages for the trade schools is highest for the Northeast section (23.3 per cent) and decreases rapidly as one moves southward and westward. A small percentage of the returns for the West and Midwest are from trade schools. On the contrary, the percentages for the comprehensive schools are highest in the West and Middle West and lowest in the Northeast and Middle Atlantic States. The commercial and technical schools also appear mostly in the eastern section of the country.

TABLE 2.—*Percentages of the schools reporting from the different sections of the country that are of the various types*

Type of school	Northeast (90)	Middle Atlantic (236)	South (102)	Middle West (390)	West (176)	Total (994)
1	2	3	4	5	6	7
Comprehensive	61.1	61.4	75.5	82.5	91.5	76.5
Academic	2.2	16.6	16.0	9.8	6.2	10.6
Agricultural	1.1	0.4	1.0	1.5	.....	0.9
Commercial	5.6	3.0	1.0	0.5	0.6	1.6
Technical	6.7	2.5	2.0	0.8	.....	1.7
Trade	23.3	16.1	5.9	4.9	1.7	8.8
Total	100.1	100.0	100.4	100.0	100.0	100.1

NOTE.—The numbers in parentheses indicate the number of schools represented.

Size of the schools included in the investigation.—The schools included in the investigation are drawn more largely from the larger than from the smaller schools. While more than a fourth of them have enrollments of fewer than 250 (Table 3), well over three-fourths of the schools of the country fall in this group. Nearly a third have enrollments of more than 1,000. The comprehensive schools without Federal aid were larger than those with such aid. This fact may be explained in part by the practice of some of the largest cities in having a rather comprehensive program in the regular high schools without Federal aid and a central trade school subsidized by Federal funds. The trade schools have the smallest enrollments of the different groups of schools. Since the programs of these schools are relatively narrow, a satisfactory offering can be provided with a smaller number of students.

TABLE 3.—*Number of schools of different enrollments included in the investigation*

Type of school	Number of pupils					Total number of schools
	Fewer than 250	250–499	500–999	1,000 and more	Median	
1	2	3	4	5	6	7
Comprehensive school:						
With Federal aid	88	65	65	75	474.0	293
Without Federal aid	104	74	90	199	807.3	467
All	192	139	155	274	658.1	760
Academic school (without Federal aid)	33	12	13	32	500.0	90
Trade school (with Federal aid)	46	19	14	8	236.4	87
Total	271	170	182	314	574.5	937

Difficulty of classifying schools.—The secondary schools of the United States do not fall into clearly defined categories. One finds almost every variation in scope of offering. Trade schools exist separately and in combination with technical schools. Technical high schools, so-called, are frequently comprehensive schools. Academic schools usually have commercial work and they usually have a meager offering in home economics. They may even have a course or two in practical arts of a very elementary type. One has difficulty in deciding upon the amount of commercial and industrial offering to allow in the schools classified as academic schools, or the amount to require before designating a school as comprehensive. In the present study, schools were classified according to the statement of the respondent unless the nature of the program of the school showed the report to be clearly in error. The check list contained a list of the different types, and the respondents checked the type of school for which they were reporting. For the most part, this indication was accepted.

Problem of this chapter.—Different types of programs have been developed in different types of schools. However, there is much overlapping. We are chiefly concerned here with the vocational elements in the program, since it is because of the vocational training that the different specialized schools have been organized. What is the nature of the vocational offering and the general plan of administration in the comprehensive, academic, technical, commercial,

and trade schools? The program of the different types of schools have been analyzed in some detail and this chapter will be given to a presentation of those findings. It will not be the purpose here to attempt an evaluation of the offering. It must suffice to depict the nature of the offering and the administrative policies of the different types of schools. One can not say with certainty whether the plan of organization determined the form of the program or whether the form of the program desired determined the form of organization. At least, it is possible to define the characteristics of the programs of the different types of educational units.

2. STAFFS OF THE DIFFERENT TYPES OF SCHOOLS

Level of education of teachers in different types of schools.—The level of education of teachers might be shown in several ways. The two most commonly used methods are the degrees held and the number of years of schooling. The latter method was adopted as the more exact indication of the amount of education. The data reported in Table 4 show considerable variation among fields of teaching and among schools for each of the teaching fields. The data for all teachers in the last column of Table 4 show a variation from 6.8 years beyond the eighth grade for teachers of industrial subjects to 9 for teachers of the academic subjects.

TABLE 4.—*Median number of years of attendance in school above the eighth grade for teachers of the various subjects in the different types of schools*

Field of teaching	Type of school											
	Academic		General		Comprehensive		Vocational		Commercial		All	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
1	2	3	4	5	6	7	8	9	10	11	12	13
Academic	9.2	9.2	8.4	8.4	9.3	9.2	7.2	-----	9.2	9.2	9.0	9.0
Commercial	-----	-----	8.9	8.3	8.8	8.8	-----	7.1	9.0	8.2	8.3	8.3
Fine arts	-----	7.8	7.8	8.0	8.1	8.4	-----	7.8	-----	-----	7.3	8.1
Industrial arts	-----	-----	8.3	-----	7.5	-----	4.8	-----	-----	-----	6.8	-----
Home economics	-----	-----	-----	8.1	-----	8.5	-----	7.1	-----	-----	-----	8.1
Combinations	8.9	8.7	7.7	8.5	8.5	7.9	-----	8.0	8.9	9.5	8.7	8.4
Others	-----	9.3	9.3	8.4	8.2	8.4	7.3	7.4	-----	9.0	8.1	8.2
Number of teachers represented	91	198	163	332	605	659	209	784	72	104	1,143	1,477

The commercial teachers have less training than the academic group but more than the teachers of the fine and industrial arts. A similar variation among the teachers of the various subjects exists in each of the groups of schools. The academic teachers have the most training, the commercial teachers are second, and the industrial-arts teachers are lowest.

Because there are variations in educational levels of teachers of the various subjects, and the proportion of teachers handling each subject varies with type of school, it is necessary to compare teachers by subject groups when considering the educational level of teachers in different types of schools. The academic teachers in vocational schools are lowest in level of education in comparison with academic teachers in other types of schools. The next highest median number of years of schooling beyond the eighth grade exceeds it as much as 1.2 years. The commercial teachers in the vocational schools are also lower than the commercial teachers in other schools. The median number of years of schooling beyond the eighth grade for the commercial teachers in the vocational school is 7.1, while the next highest median is 8.2, which is for women in the commercial school. The differences between the commercial teachers in the other types of schools are not large.

The teachers of the fine arts do not present the same contrasts between the different types of school. The level of training of those in the vocational schools is about the same as those in the academic schools. For the teachers of industrial-arts and home-economics courses, the same contrasts exist as were pointed out for the academic and commercial subjects. In both cases, the teachers of the vocational schools have had less schooling than the teachers in the other schools.

Somewhat generally, then, teachers in the vocational schools have had less formal education than teachers of the same subjects in the other schools. Since the teachers of the vocational subjects have less schooling than the teachers of the academic subjects and the teachers of the vocational subjects exist in larger proportion in the vocational schools, the general educational level of the faculty of the vocational

schools is greatly below the educational level of the other types of schools. Reference is not made here to the specific preparation of teachers for the subjects they are handling, but to the educational level as indicated by the number of years they spent in school beyond the eighth grade.

Vocational experience of teachers.—The contrast in amount of education of teachers in the different types of schools is compensated for by differences in the amount of vocational experience other than teaching. The percentages of teachers with some vocational experience other than teaching is given in Table 5. Groups of schools low in general educational level tend to stand high in the proportion with vocational experience. Ninety-five per cent of the teachers of the vocational school reported some experience. The percentage next in size is 86 for the men in the commercial schools. Both of these percentages are considerably higher than those for the academic, general, and comprehensive schools. In all the types of schools, the percentages are considerably lower for the women than for the men. The percentages with vocational experience are highest for the industrial arts teachers, and the percentage for this group is highest for those in the vocational school. The commercial teachers in the different types of schools are more nearly equal in the amount of experience.

TABLE 5.—*Percentages of teachers with vocational experience other than teaching*

Field of teaching	Type of school									
	Academic		General		Comprehensive		Vocational		Commercial	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
1	2	3	4	5	6	7	8	9	10	11
Academic	69	42	72	41	69	32	86	------	78	38
Commercial	------	------	86	77	90	82	------	86	94	73
Fine arts	------	88	82	52	71	53	------	60	------	------
Industrial arts	------	------	86	------	94	------	98	------	------	------
Home economics	------	------	------	55	------	51	------	86	------	------
Combinations	100	36	63	62	95	50	96	48	77	16
Others	1	47	78	66	94	73	95	82	------	------
All teachers	76	50	76	52	71	46	96	63	86	58
Number of teachers represented	94	216	158	334	600	631	283	184	71	120

JUDGMENTS OF TEACHERS CONCERNING THE ORGANIZATION OF SECONDARY EDUCATION

Judgments of effectiveness of comprehensive and specialized schools for achieving all objectives.—Decision on the organization of secondary education should take into consideration all the objectives of the secondary school. If it is believed that one objective can be achieved more effectively under a certain plan of organization, decision should be made concerning the possibilities of achieving other objectives under that plan, and if it is not so efficient as some other plan in attaining other objectives, one must decide whether the gain in the achievement of the one objective more than makes up for the loss entailed in the failure to attain the other objectives. Judgments of teachers were obtained on the relative effectiveness of comprehensive and specialized high schools in achieving all the objectives of the secondary school and in achieving the objective of preparing pupils for vocational activities.

There is not general agreement among the different groups of teachers as to whether the comprehensive or the specialized secondary school is more effective in achieving all the different objectives. (See Table 6.) Teachers in the comprehensive schools tend to favor the comprehensive school and teachers in the specialized schools tend to favor the specialized schools. About a third of the teachers of vocational and commercial schools and slightly less than half of the teachers of the academic schools favor the comprehensive school in contrast with 68 per cent of the teachers of the general school and 80 per cent of those in the comprehensive school. Eight out of every ten teachers in the comprehensive school support the comprehensive school as a better type of organization while seven of every ten of the teachers of the vocational schools support the vocational school.

There is some difference between the judgments of the teachers of the various subjects within any one group of schools. The vocational teachers of the general school reacted more favorably to the comprehensive school than did the academic teachers. In the comprehensive school group, the percentage of teachers of industrial subjects favoring the comprehensive school was somewhat lower than that for the teachers of other subjects.

TABLE 6.—*Percentages of teachers who consider the comprehensive high school to be preferable to the specialized schools in achieving all objectives of the secondary school*

Type of school	Type of teacher	Per cent
1	2	3
Academic	Academic	42
General	do	63
	Commercial	76
	Industrial	86
	All teachers	68
Comprehensive	Academic	82
	Commercial	87
	Industrial	70
	All teachers	80
Commercial	Academic	39
	Commercial	42
	All teachers	38
Vocational	Academic	10
	Commercial	38
	Industrial	28
	All teachers	31
All schools	Academic	66
	Commercial	68
	Industrial	54
	All teachers	63

The tendency of the members of each group to support the type of institution in which they are working can not be explained with certainty. It may represent a natural human tendency to attach meaning to the program with which one is associated; it may reflect a loyalty to their institution causing them to report as they did even though their accurate judgments would be different; or it may indicate ignorance about the program in the units other than the one in which they are working. This summary of judgment does not carry one toward a solution of the question other than to show the extent of the conflict of judgment.

Judgments concerning effectiveness of different forms of vocational training.—The judgments concerning the effectiveness of different forms of vocational training are not so favorable to the comprehensive high school as the judgments considered in the preceding section. Of five forms of vocational training listed in Table 7, about a fourth of 2,738 teachers indicate a preference for the training offered in comprehensive high schools. This percentage is highest for the teachers in the general and comprehensive schools and lowest for those in the vocational schools. Roughly half of the commerical and industrial teachers of the general and comprehensive schools

prefer the comprehensive high-school program of training. The vocational school is favored by approximately four-tenths of the teachers in the vocational school; about a fifth of the industrial teachers in the general and comprehensive schools indicate a preference for the type of training offered in vocational schools. Training in a private vocational school received significant support only from commerical teachers. About a twelfth of them preferred such training. Cooperative part-time training received large support from all groups of teachers. In fact, a larger proportion of the teachers indicated preference for cooperative training than for any other type. Nearly half of the commercial teachers and nearly a third of the industrial teachers believed it to be the best form of vocational training. The percentages were almost uniformly high for the teachers in all types of schools. Actual experience on the job without the cooperative training arrangements was approved by a much smaller proportion of teachers. As in the attainment of all of the objectives of the secondary school, there is difference of judgment of teachers and the judgments vary somewhat with the type of institution in which respondents were working.

TABLE 7.—*Percentages of teachers who favor different forms of vocational training*

Form of training	Type of teacher	Type of school in which employed					Average for all teachers (2,738)
		Academic (310)	General (515)	Comprehensive (1,246)	Commercial (193)	Vocational (474)	
1	2	3	4	5	6	7	8
Training offered in comprehensive high school.	Commercial	6	43	57	17	5	26
	Industrial arts (men)		43	39		4	29
	All teachers	13	23	43	20	6	28
Training offered in vocational high school.	Commercial	33	12	6	31	28	22
	Industrial arts (men)		21	21		58	33
	All teachers	15	13	11	30	41	18
Training offered in private vocational school.	Commercial	13	6	4	11	8	8
	Industrial arts (men)			3		5	3
	All teachers	19	15	7	15	5	10
Cooperative part-time training.	Commercial	48	33	28	38	58	41
	Industrial arts (men)		29	32		28	30
	All teachers	40	37	33	32	41	36
Actual experience in job as training.	Commercial		6	6	3	2	3
	Industrial arts (men)		7	5		5	6
	All teachers	12	12	6	3	7	8

NOTE.—The numbers in parentheses indicate the number of teachers represented.

The foregoing data should be challenging to one who has strong convictions that some particular form of organization or some particular form of vocational training is the only form deserving of support. They show clearly the need of evaluative data to supplement the subjective estimates that have been presented. Some data bearing on the problem will be given in later chapters of this volume.

Judgments of teachers concerning certain issues in training for a vocation.—The variation in the judgments of teachers concerning the organization of secondary education is probably based on a difference in judgment concerning the importance of the different forms of education or differences in judgment as to the type of education needed. One of the justifications of the specialized schools by certain supporters of vocational education is the failure of the administrators and teachers of comprehensive schools to regard highly the nonacademic portions of the program of the school. They say that a program of vocational training is almost certain not to be successful if carried on under the control of unsympathetic administrators.

The importance attached to vocational education varies somewhat with school groups and with teachers of different subjects within a school. The mean judgments presented in Table 8 indicate that commercial teachers in commercial schools give the highest ratings and the commercial teachers in the academic schools give the lowest ratings. The ratings of the teachers in the vocational schools is below that of the teachers in the general and comprehensive schools. The industrial-arts teachers in the comprehensive school give vocational training a higher rating than the same teachers in the vocational school and the general high school. These differences are not large. It can be said with confidence, however, that the teachers of the comprehensive schools do not consider vocational training to be unimportant. These data would not deny the fact that some principals of comprehensive schools attach most significance to the more academic parts of the program and look with disdain on the vocational subjects as necessary evils to be tolerated but not to be stressed. This somewhat general canvass of the reactions of teachers indicates that this negative attitude is not universal.

TABLE 8.—*Average of judgments of teachers concerning the programs of secondary schools*

Judgment	Type of teacher	Type of school in which employed					Average for all teachers (2,738)
		Academic (310)	General (515)	Comprehensive (1,246)	Commercial (193)	Vocational (474)	
1	2	3	4	5	6	7	8
Importance of place of specialized vocational education. (This form of education is: 1, very important; 2, rather important; 3, slightly important; 4, no place.)	Commercial	1.50	1.33	1.31	1.23	1.42	1.31
	Industrial arts	------	1.71	1.46	------	1.65	1.55
	All teachers	1.69	1.58	1.42	1.28	1.59	1.50
Proportion of time that should be given to specialized vocational courses by students who will go directly to work (1, all; 2, a considerable part; 3, a small part; 4, none).	Commercial	2.17	2.07	2.05	1.89	1.89	2.00
	Industrial arts	------	2.00	1.90	------	1.88	1.89
	All teachers	2.17	2.18	2.05	1.94	1.95	2.05
Proportion of time that should be given to specialized vocational courses by students planning to enter college (1, a considerable part; 2, a small part; 3, none).	Commercial	2.09	2.09	2.06	2.08	1.96	2.07
	Industrial arts	------	1.93	1.89	------	2.02	1.94
	All teachers	2.26	1.89	2.07	2.17	2.03	2.08
Proportion of attention that should be given by high schools to a broad, general, social, and civic education (1, all; 2, a considerable part; 3, a small part; 4, none).	Commercial	2.09	1.94	2.00	1.97	2.04	1.99
	Industrial arts	------	2.00	2.07	------	1.95	2.02
	All teachers	1.98	1.93	1.99	1.99	1.96	2.22
Difficulty of vocational and academic courses (vocational courses are: 1, much more difficult; 2, somewhat more difficult; 3, of the same difficulty; 4, somewhat easier; 5, much easier).	Commercial	3.27	3.28	3.20	3.21	3.29	3.23
	Industrial arts	------	3.50	3.01	------	3.30	3.14
	All teachers	3.99	3.85	3.56	3.39	3.40	3.62

NOTE.—The numbers in parentheses indicate the number of teachers represented.

The differences between the judgments of workers in various types of secondary schools are sometimes to be explained by differences in judgment concerning the form vocational training should take rather than the importance of such training. The amount of time that should be given to the more strictly vocational subjects is one of the issues.

There are significant differences between the judgments of groups of teachers concerning this issue. The teachers of the commercial and vocational schools, on the average, would allow more time to the vocational subjects for students who go directly from the high school to work than the teachers in

other groups of schools. The data for the commercial teachers are in agreement with those just presented for the entire group of teachers in the different schools. The industrial-arts teachers in the comprehensive schools react practically the same as those in the vocational school. Most of these groups would agree that a considerable portion of the time of students who plan to go directly from the secondary school into occupations should be given to the more strictly vocational subjects.

There is less variation in judgment on the proportion of time that should be given to vocational subjects by pupils who plan to go to college. There is general agreement that less time should be given by college preparatory pupils than by pupils who will seek employment when they leave the secondary school.

Teachers were also asked to indicate the proportion of time they believed pupils should give to a broad, general, social, and civic education. The differences between the judgments of the different groups are not so large as those noted for vocational training and there is not the same consistency of difference between groups. Some individual teachers believed that these social objectives should receive all the attention of pupils, but on the average, it was believed that a considerable proportion of the time of pupils should be given to social training.

Another point of difference of judgment concerns the relative difficulty of academic and vocational subjects. Vocational teachers sometimes complain that pupils are transferred to their courses because of their failure in academic courses and that they are equally unable to succeed in vocational work. Industrial teachers are more disposed than the other groups of teachers to consider vocational courses equal in difficulty to the academic courses. In most of the groups, a larger proportion of the respondents indicated that they thought vocational subjects were equal in difficulty than indicated that the vocational subjects were easier. It will be noted in Table 8 that all the averages except two were nearer to 3 (indicating equal difficulty) than to 4 (indicating that vocational subjects are easier).

TABLE 9.—*Percentages of schools reporting use of different plans of organizations of the program of studies*

Type of school	Form of organization			
	Multiple-curriculum without electives	Multiple-curriculum with electives	Constants-with-variables	Other
1	2	3	4	5
Comprehensive school:				
Enrollment of fewer than 500	15.3	38.1	46.0	0.6
Enrollment 500 and more	10.1	49.5	37.7	2.7
All	12.4	44.5	41.3	1.8
Academic school:				
Enrollment of fewer than 500	20.5	25.6	53.8	.....
Enrollment 500 and more	2.5	45.0	50.0	2.5
All	11.4	35.4	51.9	1.3
Trade school:				
Enrollment of fewer than 500	51.7	43.1	3.4	1.7
Enrollment 500 and more	57.1	33.3	9.5	.....
All	53.2	40.5	5.1	1.3
Technical school	50.0	25.0	20.0	5.0
Commercial school	.....	80.0	20.0	.....

4. ADMINISTRATION OF THE PROGRAMS OF DIFFERENT TYPES OF SCHOOLS

Organization of the program of studies.—Programs of studies are generally organized in one of three ways. Certain subjects may be required of all pupils with pupils free to choose without restriction from the remainder of the offerings of the school to complete their programs. This plan is called the constants-with-variables plan. In other schools, the subjects are grouped into curriculums to meet the needs of pupils preparing for some one educational or vocational objective. There may be an automobile mechanics curriculum preparing for that field of work, a stenographic curriculum preparing for stenographic positions, and a college preparatory curriculum for those who plan to go on to college. These curriculum requirements may take up all the time of pupils and not leave any time for elective subjects, or they may utilize only part of the pupil's time and allow for election from the other subjects offered. The former plan of organization is called the multiple curriculum without electives and the latter the multiple curriculum with electives.

The practice in the organization of the program of studies varies considerably with type of school. The trade and the

technical schools follow the plan of multiple curriculum without electives much more frequently than the comprehensive and the academic schools. None of the commercial schools reported this type. The multiple curriculum with electives was reported by as many as 80 per cent of the commercial schools, a fourth of the technical schools, and approximately 40 per cent of the comprehensive, academic, and trade schools. The constants-with-variables plan of organization was used relatively infrequently (20 per cent) by the commercial and technical schools, a very small percentage (5.1) of the trade schools, half of the academic schools, and four-tenths of the comprehensive schools. The larger emphasis on the vocational objectives in the trade, technical, and commercial schools, and the smaller emphasis on the other objectives would lead one to expect them to make more use of the multiple-curriculum grouping of subjects, either with or without electives, preparatory for the different vocational fields, and less use of the constants-with-variables plan of organization. There is some difference between schools of different sizes, especially in the percentage of academic schools using the multiple curriculum without electives.

Schedule arrangements for courses.—The schedules of schools vary in the length of the class period, the number of periods in the school day, and the extent of the combination of periods. The different groups of schools vary in certain particulars; they follow similar practices in other respects. In the length of the class period, there is very little difference among the groups of schools. The median length of period in 892 schools reported in Table 10 is 45.2 minutes. The medians for the different groups of schools vary only from 43.5 to 49.9. There is still less variation at the twenty-fifth percentile position. At the seventy-fifth percentile, there is larger variation; the lowest is 46.7 and the highest 58.5. A considerable number of schools have adopted the hour period. It is probable that the hour period has been adopted more generally in the schools with the higher seventy-fifth percentile position.

There is practically no variation in the number of periods in the school day. (See Table 11.) The median number is 7 for all of the groups. The seventy-fifth percentile is 8 for

all the groups and 6 predominates for the twenty-fifth percentile position. On this point, the reports from the different groups of schools are similar.

TABLE 10.—*Numbers of schools with class periods of differing length*

Length of class period	Type of school							
	Comprehensive			Academic	Commercial	Technical	Trade	All types
	With Federal aid	Without Federal aid	Total					
1	2	3	4	5	6	7	8	9
90 and over	1		1				3	4
85–89								
80–84	1	1	2				1	3
75–79								
70–74	3	2	5					5
65–69	2	5	7	1				8
60–64	24	35	59	8			11	79
55–59	47	67	114	7	1	2	11	135
50–54	19	16	35	6	1	1	5	48
45–49	36	82	118	16	3	7	23	170
40–44	127	222	349	38	10	11	18	434
35–39	2		2	1	1	1	1	6
Total	262	430	692	77	16	22	73	892
Median	45.3	44.8	44.9	49.9	43.5	44.5	48.8	45.2
First quartile	42.5	42.4	42.5	47.4	41.5	42.0	44.8	42.5
Third quartile	56.3	55.2	55.7	57.3	46.7	48.2	58.5	55.4

TABLE 11.—*Numbers of schools with various number of periods in the school day*

Number of periods	Type of school							
	Comprehensive			Academic	Commercial	Technical	Trade	All types
	With Federal aid	Without Federal aid	Total					
1	2	3	4	5	6	7	8	9
12		3	3	2	2		1	8
11		7	7	1		1		9
10	5	9	14	1	1	2		18
9	30	39	69	4	1	1	7	82
8	88	116	204	19	1	5	13	252
7	53	118	171	27	6	3	12	220
6	64	118	182	18	5	9	11	226
5	17	26	43	4		1	2	50
4	2	1	3				5	9
Total	259	437	696	77	16	22	51	874
Median	7	7	7	7	7	7	7	7
First quartile	6	6	6	6	6	6	6	6
Third quartile	8	8	8	8	8	8	8	8

TABLE 12.—*Percentages of schools with different schedule arrangement for courses*

Schedule arrangement	Type of school							
	Comprehensive			Academic (90)	Commercial (16)	Technical (17)	Trade (87)	All types (985)
	With Federal aid (293)	Without Federal aid (467)	Total (760)					
1	3	3	4	5	6	7	8	9
All courses meet every day	52.6	45.8	48.4	51.1	56.3	52.9	37.9	48.2
All courses assigned a single class period	10.2	18.4	15.3	23.3	18.8	5.9	2.1	14.5
Certain classes assigned a double class period each day they meet	64.2	58.7	60.8	41.1	62.5	100.0	24.1	56.5
Certain classes assigned double periods on some days and single periods on others	55.6	53.5	54.3	50.0	18.8	64.7	18.4	50.5
Certain courses assigned a half day	48.1	2.8	20.3	4.4	.....	23.5	54.0	21.7

NOTE.—The numbers in parentheses indicate the number of schools represented.

Daily recitations are held in all subjects in nearly half of the schools represented in Table 12. The percentage for the trade school (37.9) is considerably lower than that for the other groups of schools. There is little variation among the other schools. Most of the schools combine the periods for some courses. Only 14.5 per cent of them reported that all the courses were handled in single periods. The percentage with all courses handled in single periods is as low as 2.1 for the trade school. This percentage is in marked contrast with the 23.3 per cent for the academic schools without Federal aid.

Double periods are used in more than half of the schools for some of the courses. The variation among groups of schools extends from about a fourth for the trade schools to all of the technical schools. Between these two extremes, the proportion is about two-thirds for the comprehensive schools and nearly a half for the academic schools. One finds also the combination of double periods on certain days and single periods on other days. This procedure is used in half of the schools. It appears much less frequently in the

commercial and trade schools than in the schools of the other groups. The trade schools more generally than the other schools reported schedule of courses for a half day. The proportion for the trade group is about a half while that for the entire group of schools is about a fifth. The federally aided comprehensive schools also report this practice with high frequency. These data on the schedule of classes disclose significant differences between the various groups of schools, although one might have expected larger differences between the schools with and without Federal aid in the use of the half-day assignments for the industrial courses.

Limitation of enrollment in vocational courses.—The distribution of workers in society constitutes one of the important functions of the school. Such distribution might be effected by providing pupils with knowledge of the opportunities so that they might choose lines of work in which there is a demand for their services. It might be more directly controlled by restricting the training opportunities to the approximate number that will be able to secure employment in the local community. Proponents of the direct control claim that such a program prevents many pupils from wasting their time in securing training they will not be able to use because of lack of opportunities for employment. Those who oppose such control contend that many of the pupils will secure employment in communities other than that in which they live as pupils and that pupils should have the right to train for the occupation of their choice even though they will have severe competition.

The policies followed in schools in respect to this issue are reported in Table 13. A third of the schools indicated no limitations of enrollment. This reply would indicate that the school has been able to provide training for all who desired to enroll in vocational courses and all who desired to enroll were admitted. The percentage reporting no limitations is smallest for the trade schools. As many as 10 per cent of the schools reported that the enrollments were limited to the opportunities for placement in the community. Limitation of this type was practiced especially by the trade schools, with 46 per cent reporting such limitation. In the great majority of schools there is no attempt to use direct

administrative control in the distribution of pupils to the occupations in the local community.

TABLE 13.—*Percentages of different types of schools following various policies concerning limitation of enrollments in vocational courses*

Policy	Type of school							
	Comprehensive			Academic [1] (90)	Commercial (16)	Technical [1] (17)	Trade (87)	All types (985)
	With Federal aid (293)	Without Federal aid (467)	Total (760)					
1	2	3	4	5	6	7	8	9
No limitation of enrollment	33.8	39.6	37.4	25.6	62.5	23.5	18.4	34.6
Enrollment limited to opportunities for placement in community	13.0	3.6	7.2	3.3	6.3	5.9	46.0	10.5
Enrollment limited to facilities for training	33.8	34.9	34.5	21.1	18.8	29.4	55.2	34.6
Enrollment limited to pupils qualified for training	32.1	12.6	20.1	2.2	25.0	11.8	55.2	21.5

[1] A considerable number of schools in these groups failed to indicate the nature of the limitation.

NOTE.—The numbers in parentheses indicate the number of schools represented.

Enrollment in vocational courses is limited also by the facilities for training. More than half of the trade schools reported this type of restriction. The extent of this restriction can not be determined by the data at hand. It is probable that added facilities would be provided if the demand should exist over a period of years, but until such facilities are available, administrators may be forced to restrict enrollment.

Restriction of enrollment to pupils qualified to profit from the training given was reported by a fifth of the schools. Slightly more than half of the trade schools reported this practice. The percentage following this practice is also high for the commercial schools and the federally aided comprehensive and academic schools. These data would suggest that the federally aided schools, more than the other groups, set the standards of the courses in harmony with the standards of the occupations for which they are training and admit to the courses only those pupils who are likely to be able to meet the occupational requirements.

Association of vocational and nonvocational pupils.—Some pupils enroll in vocational courses as part of their general program of education without plans to enter the occupation for which the courses prepare. Also, in one sense, any course of the high school may be considered vocational. In certain fields, some schools have differentiated the work for those definitely preparing for the occupation and for those not planning to use the training vocationally, so that the two groups of pupils are enrolled in separate classes. (See Table 14.) About a third of the 985 schools have the two groups in separate classes and the other two-thirds combine the different types of pupils in the same classes in vocational subjects. The percentage of schools with the two groups of pupils enrolled in separate classes is considerably larger in the federally aided schools.

TABLE 14.—*Percentages of schools of different types which use various plans of organization of classes for vocational and nonvocational pupils*

Basis of organization	Type of school							
	Comprehensive			Academic (90)	Commercial (16)	Technical (17)	Trade (87)	All types (985)
	With Federal aid (293)	Without Federal aid (467)	Total (760)					
1	2	3	4	5	6	7	8	9
Vocational and nonvocational pupils in separate classes in vocational subjects	50.6	17.7	30.3	14.0	11.1	28.6	75.8	31.9
Vocational and nonvocational pupils in same classes in vocational subjects	49.4	82.3	69.7	86.0	88.9	71.4	24.2	68.1
Vocational and nonvocational pupils in separate classes in nonvocational subjects	28.9	13.0	20.6	6.4	22.2	36.4	48.5	21.1
Vocational and nonvocational pupils in same classes in nonvocational subjects	43.8	71.3	59.0	89.4	77.8	54.5	36.4	59.8
Practice varies with nonvocational subjects	13.7	7.5	10.5	4.3	.....	9.1	9.1	9.9
Practice varies with type of vocational training	13.7	8.2	10.8	.....	.....	.....	6.1	9.2

NOTE.—The numbers in parentheses indicate the number of schools represented.

It is not entirely clear what meaning respondents from trade and commercial schools read into this particular question. Three-fourths of the trade schools and about a tenth of the commercial schools reported that they had vocational and nonvocational pupils in separate classes in vocational subjects. Since all the pupils in these schools are supposed to have the vocational objective, one would not expect to have the problem of relationship between vocational and nonvocational pupils appearing. Certain of the schools of the trade type have some pupils who do not measure up to the standards desired for the skilled trade work and they are sometimes put in separate shops with less difficult work assigned to them.

In addition to the division of pupils in the more strictly vocational subjects, pupils are also divided for the study of other subjects, such as mathematics, science, and social studies. Certain of the courses, especially mathematics and science, are applied to the problems of the occupation for which pupils are preparing, whereas, the content of the courses taken by other pupils is much less applied. The percentages of schools segregating pupils in nonvocational subjects varies with groups of schools in much the same way as the variations noted for the vocational subjects. The percentages are highest for the trade schools, technical schools, and the federally aided comprehensive and academic schools. In some schools, the practice of segregating the vocational and nonvocational subjects varies with the vocational field in which the pupil is working and also with the nature of the nonvocational subjects. That is, they may be divided in mathematics and science and combined in the same classes in the social studies. Or, pupils in industrial subjects may be segregated in science courses and the commercial pupils placed in the same science courses as the college preparatory pupils.

Nature of courses supported by Federal aid.—Throughout this discussion reference has been made to federally aided schools and schools not federally aided. Schools were in-

cluded in the federally aided group if one or more courses were subsidized by Federal aid. The number of courses supported by Federal aid varies from school to school, varying with the size and type of school. (See Table 15.) The median number of courses for trade schools is 4.7 while that for the comprehensive schools is 1.8. For each size group, the number of occupational fields supported by Federal aid is approximately three times as large for the trade school as for the comprehensive school. Since the number of occupational courses receiving Federal support varies so definitely with size of school, the fact that only a fraction of the pupils in a comprehensive school are in the vocational field and nearly all those attending trade schools are vocational pupils, this large difference in number for the various groups of schools is to be expected. Within the various groups of schools, there is large variation. One of the comprehensive high schools has as many as 12 lines of training; the proportion of schools with this number is much larger for the trade schools.

TABLE 15.—*Percentages of schools with Federal aid which received aid for different numbers of courses*

Number of courses for which Federal aid is received	Comprehensive schools			Trade schools			All schools (368)
	Fewer than 500 (180)	500 and more (133)	All (273)	Fewer than 500 (61)	500 and more (20)	All (81)	
1	2	3	4	5	6	7	8
12 and more		0.8	0.4	3.3	15.0	6.2	1.6
11					5.0	1.2	.3
10	0.7	.8	.7		5.0	1.2	.8
9		2.3	1.1	4.9		3.7	1.6
8	1.4	.8	1.1	11.5	20.0	13.6	3.8
7	.7	2.3	1.5	1.6	10.0	3.7	1.9
6		8.3	4.0	13.1	5.0	11.1	5.4
5	1.4	10.5	5.9	11.5	10.0	11.1	7.1
4	2.9	9.0	5.9	8.2	10.0	8.6	6.5
3	6.4	12.0	9.2	4.9		3.7	7.6
2	36.4	19.5	28.2	16.4		12.3	24.5
1	50.0	33.8	42.1	24.6	20.0	23.5	38.9
Median	1.5	2.3	1.8	4.0	7.0	4.7	2.0

NOTE.—The numbers in parentheses indicate the number of schools represented.

TABLE 16.—*Numbers and percentages of schools receiving Federal aid for trade courses preparatory for different vocations*

Vocation	Comprehensive schools		Trade schools	
	Number	Per cent	Number	Per cent
1	2	3	4	5
Aeronautics	3	1.0	1	1.1
Architecture	4	1.4	8	8.8
Auto mechanics	61	20.7	36	39.6
Bodybuilding	1	.3		
Bookbinding	1	.3		
Building trades			2	2.2
Cabinet making	7	2.4	2	2.2
Carpentry	13	4.4	16	17.6
Concrete	25	8.5	19	20.9
Drafting	1	.3		
Electricity	24	8.2	19	20.9
Engineering	42	14.3	33	36.3
Forge	1	.3		
Foundry	2	.7	1	1.1
Interior decorating	1	.3	2	2.2
Jewelry casemaking				
Linotyping			1	1.1
Lithography				
Machine drawing			1	1.1
Machine shop	1	.3	1	1.1
Masonry	67	22.8	36	39.6
Manual training			5	5.5
Metal trades	3	1.0		
Millinery	2	.7	1	1.1
Mining	3	1.0	6	6.6
Molding	1	.3		
Painting				
Pattern making	3	1.0	8	8.8
Pipe fitting	17	5.8	13	14.3
Plastering				
Plumbing			1	1.1
Power machine operation	6	2.0	11	12.1
Printing			5	5.5
Radio	43	14.6	29	31.9
Sheet metal			1	1.1
Shipbuilding	11	3.7	19	20.9
Shoemaking	1	.3		
Steam engines			4	4.4
Stone work			2	2.2
Tailoring	1	.3		
Textiles	1	.3	3	3.3
Trades			5	5.5
Upholstery	5	1.7		
Watchmaking			1	1.1
Welding			1	1.1
Woodwork (mill)	2	.7	3	3.3
Woodworking	2	.7	1	1.1
	13	4.4	12	13.2

The trade courses supported by Federal aid are listed in Table 16 with the proportion of comprehensive and trade schools offering each. In all cases, the percentages are considerably higher for the trade than for the comprehensive schools. The occupational fields most frequently supported by Federal aid are automobile mechanics, carpentry, electricity, machine shop, pattern making, printing, and sheet metal.

Credit allowed on apprentice period for training in school.—In the administration of programs of vocational education, arrangements are frequently made with organized labor to have somewhat uniform credit allowed for a year of study in school toward the attainment of full journeyman status. The amount of credit allowed varies with communities and it may vary with trades in any one community. On the average, the number of years allowed for each year of vocational training in school is greater for the trade than for the comprehensive school. (See Table 17.) The median for the trade group is 1.19 and that for the comprehensive school is 0.85. Twelve of the nineteen trade schools reported that one year of apprentice credit is allowed for each year in school. Two of the trade schools reported as much as two years of credit for each year in school. One comprehensive school reported as much as three years of credit for each year in school, but it is probable that this amount of credit is given for the completion of the full course offered by the school.

TABLE 17.—*Number of schools being allowed various numbers of years on apprentice period for each year of vocational training*

Number of years	Comprehensive school with Federal aid	Trade school with Federal aid	Total
1	2	3	4
3.0			
2.5	1		1
2.0			
1.5		2	2
1.0	1		1
0.5	4	12	16
0.25	5	4	9
	4	1	5
Total	15	19	34
Median	0.85	1.19	1.09

Efforts to relate vocational training to opportunities and conditions of work in the community.—The training of pupils for later vocational activities in the community requires close articulation with the conditions of work in the local community if the training given is to be of most value to pupils.

A variety of procedures have been adopted by schools to insure such articulation. (See Table 18.) The efforts involve assistance to pupils in making adjustments when they are first employed and utilization of judgments of employers and employees in developing the program of training. Considerable variation is noted in the extent of use of these different procedures.

TABLE 18.—*Percentages of schools making various efforts to relate vocational training to opportunities and conditions of work in the community*

Type of effort	Type of school							
	Comprehensive			Academic (90)	Commercial (16)	Technical (17)	Trade (87)	All schools (985)
	With Federal aid (293)	Without Federal aid (467)	All (760)					
1	2	3	4	5	6	7	8	9
1. Provide organized placement service	42.3	37.7	39.5	15.6	87.5	47.1	65.5	40.0
2. Provide follow-up of graduates after they enter occupations	35.5	28.9	31.4	12.2	56.3	35.3	71.3	33.6
3. Provide follow-up of pupils who leave before graduation	21.8	12.2	15.9	3.3	31.3	29.4	42.5	17.5
4. Make systematic study of success of former pupils	8.2	4.9	6.2	4.4	18.8	5.9	37.9	9.0
5. Make systematic analysis of activities carried on by employees in positions for which trained	3.8	3.0	3.3	2.2	6.3	.....	8.0	3.6
6. Secure judgment of employers on adequacy of training of pupils formerly employed	45.1	33.4	37.9	13.3	43.8	35.3	69.0	38.1
7. Secure judgment of employers on nature of training need for positions	39.9	29.6	33.6	12.2	43.8	23.5	69.0	34.3
8. Secure judgment of employees on nature of training needed for occupations	25.	19.1	22.6	11.1	43.8	5.9	59.8	25.0
9. Have permanent advisory committees	16.	9.0	11.8	6.7	31.3	11.8	55.2	15.4
10. Provide cooperative part-time training	18.4	4.1	9.6	1.1	12.5	.....	26.4	10.6

NOTE.—The numbers in parentheses indicate the number of schools represented.

Systematic attempts are made to secure employment for pupils when they leave school in nearly half of the schools. The academic schools report such practice less frequently,

probably because a much smaller proportion of the pupils of these schools go directly from school to employment. Four-tenths of the comprehensive schools provide for placement. A much larger proportion of the commercial and trade schools indicated that they had systematic placement service. The specialized schools exist in larger communities where programs of guidance are more frequently available. However, it might be expected that schools giving full attention to vocational training would be more concerned with placing pupils in vocations when they leave school. One can not help being impressed with the large proportion of schools failing to indicate that they provided an organized placement service. Nearly as large a proportion reported that they follow up their graduates after they enter an occupation as reported they had organized placement service. The different groups of schools have about the same relationship toward each other in extent of follow-up as was true for the placement service except that fewer commercial schools reported a follow-up service and a larger proportion of the trade schools indicated that they followed their graduates. The percentages for the comprehensive schools are distinctly lower than those for the commercial and trade schools, and about the same as for the technical schools. Pupils who leave school before graduating do not receive the same consideration as is accorded those who complete the program of training. The percentage of schools reporting a follow-up service is only half as large for pupils who leave before graduation as the percentage reporting such service for their graduates. The trade, technical, and commercial schools more commonly follow the nongraduates into their occupations than do the comprehensive and academic schools.

Systematic studies of the success of former pupils and the activities of former pupils in the occupations which they enter were reported by a very small proportion of schools. Less than a tenth of the schools indicated they made a systematic study of the success of former pupils. The percentages were much higher for the trade schools (37.9) and the commercial schools (18.8). Only 6.7 per cent of the comprehensive schools reported such a check-up on the vocational training they provided. Data concerning the success of former

pupils would be generally accepted as the most significant data in determining the appropriateness of a program of training. These data would indicate that few of these schools are systematically securing information on the effectiveness of the training as shown by the success of those who have had such training.

An even smaller proportion of the schools reported having made a systematic analysis of the activities carried on by employees in positions for which they were trained in school. Less than 4 per cent of the schools reported having made such an analysis and the 8 per cent for the trade schools was the highest percentage for any group. The contents of the various vocational courses are determined by the teachers of the courses on the basis of their own judgment, supplemented in some schools by judgments of employers.

Judgments of employers were obtained in a considerable proportion of the schools. More than a third of the schools reported having secured judgments of employers on the adequacy of the training of former pupils. The percentage is as high as 69 for the trade schools and as low as 13.3 for the academic schools. The technical schools and the comprehensive schools reported this practice in about the same proportions. Judgments of employers as to the training needed by persons entering their employ was secured by about the same proportion of schools as indicated above for judgments of adequacy of training of former pupils. The relative standing of the various groups is similar to that noted for the report of use of judgments on adequacy of training of pupils.

Not only are judgments of training needed for occupations secured from employers, but the workers themselves also are approached for a report of the activities they carry on and judgment of the training needed for carrying on such activities. A fourth of the 985 schools canvassed reported using judgments of employees on nature of training needed. Such judgments were reported most frequently by the trade schools (59.8 per cent), next in frequency by commercial schools (43.8 per cent), and third in frequency (22.6 per cent) by the comprehensive schools. The academic schools reported this practice still less frequently. Of the comprehensive

schools, the federally aided schools reported having used such data with greater frequency than those without Federal aid.

In order that the cooperation of employers and employees might be sustained over a period of years, a considerable number of schools have permanent advisory committees. These committees, composed of employers, or employers and employees, give judgments as to the adequacy of existing programs of training, suggest desirable changes in the program of training, etc. About a sixth of the schools reported have such committees. The percentages are much higher for the trade schools (55.2) and for the commercial schools (31.3). Permanent arrangements for cooperation of persons training and persons employing workers would appear to be desirable to further the articulation of the training program with the demands of employment.

The trade and the commercial schools give evidence of greater effort to relate the vocational training given to the opportunities and conditions of work in the community. Of the two groups of vocational schools, the percentages are uniformly higher for the trade schools. The percentages for the technical schools are more nearly like those for the comprehensive schools. Of the comprehensive schools, a larger proportion of the federally aided schools reported having used the various procedures for articulating the training with occupational demands.

5. THE PROGRAMS OF DIFFERENT TYPES OF SCHOOLS

Offerings in industrial subjects.—Most secondary schools have shop courses of some type. Some have a variety of types of shop work while others have concentrated on a small number of shop activities. Some of the very large trade schools provide training in a great variety of types of work. All the subjects listed in Table 19 appear in at least some of the comprehensive and trade schools, although the proportion of schools having each line of work is for the most part larger for the trade and technical schools than for the comprehensive and academic schools. Certain lines of work dominate in the offerings of these schools. Those appearing most frequently are woodwork (bench), mechanical drafting,

machine shop, electricity, automobile mechanics, printing, and sheet metal. Patternmaking has a high frequency for the technical schools. Some subjects appear only in certain types of schools. Power-machine operation and upholstering appeared only in trade and technical schools, and painting and plumbing and masonry appeared in significant proportions in the trade schools only.

TABLE 19.—*Percentages of schools offering various industrial subjects*

Subject	Comprehensive schools				Academic schools (90)	Trade schools				Technical schools (17)
	Fewer than 250 (192)	250–499 (139)	500 and more (429)	Total (760)		Fewer than 250 (46)	250–499 (19)	500 and more (22)	Total (87)	
1	2	3	4	5	6	7	8	9	10	11
Architectural drawing	0.5	2.2	7.0	4.5						
Automobile mechanics	12.0	26.6	32.4	26.3	12.2	30.4	5.3	22.7	6.9	17.6
Blacksmithing	.5		.2	.3			31.6	59.1	37.9	23.5
Boatbuilding			.9	.5		2.2	5.3	18.2	6.9	
Bookbinding		5.0	.7	1.3	1.1					5.9
Building trades			.9	.5		4.3			2.3	5.9
Cabinetmaking	.5	1.4	2.8	2.0		6.5		18.2	8.0	23.4
Carpentry	11.5	15.8	21.0	17.6	10.0	34.8	36.9	31.8	34.5	35.3
Electricity	5.7	12.9	29.6	20.5	12.2	32.6	26.3	54.5	36.8	64.7
Forge	.5	.7	4.2	2.6		2.2		4.5	2.3	41.2
Foundry			2.8	1.6		2.2		4.5	2.3	23.5
General shop	1.6	3.6	1.2	1.7	1.1					
Machine shop	7.8	27.3	45.7	32.8	14.4	37.0	36.9	54.5	41.4	64.7
Manual training	1.0		.7	.7	1.1					
Masonry	.5		.9	.7	1.1	2.2	10.5	22.7	9.2	
Mechanical drafting	35.4	59.7	77.4	63.5	47.8	34.8	26.3	68.2	41.4	64.7
Painting			1.9	1.1		10.9	5.3	22.7	11.5	
Patter making	.5	.7	8.9	5.3		4.3	31.6	27.3	16.1	41.2
Plumbing	1.0		1.6	1.2		8.7	21.1	27.3	16.1	
Power machine							26.3	9.1	8.0	
Printing	5.2	12.9	38.5	25.4	22.2	23.9	21.1	63.6	34.5	35.3
Radio			.7	.4	1.1		5.3	4.5	2.3	5.9
Sheetmetal	6.2	12.9	18.4	14.3	13.3	21.7	26.3	45.5	32.2	52.9
Shoemaking	1.0	1.4	.2	.7		2.2	5.3	4.5	3.4	
Upholstery							5.3	9.1	3.4	5.9
Welding		.7	.9	.7			5.3	18.2	5.7	5.9
Woodwork (bench)	48.4	72.7	66.4	63.0		37.0	26.3	36.4	34.5	64.7
Woodwork (mill)	5.2	14.4	19.6	15.0		17.4	21.1	27.3	20.7	5.9

NOTE.—The numbers in parentheses indicate the number of schools represented.

The smallness of the percentages of schools with the different courses may be explained in several ways. Many of the schools offer training in only a few lines of work, making the choice of field of training on the basis of local opportunity for employment and interests of pupils. Also, some lines of work appear under a number of titles. Woodwork (bench) and cabinetmaking might have been combined, since the

work is much the same. It is doubtless true also that some of the returns were not complete; that is, respondents failed to report all the subjects included in their programs. This error, insofar as it exists, would serve to reduce the percentages. However, it would probably affect the percentages for the different types of schools to about the same amount and not disturb seriously the relationship among the different groups of schools.

TABLE 20.—*Mean number of units of work offered in the various industrial subjects*

Subject	Comprehensive schools				Trade schools				Technical schools	Academic schools
	Fewer than 250	250–499	500 and more	Total	Fewer than 250	250–499	500 and more	Total		
1	2	3	4	5	6	7	8	9	10	11
Architectural drawing	0.5	0.8	1.5	1.7	.....	3.0	2.3	2.4	2.7	.....
Automobile mechanics	1.6	1.8	1.9	1.9	2.8	2.2	2.8	2.7	3.8	1.5
Blacksmithing	3.0	.....	1.0	2.0	.....	.....	.....	.....	.....	.....
Boatbuilding	.....	.....	2.0	2.0	2.0	2.0	1.1	1.4	.....	.....
Bookbinding	.....	1.1	.8	1.0	.....	.....	.....	.....	4.0	2.0
Building trades	.....	.....	3.5	3.5	1.5	.....	.....	1.5	2.0	.....
Cabinetmaking	4.0	4.0	2.3	2.7	2.7	.....	3.0	2.9	2.8	.....
Carpentry	1.7	1.3	2.3	2.0	2.6	2.3	2.6	2.5	2.7	1.1
Electricity	1.2	1.5	2.2	2.0	2.4	2.5	2.7	2.5	3.2	.9
Forge	1.0	1.0	.6	.7	.5	.....	2.0	1.3	1.5	.....
Foundry	.....	.....	1.3	1.3	3.0	.....	2.0	2.5	1.0	.....
General shop	2.7	1.9	1.6	2.0	.....	.....	.....	.....	.....	3.5
Machine shop	2.0	2.0	2.2	2.1	2.8	2.6	2.8	2.7	2.6	1.6
Manual training	2.0	.....	3.3	2.8	.....	.....	.....	.....	.....	6.0
Masonry	2.0	.....	2.5	2.8	2.0	3.0	3.2	2.8	.....	2.0
Mechanical drafting	1.7	2.2	2.7	2.5	2.6	2.4	2.7	2.6	3.7	2.0
Painting	.....	.....	2.1	2.3	2.6	3.0	3.0	2.7	.....	.....
Patternmaking	3.0	.5	2.1	2.0	2.5	2.7	3.0	2.8	1.9	.....
Plumbing	2.5	.....	2.5	2.5	2.8	2.5	2.8	2.7	.....	.....
Printing	2.4	2.3	2.3	2.6	2.9	2.8	2.9	2.9	3.8	2.0
Radio	.....	.....	1.7	1.7	.....	2.0	2.0	2.0	1.0	1.0
Sheetmetal	1.8	1.6	1.6	1.6	3.2	2.8	3.0	3.1	1.2	1.2
Shoemaking	2.5	2.0	3.0	2.4	3.0	2.0	2.0	2.3	.....	.....
Welding	.....	3.0	1.3	1.6	.....	2.0	2.8	2.6	.5	.....
Woodwork (bench)	1.9	2.1	2.1	3.0	2.9	2.6	2.8	2.7	2.1	2.0
Woodwork (mill)	2.2	2.0	1.7	1.8	2.3	2.5	3.0	2.6	2.0	1.2

The amount of work offered in the different fields is another important consideration. The unit in Table 20 refers to the number of years of work made available. In the comprehensive school, there is a general tendency for the larger schools to offer more years of work than is true for the schools of smaller enrollments. There is no such increase for trade schools; that is, the means of the number of years

of work offered are equally large for the schools of smaller and larger enrollments. Schools offering the different courses do not vary greatly in the number of years of work given. There is a general tendency for the trade school to offer a larger number of years of work than the comprehensive school. The technical schools with the 4-year course frequently have more years of work than the trade schools, although the pupils in the trade schools spend more time in the shop during any school year. In general, the academic schools offer fewer units of work. This is in keeping with the general policy of this type of school not to stress specialization in vocational lines of training.

Vocational industrial education and industrial arts.—The contrast between industrial-arts and vocational-industrial education has been an item of discussion for some years. The former has been interpreted to refer to the form of training which serves the needs of general education with some contribution (judgments differ as to amount) to vocational training, while the latter has been exclusively concerned with vocational preparation. One of the projects of the present investigation called for a detailed analysis of the content and methods of representative offerings of the two types to define the characteristics of each. The time and funds available did not prove adequate to make a complete study and the efforts put forth were not entirely successful. Inquiry concerning the nature of the two types of courses was made in conferences with teachers and administrators of the schools visited by the staff of the Survey concerned with this project.

The differences between the two types of work have been discussed by Proffitt.

> The definite and clear-cut declaration that vocational-industrial education is for the specific purpose of providing efficient training for employment in some definite occupation in the field of trades and industries has left to industrial arts education all training of an industrial character that has as its aim the realization of general education objectives. It has also eliminated from the industrial arts work all training that is specifically for employment purposes. Regardless of how much these distinctions may be confused in practice, the principle of differentiation remains true. Courses offered with assumed mixed objectives have resulted in inefficient programs that are neither good industrial arts nor good vocational industrial work. Training which

will give the best results for general education purposes—that is, for the purpose of exploration, for the development of general intelligence, and for the intelligent use of industrial products and services—is not effective preparation for employment in productive work in the trades and industries; neither is shop work given in accordance with a bona fide vocational objective suitable for realizing general education objectives in the industrial arts. The failure to organize industrial arts courses strictly in accordance with general-education objectives results in a large factor of waste, both in time and money. Some progress was made during the past 2 years in organizing industrial arts courses for the purpose of realizing specific objectives. An example of this is the rather general attempt to organize the work in the junior high school grades so as to meet the needs of general education for exploration in manipulative work in common construction material with commonly used tools. The tendency, therefore, is to require all boys at some time in their junior high school course to take work in the industrial arts.[1]

Proffitt did not define the differences between the work done in the two types of courses that would cause one to be almost exclusively vocational and the other cultural with little or no vocational significance.

Several differences between industrial arts and the vocational courses may be noted. The statements do not cover all differences, but at least the more important are included. In the first place, a larger proportion of the time of the pupil is given to work in the shop. In addition, the study of mathematics, science, drawing, and other related subjects are directly shaped to serve the vocational objective. There is consequently less attention to the other objectives of education. The teachers of vocational courses are more frequently experienced workers in the trades in which they are teaching. A much larger proportion of the pupils enrolled in the vocational courses have definite vocational ambitions in the field in which they are receiving training. There is also a difference in the intensity and thoroughness with which the different problems are treated. In the vocational courses, more time is usually spent on the different elements so that a higher degree of skill and understanding is secured by the pupil.

There is a belief on the part of some workers in secondary schools that the so-called industrial arts courses are without

[1] Proffitt, Maris M. Industrial Education. Ch. IV of Office of Education Bulletin, 1931, No. 20, Biennial Survey of Education, 1928-1930. pp. 18-19.

significance for vocational preparation. There are others who believe that it is better for an individual to continue his shop work over a period of years with consideration given at the same time to other lines of training. It is true that many pupils who take the industrial arts courses later enter related occupations and are helped in their start in them. There is little doubt that if an individual enters an occupation for which he secures training, a year of the intensive training in vocational courses will equip him better than the smaller amount of work in the industrial arts courses. The appropriate place of the two types of training has not been clearly defined and accepted by workers in secondary schools. An adequate answer can be secured only by the accumulation of much evidence concerning pupils who have had each type of training.

Increase in enrollment in industrial subjects.—The enrollment in industrial subjects has increased greatly during the past decade. Part of this increase may be explained by the increase in the total enrollment of secondary schools, but there has been increase in the proportion of pupils enrolled in these subjects. Jessen reported a comparison of the percentages of 609,893 pupils in nine States enrolled in various high-school subjects in 1922 and 1928. The percentage for printing increased from 0.22 to 1.14 and that for mechanical drawing increased from 3.12 to 8.39. The percentage of pupils enrolled in manual training remained constant, the percentage for 1922 being 12.67, and for 1928, 12.68.[2] The enrollment in vocational courses during the period 1918–1932 has been reported by the Federal Board for Vocational Education.[3] The enrollment, including both courses with and without Federal aid, increased from 117,934 in 1918, to 537,738 in 1925, 633,153 in 1930, and decreased to 579,591 in 1932. Of the total of 579,591 reported for 1932, 103,595 were in all-day schools, 316,937 were in part-time schools, and 159,059 were in evening schools. Most of the pupils here reported (560,150) were enrolled in federally aided schools. These figures do not include the pupils en-

[2] Jessen, Carl A. Secondary Education. Ch. VI of the Office of Education Bulletin, 1930, No. 16, Biennial Survey of Education, 1926–1928. p. 159.
[3] Sixteenth Annual Report of the Federal Board for Vocational Education, 1932. p. 5.

rolled in the different industrial arts courses. All the data indicate an increase in the proportion of pupils who enroll in industrial courses.

Sample programs in the industrial arts.—The different types of industrial courses may be presented by reproducing illustrative programs in schools of different types. In the Manual Arts High School in Los Angeles, industrial arts curriculums are provided in automobile and aviation industries, building industry, electricity, mechanic arts, and printing. Vocational trade courses are offered in all shops listed in industrial courses and in other fields noted in the statement reproduced below.

Industrial Arts Curriculum in Automobile and Aviation Industries

The courses in motors, ignition, sheet metal, acetylene welding, wood shop, foundry, and machine shop are basic for both the automobile and aviation industries. Students may specialize in any shop desired.

Grade X

	Periods
1. English	5
2. Applied mathematics or geometry	5
3. Motor shop	10
4. Foundry, forge, sheet metal, or wood shop	10

Grade XI

1. American history	5
2. Mechanical drawing (M5–6)	10
3. Electric ignition (20 weeks), acetylene welding (20 weeks)	10
4. Sheet metal (20 weeks), advanced motor shop (20 weeks)	10

Grade XII

1. English	5
2. Laboratory science	7
3. Civics (20 weeks), shop management (20 weeks)	5
4. Machine shop (20 weeks), advanced motor shop (20 weeks)	10

Industrial Arts Curriculum in Building Industry

This course prepares for building trades, architectural drawing, and building-material salesman.

Grade X

	Periods
1. English	5
2. Applied mathematics	5
3. Cabinet shop	10
4. Architectural drawing	10

INDUSTRIAL ARTS CURRICULUM IN BUILDING INDUSTRY—Continued

Grade XI

	Periods
1. American history	5
2. Architectural drawing	10
3. Sheet metal (20 weeks), mill work (20 weeks)	10
4. Electricity (20 weeks), electricity and inside wiring (20 weeks)	10

Grade XII

1. English	5
2. Laboratory science	7
3. Civics (20 weeks), shop management (20 weeks)	5
4. Carpentry	10

INDUSTRIAL ARTS CURRICULUM IN ELECTRICITY

This course prepares for care of motors, inside wiring, electric ignition, starting and lighting, battery work, armature winding, designing, and salesmanship.

Grade X

	Periods
1. English	5
2. Applied mathematics or geometry	5
3. Electricity	10
4. Biology 7, foreign language 5, mechanical drawing or shop (forge or sheet metal)	10

Grade XI

1. American history	5
2. Electricity	10
3. Physics 7, machine or auto shop	10
4. Mechanical or architectural drawing 10, or advanced mathematics 5, or foreign language	5

Grade XII

1. English	5
2. Chemistry	7
3. Electric ignition or electric inside wiring	10
4. Civics (20 weeks), economics, salesmanship, or shop management (20 weeks)	5

INDUSTRIAL ARTS CURRICULUM IN MECHANIC ARTS

This course prepares student to make rapid progress as apprentice machinist, designer, machinery salesman, or shop executive.

Grade X

	Periods
1. English	5
2. Applied mathematics or geometry	5
3. Mechanical drawing	10
4. Forge or foundry (20 weeks), pattern making (20 weeks)	10

Industrial Arts Curriculum in Mechanic Arts—Contd.

Grade XI

	Periods
1. American history	5
2. Electricity 10, or laboratory science	8
3. Pattern making or foundry (20 weeks), machine shop or pattern making (20 weeks)	10
4. Mechanical drawing 10, advanced mathematics, or foreign language	5

Grade XII

1. English	5
2. Laboratory science 8, or foreign language	5
3. Machine shop, sheet metal or auto shop	10
4. Civics (20 weeks), economics (20 weeks)	10

Industrial Arts Curriculum in Printing

This course prepares the student to make rapid progress as apprentice in the printing trades and for journalism. It gives skill in typesetting, make-up, presswork, linotyping, and preparation of copy.

Grade X

	Periods
1. English	5
2. World history or foreign language	5
3. Presswork and printing	10
4. Biology 7 or geometry	5

Grade XI

1. English journalism	5
2. American history	5
3. Printing	10
4. Foreign language 5, photography 5, laboratory science 7, bookbinding 10, shop management 5, or printing	10

Grade XII

1. Printing	10
2. Laboratory science	7
3. Civics (20 weeks), sociology, economics, or contemporary history (20 weeks)	5
4. Foreign language 5, printing 10, bookbinding 10, or English	5

Vocational Trade Courses

These courses have a double major in trade chosen, a single major of English, two minors of related work. Vocational work is offered in all Shops, Agriculture, Home economics, Art, Mechanical drawing, and Architectural drawing. These courses furnish vocational training along the line chosen. See special sheet for detailed description of courses.

Vocational Trade Courses—Continued

Grade X

	Periods
1. English	5
2–3. Trade	20
4. Related work	5–10

Grade XI

1–2. Trade	20
3. Related work	5–10
4. American history	5

Grade XII

1. English	5
2. Laboratory science	7
3. Trade	10
4. Civics (20 weeks), economics (20 weeks)	5
5. Music appreciation (extra) (20 weeks); 2, art appreciation (extra) (20 weeks)	2

The program in industrial arts has been well developed in the Township High School at Joliet, Ill. Two curriculums are provided; one is a 4-year and the other a 2-year curriculum.

Curriculum A (4-Year)

By the addition of another year of academic work this curriculum may be used for entrance to college.

First year

I. Specialized shop practice 3 hours per day, chosen from the following types of shop work. (1 unit.)
   (1) Auto mechanics.
   (2) Architectural drafting.
   (3) Cabinetmaking.
   (4) Electrical shop.
   (5) House carpentry.
   (6) Machine shop.
   (7) Mechanical drafting.
   (8) Plumbing.
   (9) Printing.

II. Related academic and technical work. Mechanical drawing. Science.

III. Nonrelated work. Civics. AI Art, music, gymnasium.

Second year

I. Specialized shop practice, 3 hours per day, continued as selected in first year. (2 units.)

II. Related academic and technical work. Algebra.

III. Nonrelated work. English. Gymnasium. BII Art.

Third year

I. Specialized shop practice, 3 hours per day, continued as selected in first year. (1 unit.)
II. Related academic and technical work. Geometry. Mechanical drawing (art for printing students). Science.
III. Gymnasium.

Fourth year

I. Specialized shop practice, 3 hours per day, continued as selected in first year. (1 unit.)
II. Related academic and technical work. Science.
III. Nonrelated work. English. History and social economics. Gymnasium.

Curriculum B

Very little of the work done in this curriculum may be used for college entrance.

First year

I. Specialized shop practice, 3 hours per day, chosen from the following types of shop work. (2 units.)
   (1) Auto mechanics.
   (2) Cabinetmaking.
   (3) Electrical shop.
   (4) House carpentry.
   (5) Machine shop.
   (6) Plumbing.
   (7) Printing.
II. General shop, 1½ hours per day.
III. Related academic and technical work, 1 hour per day.
   (a) First semester—English.
   (b) Second semester—Mechanical drawing.
IV. Nonrelated work. Science. AI Art, music, gymnasium.

Second year

I. Specialized shop practice, 3 hours per day, continuing work chosen previous year. (2 units.)
II. Shop theory and practice, 1 hour per day.
III. Related academic and technical work, 1 hour per day.
   (a) First semester—Mathematics.
   (b) Second semester—Science.
IV. Nonrelated work. BII Art, gymnasium.

The program of the Cass Technical School in Detroit, Mich., is one of the best known in the country. The curriculums included in the mechanic arts group will be reproduced to illustrate a plan of technical training. The six curriculums

included are mechanical and mechanical drafting, electrical, automotive, aeronautical, and building and architectural drafting. Each of these curriculums includes English, mathematics, history, science, and drafting, together with the subjects fundamental to each separate curriculum. A complete outline of each curriculum follows.

Mechanical and Mechanical-Drafting Curriculum

The mechanical and mechanical-drafting curriculum is recommended to students who wish to become draftsmen, machinists, toolmakers, patternmakers, molders, or salesmen of machinery supplies, or who wish to enter a college of mechanical or general engineering.

The work in the mechanical curriculum includes training in a wide range of shop work, including both wood and metal.

The mechanical curriculum offers the most general training along industrial lines, and is, for this reason, to be preferred over some of the more specialized curriculums. Students who are sure that they want to prepare for some branch of mechanical work and are not wholly decided in their choice are advised to take the mechanical curriculum until they have found themselves.

As shown in the outline on the succeeding pages, this curriculum includes all the fundamental subjects, such as mathematics, English, history, mechanical drafting, applied design, physics, chemistry, elementary metallurgy, and the general properties of metals and metal alloys.

There are always opportunities for employment in the vocational units represented in the mechanical curriculum. Graduates from this curriculum can secure positions as advanced apprentices in any one of the vocational units indicated and are always in line for promotion to positions as foremen, superintendents, salesmen, and designers, success depending upon the ability and determination of the student. Those who have completed the full six courses in drafting may find employment as advanced apprentices in mechanical drafting rooms, or may enter a college of mechanical engineering. The mechanical draftsman must think in terms of the machine shop, pattern shop, and foundry, and the mechanic must be able to interpret drawings.

Tenth Grade

First semester

	Credits	Hours
English (3), grammar and composition	5	5
Mathematics (3), algebra	5	5
Foundry (1)	5	10
Mechanical* drafting (3), fundamentals	5	10
Health education (3)	2½	5
	22½	35

Second semester

English (4), American literature	5	5
Mathematics (4), geometry	5	5
Chemistry (1)	5	7
Mechanical drafting (4), sheet metal	2½	5
Metal pattern making and welding (10 weeks each)	5	10
	22½	32

Eleventh Grade

First semester

English (5) composition	5	5
Mathematics (5), geometry	5	5
Chemistry (2)	5	7
Machine shop (1)	5	10
Mechanical drafting (5), details	2½	5
	22½	32

Second semester

English literature (6)	5	5
Mathematics (6), trigonometry	5	5
Applied design (1)	2½	5
Machine shop (2)	5	10
Physics (1)	5	7
	22½	32

Twelfth Grade

First semester

History (7), American	5	5
Machine shop (3)	5	10
Mechanical drafting (6), Advanced details	5	10
Physics (2)	5	7
	20	32

* To enter mechanical drafting (3), the student must have completed 1 year of intermediate school general drafting, or must have had 1 semester of mechanical drafting in high school in a course requiring at least five 45-minute class periods per week. Those who have not met the above requirements must take 1 semester of general drafting at Cass Technical High School before taking mechanical drafting (3).

Twelfth Grade—Continued

Second semester

	Credits	Hours
English (8), Composition	5	5
History (8), American	5	5
Metallurgy (1)	5	10
Elective*	5	5 or 10
	20	25 or 30

Electrical Curriculum

The electrical curriculum is designed to give the student a fairly broad working knowledge of light and power installation, maintenance, generator and motor construction, and operation. After completing this curriculum the student should have acquired a large stock of information concerning the various types and makes of electrical appliances, fittings, tools, etc. He should be thoroughly familiar with trade catalogs and should have an understanding of the elements of estimating and contracting.

This curriculum not only leads to advanced apprenticeship in the electrical trades, but with additional experience the basic training given in the school will enable the student to engage later in the sales or administrative end of electrical industry. Graduates from this curriculum are privileged to enter the recognized engineering colleges without examination, and are therefore well prepared for an electrical engineering curriculum.

The usual basic subjects, English, mathematics, drawing, science, etc., are required of each student.

Tenth Grade

First semester

	Credits	Hours
English (3), grammar and composition	5	5
Mathematics (3), algebra	5	5
Electrical construction (1), house wiring	5	10
Mechanical drafting (3), fundamentals	5	10
Health education (3)	2½	5
	22½	35

Second semester

English (4), American literature	5	5
Mathematics (4), geometry	5	5
Chemistry (1)	5	7
Electrical construction (2), house wiring	5	10
Mechanical drafting (4), sheet metal	2½	5
	22½	32

* Electives: Mechanical drafting (7), Machine shop (4). Mathematics (7) is required for college entrance.

Eleventh Grade

First semester

	Credits	Hours
English (5), composition	5	5
Mathematics (5), geometry	5	5
Applied design (1)	2½	5
Chemistry (2)	5	7
Electrical construction (3), D. C. power	5	10
	22½	32

Second semester

English literature (6)	5	5
Mathematics (6), trigonometry	5	5
Electrical construction (4), A. C. power	5	10
Physics (1)	5	7
	20	27

Twelfth Grade

First semester

English (8), composition	5	5
Electrical construction (5), A. C. power	5	10
History (7), American	5	5
Physics (2)	5	7
Elective*	5	5
	25	32

Second semester

Electrical construction (6), armature winding shop	5	10
Electrical construction (7), armature winding theory	5	5
History (8), American	5	5
Technical electricity (advanced electrical measurements)	5	10
	20	30

Automotive Curriculum

As mentioned in the preface, the automotive mechanic or engineer is dealing with a very complicated machine and one which involves practically every electrical and mechanical principle. While it is possible to get a working knowledge of certain units of automotive maintenance and repairs through unit courses, the person who wishes to become a real automobile mechanic should become thoroughly grounded in the fundamental principles of mechanics and science, and have an intimate knowledge of the different units of the automobile.

By referring to the curriculum, it will be seen that each year's work practically completes a unit in the automobile industry. If it becomes

* Mathematics (7) is required of those who contemplate college entrance; otherwise radio may be substituted for mathematics (7).

necessary for a boy to drop out of school at the end of any year, he should have obtained training in the fundamentals of certain units of the automobile that should lead to profitable employment.

Such courses as mathematics, chemistry, physics, and drawing are required of every student, as these courses give a background for a thoroughly technical understanding of the automobile.

The automotive curriculum prepares the student for entrance to colleges of automotive engineering.

Tenth Grade

First semester

	Credits	Hours
English (3), grammar and composition	5	5
Mathematics (3), algebra	5	5
Auto mechanics (1), machine fitting	5	10
Mechanical drafting (3), fundamentals	5	10
Health education (3)	2½	5
	22½	35

Second semester

English (4), American literature	5	5
Mathematics (4), geometry	5	5
Auto mechanics (2), engines and chassis	5	10
Chemistry (1)	5	7
Mechanical drafting (4), sheet metal	2½	5
	22½	32

Eleventh Grade

First semester

English (5), composition	5	5
Mathematics (5), geometry	5	5
Auto mechanics (3), electrical	5	10
Chemistry (2)	5	7
Mechanical drafting (5), details	2½	5
	22½	32

Second semester

English literature (6)	5	5
Mathematics (6), trigonometry	5	5
Applied design (1)	2½	5
Auto mechanics (4), welding and strength of materials	5	10
Physics (1)	5	7
	22½	32

Twelfth Grade

First semester	Credits	Hours
English (8), composition	5	5
Auto mechanics (5), garage practice	5	10
History (7), American	5	5
Physics (2)	5	7
	20	27
Second semester		
Auto mechanics (6), engine testing	5	10
History (8), American	5	5
Metallurgy (1)	5	10
Elective*	5	5
	20	30

Aeronautical Curriculum

The aeronautical curriculum, as outlined in the succeeding pages, is the outgrowth of an exhaustive survey of the field of aeronautics and many conferences with experts both in flying and the building of airplanes.

The graduates of this curriculum will find employment as advanced apprentices in airplane construction and airplane maintenance, and will be ready to enroll in a school for pilots.

Those who have completed the entire curriculum will be qualified to enter a college of aeronautical engineering.

Tenth Grade

First semester	Credits	Hours
English (3), grammar and composition	5	5
Mathematics (3), algebra	5	5
Aeromechanics (1), airplane and engine fitting	5	10
Mechanical drafting (3), fundamentals	5	5
Health education (3)	2½	5
	22½	30
Second semester		
English (4), American literature	5	5
Mathematics (4), geometry	5	5
Aeromechanics (2), engines and aerodynamics	5	10
Chemistry (1)	5	7
Mechanical drafting (4), sheet metal	2½	5
	22½	32

* Mechanical drafting (6), (advanced details), or machine shop (3). Mathematics (7) is required for college entrance.

Eleventh Grade

First semester	Credits	Hours
English (5), composition	5	5
Mathematics (5), geometry	5	5
Aeromechanics (3), starting, lighting, and ignition	5	10
Chemistry (2)	5	7
Mechanical drafting (5), details	2½	5
	22½	32
Second semester		
English literature (6)	5	5
Mathematics (6), trigonometry	5	5
Aeromechanics (4), welding and strength of metals	5	10
Applied design (1)	2½	5
Physics (1)	5	7
	22½	32

Twelfth Grade

First semester		
English (8), composition	5	5
Aeromechanics (5), airplane construction	5	10
History (7), American	5	5
Physics (2)	5	7
	20	27
Second semester		
Aeromechanics (6), engine testing	5	10
History (8), American	5	5
Metallurgy (1)	5	10
Elective*	5	5
	20	30

Architectural and Building Curriculum

Cass Technical High School is in a position to offer students either an architectural drafting or building curriculum. The subjects are the same for either course, with the exception that during the last semester a student may elect such subjects as will pertain more especially to his particular needs.

The curriculum outlined not only provides for the required college entrance credits, but gives the student who can not continue his education in college a practical foundation for architectural drafting or the building occupations. The successful builder or architect must have a practical knowledge not only of building construction and drafting,

* Electives: Mechanical drafting (6) or advanced details, or machine shop (3), or Navigation and weather. Mathematics (7) is required for college entrance.

out also of design, heating, sanitation, the building code, the laws pertaining to building, materials, etc.

The architectural and building curriculum outlined is not intended to train a student to be a carpenter, architect, plumber, mason, etc., but is rather for the purpose of giving a general knowledge of those things fundamentally necessary for an architect, building contractor, superintendent of construction, or tradesman, and to provide for apprenticeship in any of the divisions of the building industry.

Any student expecting to enter college must take physics (2) as one of the electives in the last semester. If he does not expect to attend college and expects to enter an architect's office, it is suggested that he take architectural drafting (6) as his elective. If he does not expect to enter the field of architecture, but rather that of building, he should take advanced carpentry. History of art is more useful to the student of architecture than to the one who is going into building construction.

Tenth Grade

First semester

	Credits	Hours
English (3), grammar and composition	5	5
Mathematics (3), algebra	5	5
Architectural drafting (1), fundamentals	5	10
Building (1), elementary carpentry	5	10
Health education (3)	2½	5
	22½	35

Second semester

English (4), American literature	5	5
Mathematics (4), geometry	5	5
Architectural drafting (2), perspective	2½	5
Building (2), advanced carpentry	5	10
Chemistry (1)	5	7
	22½	32

Eleventh Grade

First semester

English (5), composition	5	5
Mathematics (5), geometry	5	5
Architectural drafting (3), sheet metal	2½	5
Building (3), materials	5	5
Chemistry (2)	5	7
	22½	27

Eleventh Grade—Continued

Second semester

	Credits	Hours
English literature (6)	5	5
Mathematics (6), trigonometry	5	5
Architectural drafting (4), details of construction	5	10
Building (4), electrical	5	5
Building (5), heating and ventilation	5	5
	25	30

Twelfth Grade

First semester

English (8), composition	5	5
Architectural drafting (5), plans and elevations	5	10
Building (6), law code	5	5
History (7), American	5	5
Physics (1)	5	7
	25	32

Second semester

Architectural drafting (6), advanced perspective	2½	5
History (8), American	5	5
Physics (2)	5	7
Elective*	5	5
	17½	22

The General Curriculum

The general (occupational) curriculum is intended for those students who have a desire to prepare themselves for jobs in industry, but whose abilities and achievements indicate that they are not likely to fit in standard technical mathematics, science, and English.

This curriculum permits a selection of vocational subjects. A student who shows superior achievement in the general curriculum may transfer to a standard curriculum.

Tenth Grade

First semester

	Credits	Hours
English (3 g.)	5	5
Mathematics (3 g.)	5	5
Science (3 g.)	5	7
Health education (3 g.)	2½	5
Assigned subject†	5	10
	22½	32

*Electives: Students must elect 1 of the following subjects: Building (7), (roofing), architectural drafting (7), rendering, history of art (1), estimating and specifications. (Rendering and history of art are given in the art department.)

TENTH GRADE—Continued

Second semester	Credits	Hours
English (4 g.)	5	5
Mathematics (4 g.)	5	5
Health education (4 g.)	2½	5
Assigned subject†	5	5
Assigned subject†	5	10
	22½	30

ELEVENTH GRADE

First semester		
English (5 g.)	5	5
Mathematics (5 g.)	5	5
Science (4 g.)	5	7
Assigned subject†	5	5
Assigned subject†	5	10
	25	32

Second semester		
English (6 g.)	5	5
Science (5 g.)	5	10
Social science (6 g.)	5	5
Assigned subject†	5	5
Assigned subject†	5	10
	25	35

TWELFTH GRADE

First semester		
English (7 g.)	5	5
Science (6 g.)	5	10
Social science (7 g.)	5	5
Assigned subject†	5	5
Assigned subject†	5	10
	25	35

Second semester		
Social science (8 g.)	5	5
Assigned subject†	5	5 or 10
Assigned subject†	5	10
	15	20 or 25

(Two out of three required—Mathematics, science, vocational specialty.)

†An assigned subject is a subject that comes within the ability of the student and at the same time provides a well-balanced program.

The assigned subject will, in general, be taken from the following groups: Pattern making, foundry, machine shop, electrical construction, auto shop, building, mechanical and free-hand drawing, art, music, printing, science, home economics.

The offerings of the Buffalo (N.Y.) Technical High School will be of interest. Seven curricula are offered, including building design and construction, electricity, industrial chemistry, machine design, commercial design, general, and engineering college preparatory. The first year of work is common to all courses and includes English, civics (half year), applied mathematics I, elementary science, shop—manual arts, mechanical drawing I, elementary representation, and physical training. The courses taken in each curriculum during the second, third, and fourth years are listed below.

Building Design and Construction

Counts	*Second year*	40-minute periods a week
4	English II	5
5	Applied mathematics II	5
10	Architectural and structural drafting I	10
5	Carpentry	10
	Physical education	4
	Third year	
4	English III	5
5	Physics (recitation)	5
	Physics (laboratory)	4
10	Architectural and structural drafting II	10
5	Plumbing and sheet metal (1 term)	10
3½	Electrical construction (1 term)	10
	Physical education	4
	Fourth year	
4	English IV	4
5	American history	5
16	Architectural drafting III or structural design III	16
	Physical education	4

English IV or other electives recommended but not required.

Electricity

	Second year	
4	English	5
5	Applied mathematics II	5
5	Physics (recitation)	5
	Physics (laboratory)	4
3½	Electrical construction I	8
6	Machine drafting	6
	Physical education	4

ELECTRICITY—Continued

Counts	*Third year*	40-minute periods a week
4	English	5
2½ and 2½	Intermediate algebra and trigonometry (optional)	5
5	Electricity I	5
	Electricity I (test)	4
10	Electrical design I	10
3	Electrical construction II	6
	Physical education	4
	Fourth year	
4	English (optional)	4
5	American history	5
5	Electricity II	5
	Electricity II (test)	4
10	Electrical design II	10
2	Electrical construction III	4
	Physical education	4

INDUSTRIAL CHEMISTRY

	Second year	
4	English	5
5	Applied mathematics II	5
9	Industrial chemistry I	20
	Physical education	4
	Third year	
4	English	5
5	Physics (recitation)	5
	Physics (laboratory)	4
8	Industrial chemistry II	16
	Physical education	4
	Fourth year	
4	English (optional)	4
5	American history	5
5	Industrial chemistry (conference)	5
9	Industrial chemistry III	18
	Physical education	4

Machine Design

Counts		40-minute periods a week
	Second year	
4	English II	5
5	Applied mathematics II	5
5	Foundry or pattern making	10
6	Machine drafting II	6
	Physical education	4
	Third year	
4	English III	5
5	Physics (recitation)	5
	Physics (laboratory)	4
5	Machine or forge shop	10
10	Machine design I	10
	Physical education	4
	Fourth year	
4	English IV (optional)	4
5	American history	5
5	Strength of materials	5
16	Machine design II	16
	Physical education	4

English IV and other electives recommended but not required.

Commercial Design

	Second year	
4	English II	5
5	Mathematics II–B (elementary algebra)	5
4	Commercial design I	4
2	Advanced representation	4
2	Pencil sketching	4
	Elective	
	Physical education	4
	Third year	
4	English III	5
5	Science	6
4	Commercial design II	4
4	Advanced design	4
	Elective	6
	Physical education	4
	Fourth year	
5	American history	5
4	Art history	4
4	Sketch class	4
4	Nature study	4

COMMERCIAL DESIGN—Continued

Fourth year—Continued

Counts		40-minute periods a week
4	Studio*	4
	Elective	
	Physical education	4

Electives

4	Commercial design III	4
2	Advanced pencil sketching	2
4	Advanced nature study	4
4	Interior decoration	4
4	Home planning	4
2	Color theory	2
4	Costume design I	4
4	Costume design II	4
4	English IV	4
5	Physics	5
5	Modern language	5

GENERAL

Second year

4	English II	5
5	Applied mathematics II	5
5	Advanced shop I	10
4	Mechanical or freehand drawing	4
	Physical training	4
	Elective	

Third year

4	English III	5
5	Science II (physics)	9
5	American history	5
5	Advanced shop II	10
	Physical training	4
	Elective	

Fourth year

The general course requires for graduation all the subjects listed in the first, second, and third years with electives to earn 12 counts from the following:

Counts		40-minute periods a week
4	English IV	4
4	Business English	5
2	English grammar	
2½	Economics (half year)	5
[illegible]	Foreign language—two years	5

* Studio—Actual contact of commercial design course with business world, outside of regular class periods.

GENERAL—Continued

Counts	*Fourth year*—Continued	40-minute periods a week
5	Chemistry	9
5	Plane geometry	5
2½	Intermediate algebra (half year)	5
2½	Solid geometry (half year)	5
2½	Advanced algebra (half year)	5
5	Advanced shop III	10
4	Elementary design and representation	4
4	Mechanical drawing	4
2	Elementary theory of music	5
6	Surveying	6
4	Topographical drawing	4

(If a foreign language is taken in this course, it should be started in the second year and carried through the third year, postponing American history until the fourth year, but the American history must be taken.)

Regents' counts in the foreign languages are credited only after the second year examination. Regents' counts in these 2-year courses in the applied mathematics are credited as follows: After the third term examination, 5 counts in elementary algebra; after the fourth term examination, 5 counts in applied mathematics.

ENGINEERING COLLEGE PREPARATORY

Counts	*Second year*	40-minute periods a week
4	English II	5
5	Mathematics II	5
5	Foreign language I	5
4	Mechanical or freehand drawing	4
5	Advanced shop I	10
	Physical education	4
	Third year	
4	English III	5
5	Plane Geometry	5
5	Foreign language II	5
5	Physics	5
	Physics (laboratory)	4
	Physical education	4
	Fourth year	
4	English IV	4
2½	Intermediate algebra	5
5	Foreign language III	5
5	American history	5
	Physical education	4
2½	Solid geometry (elective if State college entrance diploma is earned).	

Engineering College Preparatory—Continued

Counts	*Electives*	40-minute periods a week
5	Advanced shop	10
2½	Advanced algebra	5
4	Mechanical or freehand drawing	4
2½	Trigonometry	5
5	Chemistry	9
2½	Economics	5

If regents' examinations are passed in English four years, foreign language third year, intermediate algebra, plane geometry, and either physics or history with marks averaging 75 per cent for all the above, the State will give a college entrance diploma, which carries with it also the opportunity for a State scholarship or $100 a year for four years.

The Boys Technical High School in Milwaukee, Wis., offers both technical and trade courses. Limitations of space do not allow reproduction of all the curriculums offered in the technical field. Only the technical artisans' curriculum will be given. This same pattern is followed for the different specialized shop employments, including machinists, pattern-makers, electricians, plumbers, auto mechanics, and wood-workers. The description of the trade school courses will also be reproduced.

Technical Artisans' Curriculum

Tenth grade

	Periods per week	Credits per semester
Required:		
English	5	1
Mathematics	5	1
Specialized drawing	4	.4
Specialized shop	8	.8
	22	3.2
Elective	5 to 7	0.8 to 1.4
Modern language	5	
Music	2 or 5	
Science	5	
Social science	5	
Principles of design or freehand drawing	2 to 5	
Specialized shop	2	
Physical education	1	
	27 to 29	4 to 4.6

TECHNICAL ARTISANS' CURRICULUM—Continued

Eleventh grade

	Periods per week	Credits per semester
Required:		
English	5	1
Specialized drawing	4	.4
Specialized shop	8	.8
	17	2.2
Elective	10 to 12	2 to 2.4
Mathematics	5	
Modern language	5	
Music	2 or 5	
Science	5	
Social science	5	
Principles of design or freehand drawing	2 to 5	
Specialized shop	2	
Physical education	1	
	27 to 29	4.2 to 4.6

Twelfth grade

Required:		
Specialized drawing	4	.4
Specialized shop	8	.8
	12	1.2
Elective	14 to 17	2.4 to 3.0
Bookkeeping	5	
English	5	
Mathematics	5	
Modern language	5	
Music	2 or 5	
Science	5	
Social science	5	
Advanced drawing or design	5	
Specialized shop	2	
Physical education	1	
	26 to 29	3.6 to 4.2

TRADE SCHOOL COURSES

TYPES OF SHOP WORK

At present the following types of shop work are offered: Automotive mechanics, carpentry and cabinet making, electrical, tool-making, pattern making, plumbing, and printing.

Pupils may specialize in any of the shops and learn a skilled trade. Architectural and mechanical drafting and commercial art are also offered as trade subjects.

Instructors in all trade departments are practical men who have had many years of successful trade and teaching experience.

A brief outline of the courses offered in these trade departments is given below.

Architectural drafting

Graduates of the eighth grade or its equivalent may be admitted to this department. The pupil learns the correct use of the instruments and the fundamental principles of drafting. At first, stress is placed on accuracy and neatness; the time element receives emphasis later in the course after correct habits have been acquired. Much attention is paid to freehand drawing, beauty of design, and symmetry. The pupil progresses from a study of successful types in the different styles of architecture to original designs based upon the fundamentals he has learned. Proper attention is likewise given to floor plans, elevations, detail drawings of units of construction and decorative elements, and the drawing up of specifications.

Short courses in the woodworking, plumbing, electrical, and art departments acquaint the pupil at first hand with these important features of the course.

The special allied courses for this trade include: English, arithmetic, algebra, trigonometry and logarithms, chemistry, physics, slide rule, and strength of materials.

Automotive mechanics

The course is intended to prepare skilled workmen capable of meeting almost any emergency that may arise in this trade; it includes the principles, designs, and the practice of automobile construction, care, repair, and driving.

The shop occupies the basement and the first floor of the east center wing, and has room sufficient for a complete equipment of tools and machinery, for the convenient placing of a variety of motors and chassis for study, repair, adjustment, and experimentation, as well as for effectively teaching the various phases of automotive work.

The other shop facilities of the school are also used by the pupils in automotive mechanics. Special courses for advanced pupils are offered in the electrical shop; these courses cover the construction and the rebuilding of the electrical units of a car. Pupils are required to take work in the machine shop so that they may be able to cope successfully with repair problems involving accurate hand and machine work.

The special allied courses for this trade include: English, mathematics, science, and mechanical drawing.

Carpentry and cabinetmaking

The dual purpose of this department is to turn out expert carpenters, capable of entering upon journeyman work after graduation, and finished cabinetmakers, capable of doing the finest work required in furniture factories. The beginning work is the same for pupils of

both trades, and consists of 12 preliminary exercises in planing, sawing and gaining, gained and tongued lap joints, dovetails, handrail carving, and turning. From this point on the work differs for the two trades. The carpenter completes 28 projects, beginning with a miter box and including all manner of work required in constructing a modern house, such as door and window frames, triple-angle beams, truss framing, floor construction, partition construction, balloon framing, and framing of roofs. The pupil deals largely with full-size problems, such as are found in the practical, everyday work of carpenters and contractors. The cabinetmaker completes the same number of projects, ranging from a T square to an inlaid cabinet.

The special allied courses for this trade include: English, arithmetic, science, and blueprinting.

Electrical

This course in no sense is intended to make electrical engineers, but lays special emphasis on the practical, and is designed to make students thorough, all-around electricians, capable of managing a business of their own. The shop and laboratory study and practice include: Making, soldering, and taping of wire joints; methods of making cross-overs, branches, and junctions; knob and tube work; wood and metal molding; rigid and flexible iron conduit work; installation of electric bells, annunciators, and burglar alarms; wiring for lighting and power circuits, both 2- and 3-wire systems; switchboards, cutouts, fuses, and circuit-breakers; arc lighting; telephone apparatus and equipment; primary cells; storage batteries; transformers; sign lighting; armature winding; etc.

The classroom work is closely related to the shop work and has the special purpose of showing why each operation should be done in some given manner. A thorough course in shop mathematics includes the application of simple formulas to practical work, Ohm's law, series and parallel circuits, lighting systems, power-wire calculations, armature and field calculations, location of line trouble, storage battery and electroplating calculations, induction, capacity, etc. National and city code rules are studied.

Allied academic work includes: English and general science. The drawing course includes: Simple wiring diagrams; plans of typical frame and brick structures, simple details of building construction, wiring plants, and lay-outs; detail and assembly drawing of simple electric machines and many forms of commercial electrical apparatus; tracing and blueprinting of working drawings. In order to acquaint the pupil with the use and care of tools and machines which he may be called upon to use in construction and repair work, a short course both in carpentry and machine-shop practice is required.

Machinist and tool making

In the machine shop the pupil becomes acquainted with a large variety of makes and types of equipment, so that he may become

something more than a specialized mechanic. The aim is to fit pupils for advancement in the trade, either in the direction of superior work, foremanship, experimentation, or some other position of responsibility. The pupil progresses through the following units of shop work: Lathe work, milling-machine work, planer work, slotter work, universal grinding, bench and floor work, tool and die making, tool forging, tempering, and heat treating. Pupils are taught the transforming of raw materials into finished products, such as small lathes, jigs, special fixtures, milling cutters, reamers, taps, dies, etc. They handle, assemble, dismantle, and repair all kinds and classes of machinery, and erect whatever new machinery is installed.

The special allied courses for this trade include: English, arithmetic, trigonometry, science, and drafting.

Mechanical drafting

Graduates of the eighth grade or its equivalent may be admitted to this department. The pupil learns the correct use of the instruments and the fundamental principles of drafting. At first, stress is placed on accuracy and neatness; the time element receives emphasis later in the course, after correct habits have been acquired. The pupil is given blueprint specifications with complete instructions for finishing the different exercises. He finds it necessary to read and study these thoroughly before he can attempt execution on the drawing board. The specifications gradually become more difficult, progressing through cams, propellers, drill jigs, milling-machine fixtures, punches and dies, punch presses, jib cranes, steam engines, hydraulic machines, pumps, to gas engines; each step requires constant development of ingenuity leading to original designs.

Short courses in the pattern and machine shops, and foundry problems enable the pupil to design his work in the drafting room with a clearer understanding of the methods and the cost of shop production. The wide range of projects undertaken makes it possible for him to adjust himself more readily to the different classes of work in the manufacturing field.

The special allied courses for this trade include: English, arithmetic, algebra, trigonometry and logarithms, chemistry, physics, slide rule, and strength of materials.

Pattern making

The equipment of the shop in this department is as complete and the lay-out as up to date as that of any of the large pattern shops in the city. The pupil choosing this trade is given thorough training in all varieties of the work so as to qualify him for the position of journeyman pattern maker. Some of the specific problems he works out are: Pawl, bracket, bushing, flange, cone pulley, fly wheel, 3-way pipe, spur gears, bevel gears, cylinders, valves, lathe patterns, steam pumps, propellers, worm gears. Such work is supplemented by actual molding from the pattern.

The special allied courses for this trade include: English, arithmetic, general science, drafting, design of machine parts, and trigonometry.

Plumbing

The course in plumbing aims to prepare pupils to pass the State examination and to give at least 1 year's advancement toward a master's license. The shop equipment is generally conceded to be the most complete found in any school in the United States. The practical work consists of the following problems of the trade: 60 wiped solder joints; 14 soldering exercises; calking joints; measuring, cutting, and threading pipe; bending lead and iron pipe; gas fitting; laying out of drain, soil, waste, and ventilation pipes; and hot- and cold-water systems. Then follows construction work in the installation of house drains; soil, waste, and vent pipes; hot- and cold-water supply pipes; in the setting up and connecting of fixtures for bathroom, kitchen, pantry, laundry, and toilet rooms; and in the installation of pumps, rams, hydropneumatic water supply and drainage systems.

The special allied courses for this trade include: English, arithmetic, and general science. Supplementary lectures are given on systems of installation; fixtures and trimmings; pumps, siphons, bilge pumps, and ejectors; filters and swimming pools; estimating and contracting; city and State code; and questions pertaining to State examinations. Pupils work out 14 problems in the carpenter shop and finish 70 drawing plates.

Printing

While all pupils in this department are trained in all branches of the work, each one is developed in the line for which he seems to be best fitted. A systematic course, approved by both the Typographical Union and Typothetæ, is offered in composition, presswork, and bindery work. In composition, special stress is laid upon the following points: Setting elementary straight matter, book work, simple display matter, job-press lockup, difficult composition, job composition, imposition, and linotype instruction. The presswork, in addition to the cylinder and platen presswork, includes the following units: Automatic feeders, care of press, preparing press for job, operation, ink mixing, motors, belts, and paper. In the bindery pupils receive instruction in pamphlet binding, stitching, punching, folding perforating, cutting, and miscellaneous work.

Pupils are trained in the handling of men by means of a shop organization with pupil executives, consisting of a department manager, superintendent, efficiency man, foremen, librarian, proofreaders, and reporter. Records are kept by means of the Standard Cost Finding and Estimating System.

The special allied courses in this trade include English, science, art and design, and printing theory.

Trade departments

Graduation from a trade department depends upon the completion of the regular course of study planned for that trade, including both technical and allied academic work. While such courses are laid out

on the average of two and one half years of work, the pupil may progress as fast as his individual ability will permit. He will receive his trade diploma after the satisfactory completion of the required work. He is then qualified to enter his chosen field as a skilled mechanic.

Allied academic work in trade departments is not given regular high-school credit, but with the approval of their departmental advisers and the principal, trade pupils may elect any work in the technical department for which they are qualified.

Music

All seventh and eighth grade pupils are required to spend two 50-minute periods per week in the study of music, which includes simple rudiments of music and chorus singing. This work prepares the pupil for the more serious study of music offered in the upper grades.

Any pupil of the trade departments and any pupil of the technical departments above the eighth grade may elect music as a regular study and devote to it one 50-minute period each day. This work includes: Harmony, appreciation, the theory and history of music, class work in tonal dictation, notation, melody writing, and progression of chords.

Offerings in commercial subjects.—A variety of commercial subjects appear in the offerings of the schools canvassed in this study. (See Table 21.) However, many of the schools offer only a few of the subjects. It will be noted that most of the percentages are small. The three subjects that dominate the program are bookkeeping, shorthand, and typing. Office practice also appears with a high frequency. Several other lines of training have been introduced in many schools. General business training, a general introductory course, has been adopted by many of the larger comprehensive schools and the commercial schools. A significant addition to the offering in this field are the courses in salesmanship and business management. Salesmanship has not been adopted by the smaller comprehensive schools, but it was reported by nearly half of the larger schools. It has been still more generally adopted by the commercial schools. Sales training is also provided in courses on retail distribution, which courses were reported by a considerable number of the commercial schools. Business organization and management was reported by a small proportion of the schools. This course appeared only in the larger comprehensive and commercial schools. Machine calculation has also been introduced by some of the larger comprehensive and commercial schools.

TABLE 21.—*Percentages of schools offering various commercial subjects*

Subject	Type of school							
	Comprehensive				Academic (90)	Trade (87)	Commercial (16)	Technical (17)
	249 and fewer (192)	250–499 (139)	500 and more (429)	Total (760)				
1	2	3	4	5	6	7	8	9
Advertising	-------	0.7	2.3	1.4	-------	1.5	-------	-------
Banking	-------	-------	.7	.4	2.2	-------	6.3	-------
Bookkeeping	62.0	83.5	86.5	79.7	48.8	12.6	93.8	17.6
Business English	1.0	.7	1.2	1.0	-------	12.6	6.3	-------
Business organization and management	1.0	2.2	14.0	8.6	4.4	-------	37.5	-------
Commercial arithmetic	2.1	3.6	4.9	3.9	2.2	1.1	6.3	5.9
Commercial geography	1.0	2.9	2.8	2.4	2.2	-------	-------	-------
Commercial law	2.1	4.3	9.3	6.6	3.3	-------	12.5	-------
Filing	-------	.7	2.6	1.6	-------	-------	6.3	-------
General business training	27.6	32.4	40.1	35.8	24.4	12.6	56.3	-------
Machine calculation	3.6	9.4	19.6	13.6	4.4	9.2	68.8	-------
Marketing	2.1	-------	.7	.9	-------	3.4	-------	-------
Multigraphing	1.0	-------	.2	.4	-------	1.1	6.3	-------
Office practice	25.5	36.7	51.7	42.4	26.7	9.2	75.0	5.9
Retail distribution	.5	2.2	5.1	3.4	1.1	2.3	18.8	5.9
Salesmanship	5.7	16.1	41.0	27.2	14.4	8.0	56.3	5.9
Secretarial training	-------	-------	.2	.1	-------	-------	6.3	-------
Shorthand	55.7	84.9	77.4	73.3	54.4	11.5	100.0	5.9
Stenotyping	-------	-------	.2	.1	1.1	-------	-------	-------
Typing	65.1	86.3	89.3	82.6	58.9	12.6	100.0	5.9
Commerce and industry	-------	-------	-------	-------	-------	-------	6.3	-------
Foreign trade	-------	-------	-------	-------	-------	-------	6.3	-------
Machine bookkeeping	-------	-------	-------	-------	-------	-------	12.5	-------
Machine billing	-------	-------	-------	-------	-------	-------	6.3	-------

NOTE.—The numbers in parentheses indicate the number of schools represented.

A comparison of the offerings of the comprehensive and commercial schools discloses that larger proportions of the commercial schools offer the various subjects. While the percentages of the larger comprehensive schools are broader than those for the smaller comprehensive schools, they are still generally lower than those for the commercial schools. Several of the subjects, machine bookkeeping, for instance, appear only in the commercial schools, although they appear in only a few of them. The academic and technical schools failed to offer many of the subjects listed.

Numbers of units of work offered in the various commercial subjects.—Report was secured from the schools included in this investigation concerning the number of years of work offered in the different commercial subjects. The means for the various groups are reported in Table 22. Some varia-

tion is noted between the different groups of schools. The means are largest for the commercial schools for bookkeeping, general business training, office practice, salesmanship, shorthand, stenotyping, and typing. Bookkeeping appears for two years in most of the schools, although many of the smaller schools offer only one year. More than three years of bookkeeping are offered in the commercial schools. Business management appears generally for a year or for a semester.

TABLE 22.—*Mean numbers of units of work offered in the various commercial subjects*

Subject	Type of school							
	Comprehensive				Academic	Trade	Commercial	Technical
	249 and fewer	250–499	500 and more	Total				
1	2	3	4	5	6	7	8	9
Advertising		0.5	0.7	0.6		1.5		
Banking			1.0	1.0	0.5		0.5	
Bookkeeping	1.4	1.7	2.1	1.9	1.9	1.8	3.1	2.3
Business English	.8	.5	.7	.7		4.0	.5	
Business management	1.5	.5	.7	.7	.8		.8	
Commercial arithmetic	.6	.7	.8	.7	.8	1.0	1.0	1.0
Commercial geography	.5	.9	.7	.7	.5			
Commercial law	.8	.5	.6	.6	.5		.5	
Filing		.5	.6	.6			.5	
General business training	1.3	1.3	1.5	1.5	1.1	1.9	2.2	
Machine calculation	1.0	.8	.9	.9	.9	1.9	1.0	
Marketing	.6		.8	.7		.8		
Multigraph operating	1.5		1.0	1.3		1.5	1.0	
Office practice	1.0	.9	.9	.9	.9	1.9	1.2	1.0
Retail distribution	2.0	.7	1.1	1.1	.5	2.0	1.5	1.0
Salesmanship	.9	.6	.8	.7	.8	2.0	1.2	1.0
Secretarial training			1.0	1.0			.5	
Shorthand	1.9	1.9	2.1	2.0	1.9	1.8	2.4	2.0
Stenotyping			1.0	1.0	3.0			
Typing	2.0	2.0	2.2	2.1	2.0	1.8	2.6	2.0
Commerce and industry							1.0	
Foreign trade							1.0	
Machine bookkeeping							.8	
Machine billing							.5	

Commercial geography is more frequently a year course than a semester course, and commercial law more frequently appears as a semester course. The mean number of years for general business training is 1.5 for the comprehensive school and 2.2 for the commercial school. Machine calculation also appears generally for a year. The same can be said for marketing, multigraph operating, office practice,

retail distribution, and salesmanship. With the exception of bookkeeping, shorthand, and typing, the commercial courses are short units, extending for a semester or for a year and do not provide intensive mastery in any phase of commercial work. They represent a relatively short exposure to the various phases of commercial work and do not provide for specialized training in each aspect.

Objectives of commercial education.—The vocational and general education values have both received consideration in the literature on commercial education and in the thinking of teachers and administrators. Weersing summarized the statements of 25 writers. The objective mentioned most frequently by them was "To prepare pupils directly for business and clerical positions." The objective second in frequency was "To develop a better appreciation of the world of commerce and its social and economic significance," and the third position was held by "To teach fundamental principles by which students advance in business." The first and third aim might be considered as strictly vocational and the second might be thought of as having both vocational and cultural significance. The two aims next in frequency might be considered as nonvocational. They are, "To impart qualities of initiative, independence, honesty, integrity, good citizenship, etc.," and "To impart general knowledge and skills useful in everyday practical life activities." In Weersing's study, the administrators gave highest rank to the last aim mentioned, which is "To impart general knowledge and skills useful in everyday practical life activities"; in second place with these administrators was "To teach fundamental principles by which students advance in business," and third place went to the vocational aim "To prepare pupils directly for business and clerical positions."[4]

The emphasis on the nonvocational aims by teachers of commercial subjects has been severely challenged by Earl W. Barnhart.

> As a whole, teachers of commercial subjects deny that the primary purpose of their instruction is vocational training. They generally admit with reluctance that subjects such as typewriting, bookkeeping,

[4] Weersing, Frederick J. Reorganization of Commercial Education in Public High Schools. South-Western Publishing Co., 1929. P. 17.

office practice, or shorthand should be taught primarily to develop effective operating skill in prospective office workers. But they usually claim that the disciplinary and cultural values should be emphasized, thus ignoring the weakening effect this emphasis upon a discarded educational theory may have upon the preparation of their pupils for positions as beginners in office and store work. Obviously, there is as much apparent mental disciplinary and cultural value in teaching nonexistent or abandoned business practices as in teaching the practices actually followed in the offices in which a large number of the drop-outs or graduates from a school are annually employed. This almost unanimous rejection of the vocational purpose of commercial subjects explains why the commercial subjects are so generally taught with but little regard to the actual business practices prevailing in the locality and to the needs of beginners in commercial pursuits in the offices in the community to which most of the students look forward to finding employment.[5]

The investigations of the National Survey did not discover the extreme lack of vocational objective deplored in the quotation from Barnhart. However, there was noted a belief on the part of many that commercial subjects had considerable value for pupils who did not enter the business occupations in preparation for the personal business activities and in giving an appreciation of the business aspect of our complex social life. The issue between vocational and nonvocational education is a live one in the commercial field, as it is in the industrial arts.

Enrollment in commercial courses.—A large proportion of the pupils in secondary schools are enrolled in one or more commercial subjects. Jessen has reported the enrollments for 1922 and 1928. The enrollment for bookkeeping was 14.27 in 1922 and 10.61 in 1928; for shorthand, 9.18 in 1922 and 8.69 in 1928; for typewriting, 13.86 in 1922 and 16.19 in 1928; for commercial law, 1.25 in 1922 and 3.36 in 1928; for commercial geography, 1.92 in 1922 and 5.14 in 1928; for office practice, 0.28 in 1922 and 1.66 in 1928; for business organization, 0.03 in 1922 and 3.26 in 1928.[6] There was a small decrease in enrollment in bookkeeping and shorthand and a small increase in typewriting. There was an increase also in courses in commercial law, commercial geography,

[5] Barnhart, Earl W., Trends in Commercial Education, Ch. V in Objectives and Problems of Vocational Education, edited by Edwin A. Lee. McGraw-Hill Book Co., 1928. P. 117.
[6] Jessen, Carl A. Op. cit., p. 159.

office practice, and business organization. Data were not reported separately for salesmanship.

Barnhart has pointed out the maladjustments of the enrollments in the commercial subjects and the opportunities for employment in commercial occupations.[7] This maladjustment consists of excessive enrollment in shorthand and inadequate enrollment in salesmanship. For instance, in 1927–28 there were 47,641 boys enrolled in courses in shorthand and only 4,862 employed at ages 18 and 19, whereas there were only 4,983 enrolled in courses in salesmanship and 63,457 at ages 18 and 19 were employed in such occupations. Large contrasts were noted also for girls. In 1927–28 there were 203,900 girls enrolled in shorthand and 4,989 enrolled in salesmanship, but the number at ages 18 and 19 employed in 1930 were 118,791 in stenographic positions and 54,988 employed in sales positions.

These figures make clear that the public high schools are enrolling in shorthand classes many more boys than can find employment as stenographers, while not offering instruction for the great number who will be employed in store service and selling occupations. The public-school enrollment of girls in shorthand classes has reached a point also where there will be graduated soon many more stenographers than can expect to find employment in stenographic work. The enrollment in high-school bookkeeping classes also seems to be too large for the number of positions available. Census reports on the employment of workers under 20 years of age indicate that opportunites for educational service to youth are far greater in preparatory training for store service and selling occupations than in developing more or larger classes in stenography or other traditional clerical subjects . . . There is urgent need for some stimulus that would be effective in stopping the waste of public funds in providing commercial education of the character generally found in public high schools, and would promote the development of the vocational training needed by youth in preparing for those occupations in which they may reasonably expect to find employment. The training of store-service workers and sales people is a form of vocational education for which there is an acknowledged widespread need not now being met—a need of prime importance for advancing national welfare.[8]

The shifts in enrollment in commercial subjects have been well summarized in a statement by Malott:

One of the major developments of secondary education has been the exceedingly rapid growth of commercial education. Approximately 20

[7] Sixteenth Annual Report of Federal Board for Vocational Education: 1932, pp. 50-51.
[8] Barnhart, E. W., op. cit., p. 51.

per cent of the secondary-school pupils are now enrolled in the commercial curricula; in many States the percentage exceeds 30, and in many cities the percentage is approximately 50. Nearly two-thirds of all enrollments in education for business are in these schools. Two-thirds of the pupils enrolled in secondary-business education are women, and the number of women is increasing far more rapidly than is the number of men. The secondary schools, of which approximately 10,000 offer commercial subjects, have made better adjustments of their courses to the needs of young women than to the needs of young men.

Enrollment data reveal many other significant trends. One of these trends pertains to the upgrading of business education. Ten years ago only 1 boy out of 10 and 1 girl out of 120 who were studying business education were enrolled in the colleges and universities. The ratio for boys now is 1 out of 6 and for girls 1 out of 70. Furthermore, two-thirds of the pupils in the private business schools are high-school graduates, whereas 10 years ago a small percentage of the private business-school pupils had completed high school.

The recent changes in the enrollments of boys in the secondary schools tend to follow, although very slowly, the changes in their employment opportunities. The greatest percentages of increased enrollments for boys were in salesmanship, commercial law, office practice, commercial geography, economics, typewriting, commercial arithmetic, and bookkeeping. There was an increase of only 5 per cent in the enrollments in shorthand during the past six years, and only 18 per cent of the secondary pupils enrolled in shorthand were boys. Although the percentage of increase for boys in salesmanship is high, the actual number enrolled is relatively small. The trend toward salesmanship is desirable and should be encouraged for both boys and girls.

Another significant trend pertains to the changing emphasis on the traditional technical subjects in the secondary schools. At the beginning of the past 6-year period, shorthand, typewriting, and bookkeeping accounted for 74 per cent of enrollments in the commercial subjects in the public high schools and 88 per cent in the private high schools and academies. At the close of the period the percentages had decreased to 59 and 70, respectively. Although the enrollments in the technical subjects are increasing rapidly, there has been an unusually large increase in the enrollments in the general business and information courses.[9]

Sample commercial programs.—Considerable variation is noted in the program offered in commercial subjects and in the organization in the programs of training. Several illustrations may be appropriate. In the Senior High School of

[9] Malott, J. O. Commercial Education. Ch. V of Office of Education Bulletin 1931, No. 20, Biennial Survey of Education, 1928–1930, pp. 192–193.

Tulsa, Okla., one curriculum is offered in the commercial field with the title "Business and commercial curriculum." Bookkeeping I and II or commercial arithmetic and penmanship and spelling may be chosen in the sophomore year. In the junior year all pupils in this curriculum elect typewriting I and II, and shorthand I and II or bookkeeping I and II or bookkeeping III and IV or business management. In the senior year all pupils study business English VII and filing and indexing. Pupils may choose shorthand III and IV or banking or office appliances. A choice is also allowed between typewriting III and IV and office appliances. Business management is studied by all pupils in this curriculum. Pupils in the commercial curriculum must carry four units of English (Commercial English takes up three years), two units of occupational civics and early American history, two units of American and modern history problems, four units of science, two units of manual arts, art, home economics, two credits of a combination course of physical education and music and home crafts. Of 29 credits required for graduation, 19 are required of all pupils of the school regardless of curriculum and 10 are elective.

Three curriculums in the commercial field are offered in the Manual Arts High School in Los Angeles: Accounting, secretarial, and salesmanship. In the accounting curriculum pupils in the tenth grade take bookkeeping and typing and they may elect general business and economic geography; in the eleventh grade they take bookkeeping III and machine bookkeeping and they may elect business mathematics; and in the twelfth grade they take commercial practice, bookkeeping IV, and advanced accounting, and they may elect commercial law. In the secretarial curriculum the offering in grade 10 is similar to that for the accounting curriculum. In grade 11 pupils take business English, stenography, typing, and they may elect business mathematics, machine bookkeeping, or economics. In grade 11 they take office practice and transcription, stenography, and they may choose commercial law. In the salesmanship curriculum the tenth grade offering is similar to the other curriculums. In grade 11 pupils take business English, and they

may choose business mathematics and economics. In grade 12 they take salesmanship, store practice, advertising, and commercial law.

Five curriculums are listed in the Joliet (Ill.) Township High School, including a curriculum leading to business administration—one leading to secretarial service; one leading to clerical service, one leading to mercantile service; and the last, a 2-year curriculum, leading to office and store work for girls.

Three curriculums are offered in the Omaha Technical High School. They are the bookkeeping and accounting curriculum, the retail selling curriculum, and the stenographic and secretarial curriculum. Cooperative sales experience is provided during all 3 years in the retail selling course.

The program of the High School of Commerce of Springfield (Mass.), contains six different curriculums. The following quotation from a printed program of studies of the school will indicate the scope of the program of this specialized commercial school:

COMMERCIAL COURSES

For boys and girls

Purposes:

1. They train young men and young women to meet the most exacting requirements of the best business offices in Springfield.
2. They provide a training in the fundamental principles of business that will enable graduates to earn promotion to positions of responsibility.
3. They give a general education that prepares graduates to be active, intelligent, and useful citizens.
4. They offer an excellent preparation for colleges of business administration.

Six different courses are provided, and, during his first year, a pupil should choose the general line of work for which he desires to be prepared. The following subjects are required of all pupils regardless of the special courses that they may be taking: English (3 years); commercial geography, modern or industrial history, American history (1 year); civics, economics, office routine, commercial law, economics (2) (boys), foods (girls), clothing (girls), household management (girls), and physical education (2 years).

The following statements outline the purpose and general character of each of the six different courses:

A. ACCOUNTING, for boys and girls.

This course is designed to prepare young men and women for positions in accounting departments. It will also enable those who plan to prepare for professional accounting by attending colleges of business administration to pass off the usual course in elementary accounting by examination or certificate.

Pupils choosing this course must include in their electives at least 1 year of bookkeeping and 1 year of accounting; and they are advised to take 1 year of mathematics, 1 year of physics or chemistry, and 1 year of typewriting.

B. SECRETARIAL, for boys and girls.

This course is designed to prepare for positions as stenographers, typists, and private secretaries. Pupils taking this course receive in addition to their general preparation a thorough training in stenography and typewriting which will enable them to secure positions at good salaries immediately upon the completion of the course.

Young men will find that stenographic positions very frequently lead to secretarial, sales, and executive positions. Young women of good ability, after suitable experience, should advance to positions as private secretaries. Those who may later enter college will be able to earn a large share of their college expenses by the use of their stenography and typewriting.

Pupils choosing this course must include among their electives stenography and typewriting for 2 years. They will also find it desirable to take at least 1 year of bookkeeping.

C. SALESMANSHIP, for boys.

This course is planned to give young men a training in the fundamental principles and practice of buying, selling, and advertising. There is a constantly increasing demand in business for young men with this kind of training. Boys who choose this course should include among their electives salesmanship (1 year); industrial history, commercial geography (2) or (3), bookkeeping (1 one year); chemistry; and money and finance. Young men who take this work will have opportunities during their senior year to put their training into actual selling practice.

D. SALESMANSHIP, for girls.

This course is designed to prepare girls for positions in retail stores. Such positions offer excellent opportunities for promotion to young women with suitable training. Arrangements have been made by which girls taking this course can combine with it actual store practice for which they will receive regular wages. Pupils taking this course should include among their electives salesmanship (2 years), store practice (1 year), and penmanship.

E. INVESTMENTS AND BANKING PRACTICE, for boys and girls.

The purpose of this course is to teach the elementary principles of investment and to prepare for positions in banks. Emphasis is laid upon the essential rules for the safe investment of small funds. A study is made of stocks and bonds and general business principles, including the history of banking. The functions and qualifications of bank employees and the methods used in banks are studied in detail.

A pupil taking this course must include among his electives 1 year of bookkeeping, 1 year of accounting, and the course in money and finance. In addition, he is strongly urged to take stenography and typewriting, penmanship, and industrial history.

F. CIVIL SERVICE AND CLERICAL, for boys and girls.

This course is planned to prepare pupils to pass civil-service examinations, both State and Federal, in preparation for positions in the employ of the city of Springfield, the county of Hampden, and the United States Government. This course also provides an excellent preparation for general clerical positions.

Pupils who choose this course are advised to include among their electives the course in civil-service review and 1 year in bookkeeping. In addition, they will find it very desirable to take stenography and typewriting for 2 years.

G. COLLEGE PREPARATORY, BUSINESS ADMINISTRATION, AND SECRETARIAL, for boys and girls.

This course conforms to the requirements for admission to the Wharton School of the University of Pennsylvania; the School of Commerce, Accounts, and Finance of New York University; the Colleges of Business Administration of Boston and Syracuse Universities; the School of Commerce and Finance of Northeastern College; the Secretarial School of Simmons College; Clark College; and Springfield College.

Pupils desiring to continue their education in the colleges mentioned must include in their electives two years of French or Spanish, one year of algebra, and one year of geometry. In addition they are urged to take at least one year of physics or chemistry and one year of bookkeeping.

The offering in home economics.—Cooking and clothing construction were reported by a large proportion of the schools participating on the canvass in this project of the National Survey of Secondary Education. (See Table 23.) General courses were also reported. The most commonly reported general label of these courses was "homemaking." Home economics and domestic art and science were much less frequently reported. Particular aspects of homemaking

other than cooking and clothing construction were seldom mentioned by the respondents. Dietetics was reported by only a few schools, as was interior decorating, textiles, millinery, and tailoring. Certain of the specialized subjects appear only in the trade and technical schools. The percentages for the trade and technical schools are smaller than might be expected because all the trade schools were included in the calculation of percentages. Since some of these schools are for boys only, it is but natural that some of them would be without offering in this field. The size of the comprehensive high school had little effect on the proportion of respondents reporting the offering of the different subjects in this field.

On the average, about two years of work is offered in the different courses, excepting that less work is offered in the more specialized courses in dietetics, home mechanics, interior decorating, textiles, and millinery. (See Table 24.) There are some differences among the different types of schools: The means are uniformly larger for the trade schools and the mean for homemaking is larger for the technical school.

TABLE 23.—*Percentages of schools offering courses in home economics*

Subjects	Type of school							
	Comprehensive				Academic (90)	Trade (87)	Technical	Commercial
	249 and fewer (192)	250–499 (139)	500 and more (429)	Total (760)				
1	2	3	4	5	6	7	8	9
Cooking	14.6	14.4	17.5	16.2	4.4	9.1	41.8	12.6
Clothing construction	40.6	57.6	59.4	54.3	33.3	27.6	11.2	25.0
Dietetics			1.2	.7	1.1		5.9	
Domestic art and science	3.1	1.4	4.0	3.6	5.6			
Home economics	5.7	1.4	1.2	2.4	1.1		5.9	
Home mechanics	1.6		.5	.7		1.1		
Homemaking	44.3	51.8	48.0	47.8	40.0	24.1	17.6	18.8
Interior decorating			.9	.5	1.1	3.4		
Millinery					4.4	11.5	5.9	
Tailoring						5.7		
Textiles			.9	.5		4.6		
General courses[1]	53.1	54.6	53.2	53.6	46.7	24.1	23.5	18.8

[1] Including domestic art and science, home economics, and homemaking.

NOTE.—The numbers in parentheses indicate the number of schools represented.

TABLE 24.—*Mean numbers of years of work offered in courses in home economics*

Subject	Type of school							
	Comprehensive				Academic	Trade	Technical	Commercial
	249 and fewer	250–499	500 and more	Total				
1	2	3	4	5	6	7	8	9
Cooking	1.5	1.6	1.4	1.7	2.4	2.8	1.5	2.5
Clothing construction	2.5	1.5	2.0	2.0	2.0	2.7	2.4	1.5
Dietetics	.....	.....	.....	.....	.5	.....	1.0	.....
Domestic art and science	2.2	2.0	2.1	2.1	3.1	.....	.....	.....
Home economics	2.2	2.0	2.0	2.4	2.0	.....	.5	3.0
Home mechanics	1.0	.....	.5	.9	.....	1.0	.....	.....
Homemaking	1.8	1.6	1.0	1.6	1.6	3.3	4.0	.6
Interior decorating	.....	.....	.....	.8	.5	2.0	.....	.....
Millinery	.....	.....	.....	.....	.9	1.9	3.0	.....
Tailoring	.....	.....	.....	.....	.....	2.4	.....	.....
Textiles	.....	.....	.9	.5	.....	1.5	.....	.....

Enrollment in courses in home economics.—The data reported by Jessen indicate an increase in enrollment in these courses during the period from 1922 to 1928. In 1922, 14.99 per cent of 609,893 pupils enrolled in the high schools of nine States were enrolled in home economics. The percentage in 1928 was 20.32.[10] The data reported by the Federal Board for Vocational Education show still larger increases in the enrollment in vocational schools and classes. A total of 339,316 were enrolled in 1932. In 1928 the enrollment was 232,002, in 1924 it was 171,942, and in 1920 it was 48,938.[11] These data would indicate a marked increase in the number of girls who elect these courses.

Objectives and scope of work in home economics.—There are many evidences of change in conception and scope of the work in home economics. The skills involved in sewing and cooking are important, but they constitute only part of the training needed for homemaking and for worthy home membership. At least at the junior high school level, training in this field is considered important for all girls. This point of view has been well expressed in the course of study for the junior high schools of Long Beach, Calif.

[10] Jessen, Carl A. Op. cit., p. 159.

[11] Sixteenth Annual Report of the Federal Board for Vocational Education, 1932. p. 5.

Whether the girl becomes a wage earner between leaving school and marriage, whether she continues her wage-earning career for several years after marriage or devotes her whole time to the profession of homemaking, it matters little in relation to her need of preparation for homemaking. She may choose her meals in a cafeteria rather than prepare them in her own kitchen. She may select her clothing ready made rather than to construct it by her own skill. The more she knows of principles of food preparation and clothing construction the better choices she will make. The more knowledge she has of marketing and household buying, of home management and care of children, of the wise use of leisure, and how to get on with other people, the fuller and richer her life will be whenever and however it may be lived.

The general scope of the work to achieve this aim is suggested by the topics considered in a course required of girls for graduation from the high schools of Long Beach. The seven major topics treated are: (1) Homemaking as a vocation; (2) budgets and family expenses; (3) factors in purchasing the family's food; (4) principles needed by the individual or homemaker in the selection and serving of well-planned meals; (5) care of the house; (6) the house, its selection and furnishing from the standpoint of good design and cost; and (7) family relationships.

Increased emphasis is being placed on the relationships of the members of the family. Considerable time is given in the courses in Denver, Colo., to such problems as an appreciation of home life and mother; an understanding of the importance of habit formation as a basis for normal family life; an appreciation of economic values and the function of money as a means of life; the development of a right mental and social attitude toward the work of housekeeping as a contribution to the health, comfort, and happiness of the family; and appreciation of the problems involved in the care of younger children in the home; an understanding of the girl's responsibility during illness in the home; an understanding of the value of leisure; and an attitude of respect and loyalty to the community.

Child care and training received considerable recognition in the programs of training studied. Also, courses introduced for boys have proved to be popular. In some cases these courses have been built on a canvass of the interests and problems of boys in the realm of family adjustment, dress, etc.

The offering in agricultural subjects.—Since many of the schools included in the report in Table 25 are in urban communities, it is not to be expected that a large proportion of the schools would have extensive offerings in agriculture. About a fifth of the comprehensive schools and a sixth of the trade schools reported one or more courses in agriculture. The percentages are greater for the smaller comprehensive schools than for the larger schools, since the smaller schools are located in smaller communities with large proportions of pupils coming from the farms. Data are reported for nine agricultural schools.

General agriculture appears with highest frequency in the comprehensive schools and the academic schools reported only this general course. The different phases of agricultural work appear in different proportions of the schools. Animal husbandry, farm mechanics, and field crops are the subjects more commonly offered. Dairying is offered in a considerable proportion of the schools. A small proportion of the schools have courses in farm accounting, farm management, forestry, fruits, horticulture, poultry, and soils.

TABLE 25.—*Percentages of schools offering courses in agriculture*

Subject	Type of school						
	Comprehensive				Trade	Academic	Agricultural
	249 and fewer (192)	250–499 (139)	500 and more (424)	Total (760)	(87)	(90)	(9)
1	2	3	4	5	6	7	8
Agriculture (general)	30.7	23.7	10.7	18.2	5.7	[illegible]	33.3
Animal husbandry	26.0	25.2	8.6	16.1	16.1	.....	88.9
Dairying	13.5	12.2	3.3	7.5	11.5	.....	44.4
Farm accounting	2.1	.....	.....	.5	4.6	.....	.....
Farm management	5.2	2.9	1.2	2.5	3.4	.....	11.1
Farm mechanics	24.0	18.7	4.2	11.8	13.8	.....	55.6
Field crops	28.6	24.5	7.2	15.8	13.8	.....	88.9
Forestry	.5	.....	.5	.4	4.6	.....	11.1
Fruits	1.6	.....	.2	.5	4.6	.....	33.3
Horticulture	.5	3.6	1.6	1.7	6.9	.....	.....
Poultry	2.1	1.4	.2	.9	9.2	.....	11.1
Soils	1.6	.7	.5	.8	.....	.....	22.2

NOTE.—The numbers in parentheses indicate the number of schools represented.

TABLE 26.—*Mean numbers of years of work offered in various agricultural subjects*

Subject	Type of school						
	Comprehensive				Trade	Academic	Agricultural
	249 and fewer	250–499	500 and more	Total			
Agriculture (general)	1.9	1.5	1.8	1.8	3.6	1.4	2.0
Animal husbandry	.9	1.0	1.0	1.0	1.3	.....	1.2
Dairying	.8	.9	.9	.9	1.5	.....	1.1
Farm accounting	.5	.....	.....	.5	.8	.....	.....
Farm management	.8	.7	1.0	.8	.8	.....	1.0
Farm mechanics	1.1	1.4	1.3	1.3	3.2	.....	1.0
Field crops	1.0	1.0	1.0	1.0	1.3	.....	1.0
Forestry	1.0	.....	1.2	1.1	1.0	.....	1.0
Fruits	1.0	.....	.....	1.0	1.0	.....	1.0
Horticulture	1.0	1.0	1.1	1.1	1.0	.....	.....
Poultry	.8	.5	1.0	.8	1.1	.....	2.0
Soils	.6	1.0	.7	.7	.....	.....	.5

With the exception of general agriculture and, in some schools, farm mechanics, the different courses are offered for either a year or a semester. (See Table 26.) The mean number of units in general agriculture for the comprehensive schools is 1.8. It is larger for the trade and agricultural schools, although the meaning of these larger averages is not clear. The means for animal husbandry, dairying, farm management, farm mechanics, field crops, forestry, fruits, horticulture, poultry, and soils would indicate that when these courses are offered, they are offered for one year. Farm accounting is offered, on the average, for a half year. These programs of training provide short exposures in the different aspects of farming and training for general farming, but they do not generally provide for intensive preparation for any one type of farming.

Enrollment in courses in agriculture.—Jessen reported a decrease in the proportion of pupils enrolled in agricultural subjects during the interval between 1922 and 1928. The percentage was 4.56 for 1922 and 3.17 for 1928.[12] Since these data cover urban as well as rural communities, at least some of the shifts might be explained by the increase in the enrollment in the city schools. This increase, even though the proportion in the rural schools remained constant, would result in a reduction in the percentage in agriculture.

[12] Jessen, Carl A. Op. cit., p. 159.

The data reported by the Federal Board for Vocational Education indicate a steady increase in enrollment. (See Table 27.) The total enrollment for 1920 was 265,058; in 1925, it was 676,687; and in 1930, 981,649. The increase has been consistent in the day high-school classes, the evening schools, and the day-unit schools. The only decrease reported is for the part-time schools in 1930. The largest increase in recent years is for the evening school. The increase was from 35,192 in 1927–28 to 60,462 in 1929–30.

The extent to which instruction is being made available to rural children has been well summarized by Hamlin:

TABLE 27.—*Enrollments in federally aided agricultural departments in public schools, 1918–1930* [1]

Year	Total enrollment	All-day schools	Evening schools	Day-unit schools	Part-time schools
1	2	3	4	5	6
1930 [2]	981,649	113,728	60,462	9,957	4,164
1929	886,849	106,111	47,283	9,922	5,128
1928	858,456	96,941	35,192	8,310	4,458
1927	784,986	89,390	26,227	5,698	3,622
1926	753,418	82,431	19,239	5,142	2,716
1925	676,687	70,958	15,835	4,002	2,330
1924	652,594	65,358	15,227	3,256	2,143
1923	536,528	57,978	9,319	1,911	2,090
1922	475,828	52,961	1,333	.....	5,942
1921	324,247	40,763	1,139	.....	1,445
1920	265,058	31,301	.....	.....	.....
1919	194,895	19,933	.....	.....	.....
1918	164,186	15,450	.....	.....	.....

[1] Fourteenth Annual Report of the Federal Board for Vocational Education, 1930. p. 82.
[2] Figures for 1930 are provisional, subject to final audit of State accounts.

The number of high schools offering all-day or day-unit courses increased from 4,067 in 1927–28 to 4,487 in 1929–30. Considering that there were in 1920 in the United States 13,751 high schools in centers of fewer than 2,500 people, it can be roughly estimated that vocational agriculture has penetrated about a third of our rural high schools. Since many rural high schools are too small to support such a program, the portion of schools suitable for vocational agriculture in which it is already taught is considerably more than one-third. The extent of the program for adult farmers and for employed farm boys is much less satisfactory. Approximately 1 per cent of the adult farmers of the United States were enrolled in federally reimbursed evening classes in 1929–30. The percentage of employed farm boys 14 to 21 years of age attending reimbursed part-time classes was probably less than 1 per

cent, though the data on this point are less dependable than the data regarding percentage of adult attendance.[13]

Recent trends in agricultural education.—The recent developments in agricultural education have been effectively summarized in the Biennial Survey of Education, 1928–1930. The shifts reported by Hamlin in that report are in harmony with the changes noted by the staff at work on this project. Since extended investigation of the subject was not included in this project, his summary will be reported.

There has been a notable tendency during the biennium toward the inclusion in the high-school course of study of more materials dealing with farm management, with agricultural institutions and agricultural cooperation, and with the mechanical and engineering aspects of farming. Emphasis on the technical aspects of crop and livestock production has not been lessened but courses have been lengthened to include the new phases.

In 1929–30, 36 States reported that 26.2 per cent of the time devoted to vocational agriculture in that year was given to farm mechanics.[14] This subject has largely developed in the vocational agriculture curriculum during the present decade. Devoted largely at first to purely manipulative activities of a very simple sort, the farm mechanics course has lately tended toward much greater attention to the managerial and engineering phases, such as the selection of farm machinery and equipment, the planning of farm buildings and farm layouts, the installation of farm electrical equipment.[15]

It has recently been realized more fully than previously that a person who is to manage a farm involving 6 to 10 or more enterprises must have more training in their management than is involved in their separate study. General management courses have therefore come in, usually in the last year of high school, to supplement and integrate the enterprise studies made earlier in the curriculum. These involve studies of farm organization, farm budgeting and accounting, marketing, financing, the management of labor, law as it relates to the farm.

Some have recently held that greater gains are likely to come to the farm people through greater effectiveness in working together than through increased efficiency in individual production. The presence of an acute agricultural surplus problem throughout most of the decade resulting from increased individual efficiency has intensified the desire to put into the public schools more that will aid farmers in their cooperative enterprises. Interest along these lines has greatly increased within the past two years. As a result more students in vocational agriculture are studying the causes of failure and success among farmers'

[13] Hamlin, H. M. Agricultural Education. Ch. VII of Office of Education Bulletin 1931, No. 20, Biennial Survey of Education, 1928–1930. p. 272.

[14] Cheney, C. T. A Study of Vocational Farm Mechanics Courses in the High Schools of the United States. Unpublished master's thesis, Iowa State College, 1930. p. 88.

[15] Ibid., pp. 81–85.

cooperatives; more students are becoming acquainted with State and national cooperative organizations; more students are learning through practice to participate in farmers' group activities.

Discussions about methods in public-school agriculture have recently largely centered about the "conference method" of instruction.[16] Interest in this type of procedure has doubtless been increased because it has been found suited to the instruction of adults in evening classes, the older forms of classroom instruction having proved quite inadequate for adult groups. Undoubtedly, too, there has been carry-over from the methods used with adults to the methods used by these same teachers in instructing high-school groups. However, the conference plan of teaching was developed first with high-school groups; it is a type of "problem teaching," long well known to educators. It is significant that the opinion is rapidly crystallizing that the best method for teaching adults is also the best method for teaching adolescents.

There has been a general tendency to replace manipulative activities and memorization of fact materials with problem solving. The intellectual content of vocational agriculture courses is being enriched generally. Greater definiteness of aim is emphasized.

The earliest supervised practice programs under the Federal vocational education act consisted of individual home projects comprising one or two animals or an acre or less of crops. Gradually the scope of projects has been increased until now they are commonly large enough to involve the use of commercial methods and machinery and to parallel in practicality the farming operations of adults.

Early projects ran for one year or less. Now they are planned to begin at the opening of the high-school period and to grow and continue indefinitely. The "long-time" or "continuation" project, which is designed to give a boy a start in farming is now the accepted type of project.

Class projects of various sorts have been introduced to supplement individual projects. Some are entirely class owned and class managed. Others are owned by a private individual who shares their management with a class group. In still other cases cooperative features are introduced in connection with the individual projects, class members cooperating as far as it is practical in buying, selling, breeding, advertising, and insuring.

Finally it has come to be generally accepted that a teacher's responsibility for supervised practice is not satisfied when he has satisfactorily managed the individual and group projects of his students. "Supplementary farm practice," under the teacher's direction, is also called for and various States have set up plans for systematizing it. Full use of this device involves making the most educationally of all of the opportunities each boy has for practical work in farming.

The tendency has been accentuated in the past two years to emphasize more strongly increased scope of project, lengthening of the proj-

[16] See Conference Procedure in Teaching Vocational Agriculture, Bulletin No. 147, Agricultural Series No. 38, Federal Board for Vocational Education, June, 1930.

ect's duration, the use of class as well as individual projects, and of supplementary farm practice. Rapid changes are taking place in the nature and effectiveness of this part of the instructional program.[17]

6. SUMMARY STATEMENT CONCERNING PROGRAMS OF SECONDARY SCHOOLS

No systematic canvass has yet been made of the schools of the country to determine the number of specialized and comprehensive schools. Practically all schools in smaller communities are aimed to be comprehensive, but many of the larger cities have developed one or more types of specialized schools. The specialized type of organization has been adopted more often in the Eastern States than elsewhere in the Nation.

The teachers of different types of schools vary in their qualifications and in their judgments concerning the merits of different plans of organization. The teachers in the academic and comprehensive schools have more years of formal education than teachers in the trade, technical, and commercial schools. This contrast is to be explained in part by the larger proportion of vocational teachers in the specialized schools. The teachers of the vocational schools have had a greater amount of experience in occupations other than teaching.

There is large variation in the reactions of teachers concerning the most desirable form of organization of secondary education. Teachers of comprehensive schools favor the comprehensive school, and teachers in vocational schools favor the specialized vocational school. The percentage of teachers of industrial subjects in the comprehensive school favoring the comprehensive school was somewhat lower than were the percentages for teachers of other subjects. Contrasts similar to those just noted are found when one compares the two groups of teachers on their judgments as to the plan of organization which would serve best the needs for vocational training; that is, the teachers in vocational schools favored the vocational school and teachers in comprehensive schools favored the comprehensive school, although the percentage favoring the comprehensive school is not so large as secured when all the objectives of secondary

[17] Hamlin, H. M. Op. cit., pp. 274–276.

education were considered. Cooperative part-time training received large support from all groups of teachers.

There are some differences between the different types of schools in the administrative policies followed. Limitation of enrollment in the various courses was restricted to the opportunities for placement in the community in a considerable number of schools; the proportion following this practice was larger for the trade schools than for the other groups. A larger proportion of the trade schools than of other groups of schools restrict enrollment also to pupils qualified to profit by the training given.

Many evidences emerge of articulation of these schools with the vocational groups and employment conditions of the community. Arrangements are frequently made to allow credit for each year of study toward the attainment of full journeyman status. The amount allowed varies considerably and the median amount allowed is larger for the trade groups (1.19 years) than for the comprehensive groups (0.85 year). Articulation with the community is secured also by attempts to assist pupils in making adjustments when they are first employed and the utilization of judgments of employers and employees in developing the program of training.

Some differences are noted in the subjects included in the offerings of the different types of schools. However, there is much similarity in the lines of training provided. In the industrial field the same subjects predominate in the comprehensive and trade schools. The subjects appearing with high frequency in these two groups of schools are woodwork (bench), mechanical drafting, machine shop, electricity, automobile mechanics, printing, and sheet metal. In some of the large trade schools, a great variety of courses are offered. The amount of work offered in the different industrial courses is greater for the trade schools than for the comprehensive schools; the amount is greater for the larger comprehensive schools than for the smaller schools. Some of this work is known as industrial arts and some as vocational industrial education. A larger amount of time is spent in the shop in the vocational industrial work, work in mathematics and science is more specifically related to the shop work, and the teacher is more frequently an experienced tradesman.

The differences in the content of the different types of courses were not determined. The data on enrollment in industrial courses indicate an increase in enrollment and an increase in the proportion of pupils taking work of this type.

The offering in the commercial field in most schools is restricted to shorthand, typing, and bookkeeping. Office practice appears in a considerable number. Other courses offered in larger schools and commercial schools are salesmanship, business management, and retail distribution. On the average, a half year or full year of work is offered in each subject, and opportunity is not offered for intensive mastery of any one phase of commercial work. Some recent increases in enrollment for commercial courses were noted. The enrollment is largest in stenography and bookkeeping and smaller in the selling courses, whereas the opportunities for employment have been much larger in the selling positions.

The work in home economics stresses cooking and sewing, although increased recognition is being given to other phases of homemaking. Among the other considerations are the business aspects of home management, purchasing, care of house, selection and furnishing the home, family relationships, and child care. In some schools a large proportion of the boys are enrolled in home economics courses which have been adapted to their interests. Some increase is noted in the enrollment in courses in this field.

The offering in agriculture consists of courses in general agriculture and a semester or year course in the different phases of agriculture, including animal husbandry, dairying, farm mechanics, field crops, forestry, fruits, horticulture, poultry, and soils. As noted above for commercial work, opportunity is not provided for specialization in any single phase of the work or specialized farming. There has been an increase in the number of pupils enrolled in these courses, although when the number enrolled is related to the number enrolled in all the schools of the various States, the percentages have been reduced. Increased emphasis is being given to the management phase of farming, to cooperative marketing, and to farm mechanics. In the different fields of training, there are evidences of adaptation to the present conditions and educational needs.

CHAPTER III : PART-TIME COOPERATIVE CURRICULUMS

1. ADVANTAGES CLAIMED FOR PART-TIME COOPERATIVE CURRICULUMS

Part-time cooperative curriculums involve cooperation of school officials and employers in combining the facilities of the school and the facilities of the commercial or industrial establishment to provide more effective vocational training. Part of the time of the pupil is spent in school and part is given to actual work on the job. The school instruction consists mostly of the related or theoretical aspects of the training and the experiences on the job provide practice and training in the operations carried on by the worker. The school alone is limited in the extent to which it can provide training for the variety of occupations which are open to young people. Even for the lines of training offered, the criticism is sometimes made that the school shop provides a different situation than that met by the young worker when he is employed. Certain of the difficulties have been well stated in a bulletin of the Federal Board for Vocational Education.

> Unit-trade courses are costly, demanding a large outlay for equipment, supplies, and maintenance, and are difficult in their administration. The per capita cost is extremely high, since the physical conditions are such that they can offer intensive training to only a small selected group. The general industrial school, which was provided to meet the needs of small cities, has not developed to any considerable extent. There are a number of reasons why this is true, one of the chief ones being that the type of course which must be developed is often more difficult in its organization and administration than are unit-trade courses. The per capita cost also is high, and the instruction reaches only a small group.[1]

Thus, the cooperative curriculums are thought to have certain advantages over the regular full-time school curriculums. In these curriculums there is no problem of making available adequate modern equipment for purposes of instruction. To keep the equipment up to date in a school

[1] Part-time Cooperative Courses. Bulletin No. 78, Trade and Industrial series, No. 23, Federal Board for Vocational Education, 1922, pp. 7-8.

entails considerable expense, and certain of the larger pieces of machinery can not be supplied. There is also the difficulty of reproducing job conditions in the school. Under the cooperative plan pupils make contact with employers and jobs in connection with their training and many of them obtain employment in the establishment in which they had their training. Members of the staff of the commercial or industrial establishment are more likely to be competent as industrial workers than are the teachers in the school. One can less frequently say that those in charge of the work in the occupation are unfamiliar with the latest developments. However, they have not given so much attention to preparation for teaching beginning workers except as the work of the foreman with men under his direction is applicable.

Cooperative training is believed to be more effective than the old apprenticeship plan. The apprenticeship plan has practically disappeared in some occupations and it is proving unsatisfactory in others. The specialization under large-scale production is unfavorable for the successful operation of the apprenticeship plan. The chief inadequacies of the apprenticeship plan are the failure to provide a sufficiently varied experience in the occupation and the failure to provide supplementary related and technical instruction. If apprentices are not rotated through the different types of work, they become highly skilled in some aspect of the job, but they do not become broadly trained workers with competence to fit into different situations. There is the temptation of the employer to continue the apprentice at a task on which he is productive and fail to shift him to another task on which he is in need of training. The coordinator in a part-time cooperative program of training gives attention to the planning of a series of experiences which will give a desirable form of training. The second inadequacy, failure to give supplementary related and technical instruction under the cooperative plan, is cared for in the school instruction. Since about half of the time of the pupil is spent in the school, there is no danger of neglect of this phase of the training.

The bulletin of the Federal Board for Vocational Education is definite in its statement of belief in the superiority of part-time cooperative training.

This combination of instruction and plant experience does for the boy that which school instruction and shop work alone could not accomplish; that is, the cooperative part-time course gives the boy a far better training than he can secure through the limited experiences possible for the boy under the unit trade-school plan.[1]

2. THE PREVALENCE OF SCHOOLS HAVING COOPERATIVE PROGRAMS OF TRAINING

Cooperative training has received considerable emphasis in recent years. If the judgments of leaders in vocational education are correct, more extended use of this form of training can be expected in the future. For purposes of this study an attempt was made to get in touch with all those high schools or trade schools which reported on the preliminary inquiry forms that they have cooperative programs of training. One hundred and sixty-seven schools with such curriculums were located. These schools are found in all sections of the country. The Middle Western States lead with 54 schools; the Middle Atlantic have 40; the Western, 33; New England, 25; and the Southern, 15.

Part-time cooperative courses are used in larger proportions by trade schools than by those of any other type. Reference was made in Chapter I to the extent of use of such courses by 985 schools. A fourth of the trade schools furnishing information indicated that they had set up cooperative arrangements for one or more occupations. Nearly a fifth of the comprehensive schools receiving Federal aid report use of cooperative training, but the percentage for those without Federal aid is as low as 4.1. The percentage for the total group of 760 comprehensive schools is 9.6, less than half of that for the trade schools. The commercial schools have not been so active as the trade schools with respect to this practice; because of the much larger number of comprehensive schools in the country, most of the attempts to use cooperative part-time training in commercial work are made by comprehensive schools. Consequently, well over half of the programs reported on in this chapter were located in comprehensive schools.

3. ENROLLMENT OF SCHOOLS WITH COOPERATIVE CURRICULUMS

The size of the school is a factor affecting the provision for cooperative curriculums. Of 126 schools reporting enroll-

[1] Op. cit., p. 5.

ments, two-thirds have enrollments of more than 500 pupils, a sixth have between 250 and 500 pupils, and the remaining sixth have less than 250. Apparently the larger schools are attempting more in this type of training than the smaller, possibly because they have a greater need for it in their programs of studies, or because they can better afford to provide the time and staff for bringing about and fostering the contacts with employers so necessary to the success of cooperative curriculums. Also the larger schools are located in the larger communities where more opportunities are available for establishing cooperative arrangements. The smaller schools, however, might find it more advantageous to provide for cooperative training than to offer specialized vocational courses in the schools, since the number of pupils preparing for any one field may be too small to justify providing for equipment and teacher. Cooperative curriculums can be offered for only those occupations represented in the local community.

4. THE SUBJECTS OFFERED IN COOPERATIVE PROGRAMS

A great variety of occupations are represented in the cooperative programs of training. As many as 140 were located in the canvass of 167 schools. (See Table 28.) Some of these titles may cover the same field, but the names reported were not sufficiently specific to permit combination. Of the 140 occupations, as many as 73 are in the industrial arts field. The occupations appearing with largest frequency are machine shop, automobile mechanics, electricity, printing, carpentry, pattern making, and sheet metal work. In the commercial field, 20 occupations are reported. Retail selling appears with highest frequency, being used in as many as 33 schools. The other occupations in household arts, agriculture, and a miscellaneous group appear infrequently. A great variety of curriculums is offered, but the vocational curriculums commonly offered entirely in the school also appear most frequently in the list of part-time curriculums. However, training is made available for some occupations that could not be provided at all by the school without cooperative arrangements.

TABLE 28.—*Occupations trained for in 167 schools having cooperative programs of training, with the number of schools reporting each*

Industrial Arts Field

Machine shop	54	Power sewing	2
Automobile:		Sewing trades	2
Ignition	1	Shoemaking	2
Industry [1]	1	Strapper	2
Mechanic	39	Assembler	1
Painting	1	Blacksmithing	1
Electricity:		Boat work	1
Automobile	3	Boatbuilding	1
Electrician	29	Boiler man	1
Electrotype	1	Bookbinder	1
Shop	1	Boxmaker	1
Theater	1	Capmaker	1
Printing	29	Blue print work	1
Carpentry	22	Die making	1
Pattern making	18	Engineering:	
Drafting:		Engineering [1]	1
Drafting [1]	16	Mechanical	1
Machine	2	Power	1
Structural steel	1	Furniture	1
Sheetmetal	11	Garage	1
Plumber	8	Hosiery	1
Cabinetmaking	7	Lithography	1
Millwork	7	Masons	1
Toolmaking	7	Melter	1
Radio:		Metal grainer	1
Radio [1]	2	Metal trades	1
Service	1	Mill and cabinet	1
Technician	3	Painting and decorating	1
Painting	4	Steamfitter	1
Architectural drawing	3	Textiles	1
Body builder	3	Trimming	1
Steel worker	3	Upholstery	1
Die sinker	2	Welding	1
Foundry work	2	Wood finishing	1
Heat treating	2	Wood pattern	1
Molder	2	Woodwork	1
Ornamental iron	2		

Commercial Field

Retail selling	33	Banking	5
Clerical [1]	10	Stenography	5
Commercial [1]	8	Typing	5
Office practice	8	Messenger	3

[1] Not otherwise specified.

TABLE 28.—*Occupations trained for in 167 schools having cooperative programs of training, with the number of schools reporting each*—Con.

Commercial Field—Continued

Store practice	3	Dictaphone operator	1
Calculating machines	2	General office [1]	1
Merchandise packer	2	Multigraph	1
Bookkeeping	3	Office apprentice	1
Business training	1	Secretaries	1
Comptometer operator	1	Stock girl	1

Household Arts Field

Nursing	4	Dressmaking	1
Cooking	2	Foods	1
Housework	2	Home economics	1
Nursery	2		

Agricultural Field

Agriculture [1]	4	Dairy	1
Forestry and floriculture	2	Farmer	1
Fruit	2	Florist	1
Gardening	2	Landscape gardening	1
Poultry	2	Seasoning of lumber	1
Animal husbandry	1	Vocational agriculture	1

All Other Occupations

Chemist	3	Insurance	1
Laundry	3	Janitor	1
Pharmacy	3	Laboratory assistant	1
Telegraphy	3	Lens grinding	1
Jeweler	2	Lumber yard	1
Meat cutter	2	Maintenance [1]	1
Aviation	1	Optician	1
Baker	1	Service manager	1
Compositor	1	Service station operator	1
Decorating	1	Sign painting	1
Delivery	1	Tailoring	3
Dental hygiene	1	Tea room service	1
Dry cleaning	1	Telephone work	1
Factory	1	Theater	1
Hair dressing	1	Waiter	1
Industrial chemist	1		

[1] Not otherwise specified.

5. THE ENROLLMENTS IN COOPERATIVE CURRICULUMS

The enrollments in practically all cooperative curriculums are small. Some have only one pupil and many have as

few as five pupils. The median enrollments per school for the curriculums appearing most frequently and the median of all remaining curriculums are reported in Table 29. The largest median enrollment is for retail selling, the median being 35. The enrollment next in size is 12 for automobile mechanics. The median enrollments for machine shop in 51 schools is 10. The median for the 132 curriculums not listed in this table, those appearing in fewer than 15 schools, is only 5.

These data demonstrate clearly that schools using cooperative part-time training are not caring for large proportions of their pupils in these curriculums. It will be shown later that only part of the training for an occupation is of the cooperative type, but even with that fact considered, the pupil who enjoys the advantage of a cooperative curriculum is the unusual pupil. Some schools have arrangements for handling a considerable number of pupils, especially in the field of retail selling. In most of the schools, however, only a small number is cared for in this way.

TABLE 29.—*Median enrollments per school of cooperative curriculums*

Curriculum	Number of schools reporting enrollments	Median enrollment	Curriculum	Number of schools reporting enrollments	Median enrollment
Auto mechanics	36	12	Patternmaking	12	5
Carpentry	18	8	Printing	25	3
Drafting	14	7	Retail selling	27	35
Electricity	26	7	All other curriculums		5
Machine shop	51	10			

One of the difficulties in the administration of part-time cooperative training is the development of cooperative arrangements with industrial and commercial establishments. Many employers are reluctant to assume responsibility for training, especially if they are asked to aid in training a greater number of persons than they can absorb in their own establishment. Some, however, recognize the desirability of training their employees. Possibilities in cooperative training are distinctly limited unless employers come to accept training as one of their responsibilities.

6. DIVISION OF TIME BETWEEN SCHOOL AND WORK

Most cooperative training programs involve an exchange of two individuals—one is in school while the other is at work. Only about 18 per cent of the 167 schools reporting some form of cooperative training stated that the alternation of work and school did not involve an exchange of pupils. The length of alternate periods of work varies, and there may be one or more plans of alternation within a given school. The most common plans reported by the 167 schools in this study was that pupils spend alternate weeks in school and work (37 per cent); in slightly more than a fourth of the schools, pupils spend part of each day at school and part at work; about 7 per cent spend 2 weeks in school then 2 at work; a few spend alternate days or alternate months.

7. PROCEDURES FOR ASSIGNING PUPILS

There are many procedures for assigning pupils to cooperative work. Slightly more than a fifth of all schools studied reported that employers accept all pupils assigned by schools up to a designated number. A little more than two fifths stated that employers consider qualifications of pupils before accepting them. Other plans reported indicate that often the pupil must get his job first and then arrange his school program, that coordinators get jobs wherever possible, that openings for placement of pupils depend on economic conditions or the demand for workers. The varied procedures in placing pupils seem to indicate that up to the present, there are no uniform methods for placement among schools offering cooperative courses and that placement is either the result of the initiative of the pupil himself or the personal contacts and arrangements of the members of the staff of the school.

8. LENGTH OF COOPERATIVE COURSES

Cooperative programs of training have thus far required from four to five semesters of training for various occupations. (See Table 30.) Although the number of semesters of work is approximately equal for all occupations there is some variance in the number of hours pupils work in each of these semesters. (Table 30.) No doubt the number of hours worked per semester depends largely on the type of school

offering the course and the situation in which the pupil is working. Pupils training for the position of retail salesman work the least number of hours per semester (360), whereas those in patternmaking work nearly twice as much (650). Data reported by 123 cooperative pupils in cities studied intensively in this project show them to be working approximately 36 hours per week, which would equal 432 hours a semester of 24 weeks provided they spend half time at work and half time at school. Some of these plans operate throughout the school year. Under that arrangement, it is not necessary for the employers to replace the pupils by other workers during the summer months.

TABLE 30.—*The median number of semesters pupils have worked on cooperative basis when they have completed the full curriculum in various occupations; the number of hours pupils work per semester; the median amounts pupils are paid per day for cooperative work* [1]

Occupation	Median semesters of cooperative work	Median hours per semester	Average pay per day for cooperative work
1	2	3	4
Machine shop (54)	4.4	378	$2.00
Auto mechanics (39)	4.3	375	2.00
Retail selling and salesmanship (33)	4.4	360	1.88
Electricity (29)	4.6	425	2.00
Printing (29)	4.5	440	2.00
Carpentry building (22)	4.4	380	2.00
Patternmaking (18)	4.8	650	1.65
Drafting (16)	4.8	463	1.65
All others (132)	4.7	457	2.00

[1] All medians are based on the actual number of schools reporting the information for each item.

9. RATES OF PAY IN COOPERATIVE COURSES

The median pay per day for cooperative work reported by schools offering cooperative training is $2 for most occupations. Retail selling, pattern making, and drafting are slightly lower. (See Table 30.) A few schools reported as much as $4 per day for some occupations but this is exceptional and probably for advanced pupils only. If the average pupils work five days a week, the median wage per week would be $10. This is further borne out by the replies of 149 cooperative pupils who were studied intensively. These pupils reported a median salary of $9.58 per week, with the

first quartile at $5.47 and the third quartile at $12.21. The range was from $1 to $30. Differences may exist in salary per week for the two sexes, but that fact was not determined in this study.

10. LOCATION OF THE COOPERATIVE WORK IN THE PROGRAM OF THE PUPIL

The location of the cooperative work in the complete training programs of a school varies with the type of school and the type of occupation for which training is provided. The majority of schools reported that it came in the last two years of the training program, although a large number had cooperative work only in the last year. The arrangement probably depends in part on the number of pupils for which a school is able to provide arrangements or the extent of the need for intensive training under the conditions of the employment.

11. ILLUSTRATIONS OF COOPERATIVE PROGRAMS

Before completing the picture of cooperative programs of training, two schools with unique programs should be mentioned. In Bridgeport, Conn., instead of an alternation between school and work there is an alternation between regular high school and trade school Pupils spend the mornings at one school, afternoons at the other. In the high school pupils are required to take English and one social science, and they may elect one other subject; in the trade school they select one shop. This cooperative trade-school curriculum begins in the tenth year of school and may be carried through three years of high school if desired; at the completion of this course pupils are granted both trade-school and high-school diplomas. This plan illustrates cooperation between schools, an important problem in the horizontal organization of secondary education when specialized schools are formed.

The Wilbur Wright Cooperative High School of Detroit offers cooperative training in auto mechanics, junior business, steam engineering, and merchandising. The entrance requirements are: The age of 16 years, completion of the ninth grade, and a good previous school record. After successful completion of one semester's work in full-time school classes, the pupil at the age of 16 is placed in cooperative employment

as an apprentice, working alternately 2 weeks in industry and 2 in school. His training in employment is organized similarly to that in school, and credit toward graduation is given in addition to wages for the time spent in employment. By attending school for 12 months per year the pupil can be graduated in the usual time with a high-school diploma and 2 years' intensive trade experience. School work is on the regular high-school level and is articulated closely with the shop training in industry. Numbers in the cooperative school are limited only by the available employment in organized apprenticeship training.

While most programs of part-time cooperative training are located in large communities, one occasionally finds them in operation in smaller communities. One such program was described in the editorial section of the School Review:

> The work is reported to have three objectives: (1) to give vocational training, (2) to provide vocational guidance, and (3) to develop better school attitudes. The evidence cited gives some notion of the extent to which these objectives are being attained.
>
> During the past 3 years 90 boys have taken cooperative industrial work. The boy attends school one-half day and is at work the other half at a chosen vocation. He takes two or three subjects in school and receives school credit for the down-town work. The work in school is related as closely as possible to the work on the job. The project has received Smith-Hughes indorsement. . . . The success of the plan depends rather largely on the good will and cooperativeness of the employers. Pupils are not paid when they first begin the work, but later on the employer pays something according to the worth of the boy. Under no circumstances is the boy allowed to take the place of a regular employee; his place is that of a learner and student. Generally speaking, the boys in this course are of the type who do not fare well in academic subjects. Many, perhaps most, of them would normally drop school long before graduation.
>
> Eighteen vocations are represented. Twenty-nine boys have engaged in automobile mechanics; 6 in automobile service; 6 in electricity; 4 in radio; 3 in sheet-metal work; 2 in photography; 2 in cabinet work; 2 in shoe repair; 2 in drug-store work; 2 in printing; 2 in bookkeeping; and 1 each in plumbing, greenhouse culture, tailoring, bakery, creamery, newspaper reporting, and farming. There have been 32 salesmen, 8 of whom worked in grocery stores, 8 in clothing stores, 3 as automobile salesmen, 2 in shoe stores, and 2 in hardware stores.
>
> The excess in the number of employments represented in this list over the total of 90 different boys who have been reported as taking the work is explained by the shift of some of the boys from one occupation to some

other. Thirty-two boys, or 36 per cent of all, shifted from one occupation to another or dropped cooperative work to resume a full school schedule. Some guidance value of the plan may be inferred from some of these shifts.

Seventy-four, or 82 per cent, of the boys have been employed for pay after school hours and on Saturdays. It is the coordinator's opinion that these 74 boys "must have received some fairly definite and effective vocational training or they would not have been hired for after-school employment." He notes that the boys who changed vocations or dropped the work altogether were among those who did no after-school or Saturday work. A fourth of all the boys are now employed at full-time work, while a full two-fifths of all have been trained for full-time employment. Some of those who were trained for full-time employment were unable, on account of current economic conditions, to secure work. The evidence on full-time employment or preparation for it points to vocational training values of the plan.[1]

B. CHARACTERISTICS OF PUPILS ENROLLED IN PART-TIME COOPERATIVE COURSES

The pupils enrolled in part-time cooperative courses do not differ significantly from the pupils enrolled in similar courses offered on a full-time basis. Since most of the courses are in the commercial and industrial fields, the characteristics of these pupils are not entirely similar to the characteristics of the total group of pupils enrolled in the full-time school. The great majority of the pupils (76.4 per cent) were boys; practically all of the industrial pupils were boys and the commercial group contained many boys. The cooperative part-time pupils were about equally divided between grades 9, 10, 11, and 12. Nearly all of them (90 per cent) plan to graduate from high school. Those not planning to graduate reported the economic reason with largest frequency, but somewhat less frequently than pupils not in cooperative courses, possibly because they obtained some income from their cooperative work. Lack of interest in school work and opportunity for a good job were both reported by 13 per cent of the pupils as the reason for their plans not to graduate from high school. About an eighth planned to enter college and another eighth were undecided concerning college. That is, as many as a fourth were undecided as to whether or not they would continue their education beyond high school. In nationality of fathers, education

[1] School Review 40: 13–14, January, 1932.

of fathers, occupation of fathers, occupation of mother, and size of family, the cooperative part-time pupils corresponded very closely to the pupils enrolled in the trade schools.

13. SUMMARY STATEMENT

Cooperative part-time training is a plan of preparation for vocational activities involving a close cooperation of school and industry when the program is well developed. There is generally a coordinator whose duty it is to foster amicable and cooperative relationships between school and industry so that the training facilities of both may be utilized to the fullest extent in order to prepare boys and girls for various occupations in the most beneficial way.

Pupils generally work in pairs and spend alternate weeks in school and industry. Industry gives them intensive specialized trade training; the school gives them training closely related to their outside work. In general, pupils work on a cooperative basis for 4 or 5 semesters during their last 2 years in high school. They work about 36 hours a week on the job. For this amount of time they received in 1930–31 about $10. The coordinator is theoretically responsible for placing the pupil on the job and is his adviser and director throughout the entire cooperative curriculum.

Classes in cooperative training had in the year under consideration small enrollments in most schools. These enrollments were frequently limited to the number of cooperative arrangements the school workers found it possible to set up. Training of this type is generally believed to be highly desirable by leaders in vocational education, but it can be adopted only as employers are similarly convinced of its desirability. Since part of the training is controlled by the school and another part is controlled by the employer, there is need for close cooperation if the training is to be effective.

CHAPTER IV : THE GUIDANCE OF PUPILS IN COMPREHENSIVE AND SPECIALIZED SCHOOL SYSTEMS

1. THE PROBLEMS OF GUIDANCE

The establishment of specialized schools creates many guidance problems different from those of the comprehensive schools. It is said that in the specialized set-up, pupils have a tendency to attend the school nearest their home, regardless of the type of training it offers, in order to be with friends or because of the social standing which they feel it will give them; that pupils often remain in a specialized school which does not offer training in line with their stated vocational objective; and that pupils in one specialized school are not acquainted with the educational offerings in other schools within the system. If these tendencies exist, then they should be overcome by a program of guidance so well developed that pupils in a specialized system will go to the school best fitted to their particular needs, interests, and capacities. These problems do not appear so difficult in the comprehensive school which offers all types of training for which there is demand, for the pupil is merely transferred to different curriculums within the same school.

However, many guidance problems of the two types of organization are identical, such as informing pupils of educational and occupational opportunities, and helping them determine the extent and nature of their abilities and interests. In contrasting these identical and nonidentical elements in the guidance programs of the comprehensive and specialized systems, certain questions confront us:

1. How do the schools inform their pupils about the educational opportunity in the local system or in higher institutions?
2. How do they inform pupils about occupational opportunities?
3. How do they help pupils in forming correct estimates of their abilities and interests?
4. How do they assist pupils in making decisions on the occupations they wish to enter?
5. How do they assist the pupils in obtaining placements in business or industry?

6. What follow-up service do these schools provide for their former pupils?
7. How is the guidance service organized?

2. THE PROCEDURE

In each of the schools studied intensively a check list of practices in guidance was filled out by the person who was primarily in charge of the guidance. Thirty usable replies were obtained, 9 of which were from comprehensive schools, and 21 from specialized schools. Of these 21 schools in the specialized systems, 7 are general high schools, 7 are trade schools, 4 are technical high schools, and 3 are commercial high schools. Naturally, the guidance problems in these two types of organization are different from each other: In the comprehensive system, where academic, commercial, and trade courses are given in one school, practically all types of guidance problems may be found under one roof; whereas, in the specialized system each school will have not only those guidance problems which are connected with the special type of education which it is attempting to provide, but also such problems as facilitating transfer of pupils from one school to another when there is a change of vocational objective, encouraging pupils to go to schools which best meet their needs and interests wherever these schools may be located, and overcoming any feelings on the part of the pupils that one type of school is inferior or superior to any other type of school in the system.

The major treatment of guidance is given in Monograph No. 14, Programs of Guidance. The present brief treatment based on a small number of schools studied intensively in this investigation of the horizontal organization of secondary education is presented to make comparisons of comprehensive and specialized secondary schools. While in some cases the numbers of schools using various practices are small, these numbers are converted into percentages to facilitate comparison.

3. INFORMING PUPILS ABOUT EDUCATIONAL OPPORTUNITIES

Guidance activities in any type of school system should give information and advice which assist the individual in deciding on an educational objective, preparing for it, and

carrying on the activities associated with it. To assist an individual in planning a program, the school should first of all present him with facts concerning the various educational opportunities which it is possible for him to enter.

How do the comprehensive and the vocational school systems undertake to inform their own pupils or prospective pupils about the educational opportunities in their respective systems? What means do they use to interpret their educational offerings so that the individual pupil may select that line of training which will be most economical of his time and most effective in preparing him for the activities he will probably carry on after leaving school?

TABLE 31.—*Percentages of schools using various procedures for informing pupils about educational opportunities*

Procedure for informing pupils	Comprehensive systems (9)	Specialized systems (21)
1	2	3
1. Publish the program of studies	100	81
2. Issue a pamphlet or booklet more elaborate than 1 describing opportunities offered in this school	44	67
3. Issue a handbook for the new pupil	56	33
4. Offer exploratory (tryout) courses	67	62
5. Arrange for representatives of higher institutions to talk before assemblies	67	43
6. Give talks explaining courses to pupils in the last grade of lower schools	67	81
7. Provide an "open-house" day for pupils in lower schools	44	67
8. Print a list and description of all opportunities for vocational or other training provided in community	22	43
Average percentage of schools	58	60

NOTE.—The numbers in parentheses indicate the number of schools represented.

Eight of the most common means used for giving this information with the percentages of schools which use each of the methods are presented in Table 31. All of the comprehensive schools and four-fifths of the specialized schools print or mimeograph a program of studies which gives the names of the curriculums offered and the arrangement of subjects within these curriculums. In providing more elaborate statements concerning their programs, however, the specialized schools lead the comprehensive types. In issuing handbooks which are designed to help the new pupils, more than

one-half of the comprehensive schools respond affirmatively as compared with about one-third for the specialized schools.

The fourth item concerning exploratory or try-out courses is important. Exploratory courses are offered by about two-thirds of all the schools. These exploratory courses are intended to give pupils a brief general picture of the specialized courses offered in a school, and they afford pupils the opportunity of trying out various types of work and training in order that they may select courses for specialization which are most in harmony with their interests and abilities. Exploratory courses may vary in length from a few weeks to a full year, depending on the type of school and the subject matter to be covered. In the high schools of Bridgeport, Conn., the entire first year of the 4-year high school (ninth grade) is called the exploratory year, and during that time, in addition to certain subjects required for all pupils, each pupil elects subjects in accordance with his vocational or educational interests, partly to discover to what extent he has the ability to follow them. On the basis of this try-out, and of further investigations along the lines of these interests, a curriculum designed to prepare him for some vocational or educational objective, or to give him further try-out, is selected by him with the assistance of his parents, and the school at the beginning of the second year of high school. The Boys' Technical High School in Milwaukee (grades 7–12) permits a pupil to elect a trade or shop subject upon completion of certain junior high school requirements, the election generally being made at the end of the ninth year. Boys may change from one shop to another at any time, preferably at the ends of semesters, but they must have a full semester in any shop to receive credit for it. The program is very flexible and a boy may try out three or four different shops before specializing in any one of them or before leaving school. Such plans enable pupils to examine various fields of training in the school and to select those that are most in line with their interests, needs, and abilities.

Practically all exploratory courses offered in comprehensive schools are given in the ninth grade; in the general and technical schools the majority are given in the ninth grade, but nearly as many are offered in the tenth, eleventh, and

twelfth grades, particularly in trade subjects. Trade schools are generally ungraded, and pupils may try out the shop subjects at any time. The commercial schools answering the guidance check list apparently do little with exploratory courses.

The fifth item in Table 31 shows 67 per cent of the comprehensive schools arranging for representatives of higher institutions to talk before assemblies, as contrasted with 43 per cent for the specialized schools. Since the pupils in vocational schools are less interested in higher education, it is to be expected that comprehensive schools would make more effort to inform pupils about the opportunities in higher institutions. In the last three items in Table 31, however, the specialized schools appear to be more active, for they lead the comprehensive schools in getting in contact with the pupils in the last grade of the lower schools, in providing "open-house" days for these pupils, and in providing a list and description of all opportunities for vocational and other training provided in the community, including those in high school, evening schools, part-time schools, private commercial schools, etc. In summary, it appears that the specialized systems of schools are carrying on as great a variety of activities to inform their pupils about their educational opportunities as are the comprehensive systems, for on the average 60 per cent of their schools are carrying on these activities to 58 per cent for the latter. There are certain adaptations to the particular needs of the pupils served by the two types of schools.

A variety of activities are used to inform pupils concerning occupational opportunities. (See Table 32.) Two-thirds of the comprehensive schools are offering a course in vocational information as compared with a little more than half of the schools in the specialized systems. However, only one out of every three of these comprehensive schools offering the course requires its pupils to take it as compared with four out of five of the specialized schools. A typical picture of this course as given in the comprehensive schools shows that it is given five 40-minute periods a week for 18 weeks in the ninth grade, while in the specialized schools it is given in the same grade five 45-minute periods a week for 20 weeks. All of the comprehensive high schools provide in their libraries literature dealing with occupations as contrasted with

four-fifths for the specialized schools; however, the latter group do much more than the former in providing, outside of course work, a reading list on occupations for distribution to pupils. Vocational opportunities in the community are set forth to the pupils in many more of the specialized schools than in those of the comprehensive type; this is done primarily in the courses on vocations.

TABLE 32.—*Percentages of schools using various procedures for informing pupils about occupational opportunities*

Procedure for informing pupils	Comprehensive systems (9)	Specialized systems (21)
1	2	3
1. Offer a course in vocational information	67	57
2. Provide in high-school library literature dealing with occupations	100	81
3. Provide a reading list on occupations for distribution to pupils	22	52
4. Set forth to pupils the vocational opportunities in the community	56	71
5. Conduct excursions to industrial plants and business establishments	78	86
6. Have a "vocational club"		14
7. Utilize extracurriculum activities generally for their guidance value	55	33
8. Show moving pictures of industries	56	62
9. Arrange for a series of talks on occupations by specialists	67	71
10. Arrange for a "guidance conference" for groups interested in specific occupations	56	24
11. Arrange for personal interviews of pupils interested in specific occupations with those engaged in them in the community	78	43
12. Have advisory committees from industries and business to inform pupils	11	14
Average per cent of schools	54	51

NOTE.—The numbers in parentheses indicate the number of schools represented.

Excursions to industrial and commercial establishments are utilized by a large majority of the schools. Extracurriculum activities are considered to be a part of this informative program in about half of the comprehensive and a third of the specialized schools. A small proportion of the specialized schools have a special "vocations" club which has a guidance function. In other schools, certain clubs are restricted to some occupational field or line of training. These activities serve also to inform pupils about the courses offered in the school and to help pupils explore their capacities and interests. Motion pictures supplement the excursions and readings in more than half of both types of schools. Talks by specialists, noted earlier as being used to give educational information, are frequently used also to inform pupils about occupations. The three remaining procedures in Table 32 ordinarily involve cooperation by lay people. The guidance conference, con-

sisting of talks on occupations, group discussions, and interviews, is reported by a half of the comprehensive and a fourth of the specialized schools. Personal interviews are arranged between pupils and those engaged in occupations in a much larger proportion of the schools. A small proportion have an advisory committee to aid in planning the program. These committees are usually charged with the responsibility of supervising the entire program of vocational education, but since guidance is an essential element in this program, their activities frequently comprehend the problems referred to by the term "guidance."

While there is some difference in the nature of the activities carried on, it can not be said that one type of school has developed a greater array of procedures than the other for informing pupils about occupations.

4. *ACTIVITIES WITH INDIVIDUAL PUPILS*

Inasmuch as guidance is finally concerned with the individual rather than with the group, provision for individual counseling becomes an important element in the guidance program. Practically all schools report some form of individual interview. However, only about a half of the comprehensive schools and a fourth of the specialized schools schedule regular periods for any of these interviews; we may, therefore, assume that the most of them are held on special request of the pupil or the counselor at convenient times. Records of interviews with pupils are kept by only a third of the comprehensive schools, whereas the specialized schools rank somewhat higher with a little more than one-half the schools carrying on this activity.

The most common type of interview is that which counselors hold with failing pupils or pupils not working up to capacity; this is carried on by three-fourths of the comprehensive and four-fifths of the specialized schools. Interviews concerning curriculum or educational plans are reported most commonly for pupils at the time of their admission in the case of comprehensive schools (56 per cent), but in the specialized schools they are held more often with seniors or pupils in the last grade of the school (52 per cent), with first-year pupils receiving second consideration (33 per cent).

Interviews concerning vocational plans are held most often with seniors (56 per cent) or with pupils leaving school before graduation (44 per cent) in the comprehensive schools, whereas in the specialized schools pupils leaving before graduation (48 per cent) and those who are entering the school for the first time (38 per cent) receive the most attention.

Another very important activity concerning individual pupils is an intensive systematic study of problem cases. Forty-four per cent of the comprehensive schools report that they are making these studies compared with 57 per cent of the specialized schools. Probably schools not stating that they make such an intensive systematic study to handle individual cases as they arise but make no attempt to organize this service. Taking all items into consideration we find that the comprehensive and specialized schools are practically equal in their activities with individual pupils.

5. ASSISTING IN OBTAINING PLACEMENTS

How do the comprehensive and specialized systems compare as regards the placement of their pupils in industry or business? It is evident that a school which prepares a pupil for a specific occupation in the business or industrial world and then allows this pupil to drift into a job wholly different from his field of training, where he makes little or no use of the skills or knowledge which he has acquired in high school without putting forth every effort to obtain a desirable placement for him, has a fundamental weakness in its program. A larger percentage of comprehensive schools (55 per cent) report provision for placement of pupils than was reported by the specialized schools (43 per cent). The placement in some of the specialized schools may be done so informally as to cause this item not to be specifically assigned to some member of the staff. In both types of schools the work often falls entirely under the control of the dean of girls or the dean of boys, for we find all the comprehensive schools and about one-half of the specialized schools which provide for placement giving responsibility for this important function to them. The schools in the specialized systems have gone further, however, and have placed some of the responsibility on other individuals. In one-fifth of their schools there is

an adviser, counselor, or personnel worker who aids in this function of placement either in coordination with or entirely apart from the deans of boys or girls; one-tenth have a large proportion of the classroom teachers who help pupils in this matter.

6. FOLLOW-UP TO FACILITATE VOCATIONAL ADJUSTMENT

A well-organized system of guidance is interested in what becomes of pupils after they leave school; it is not content to aid the pupil in choosing an occupation, in helping him to prepare for it, and assisting him in entering it, but it is concerned as to how he gets along in the new field of work, how he adjusts himself to it, and how he profits from his school training and experience. A follow-up of former pupils not only helps to throw light on the value and effectiveness of the school's training program and the guidance program, but it also aids an individual pupil who has entered an occupational field by giving some suggestion as to how adjustments to new lines of work may be made most easily. It will also reveal the needs of young workers and will assist the school in setting up a more useful and practical program of training. Of the schools which filled out the check list on guidance, however, only one-third of the comprehensive schools and about one-half of the schools of the specialized systems were making any follow-up of former pupils. A follow-up of pupils who enter occupations after graduation was provided for by only one-fifth of the comprehensive schools, as contrasted with one-third of the specialized schools; the follow-up of nongraduates was even lower, being carried on by only one-tenth of all schools.

7. THE ORGANIZATION OF THE GUIDANCE SERVICE

In contrasting the organization of the guidance service of the comprehensive and specialized systems, two points should be kept in mind. In all of the comprehensive schools there are both boys and girls, whereas in about one-third of the specialized schools there are boys only, in one-fifth girls only, and in one-half there are both sexes. Furthermore, in considering the specialized schools we find that each prepares its pupils for some one field of work. These two facts necessarily demand organizations of guidance suited to the particular needs of each school. Persons responsible for guid-

ance in the comprehensive and specialized schools are indicated in Table 33.

TABLE 33.—*Percentages of comprehensive and specialized schools with various persons responsible for guidance*

Persons responsible for guidance	Comprehensive systems (9)	Specialized systems (21)
1. Deans of boys	100	65
2. Deans of girls	78	71
3. Home-room teachers	89	43
4. Large proportion of classroom teachers	33	38
5. Advisers or counselors (other than deans)	33	38
6. Guidance committee of the faculty	33	24

NOTE.—The numbers in parentheses indicate the number of schools represented.

A dean of boys is found in all of the comprehensive schools, in about two-thirds of the specialized schools which enroll boys only, and in about half of those specialized schools which enroll both sexes. A dean of girls is found in three-fourths of the comprehensive schools, in seven-tenths of the specialized schools which enroll girls only, and in one-half of the specialized schools enrolling both sexes. Home-room teachers have responsibilities for guidance in twice as many comprehensive as specialized schools, but this may be accounted for by the fact that many of the specialized schools do not have home-room organization. Classroom teachers have guidance duties in only about a third of all schools studied; it is apparent that many administrators have separated the function of guidance from the classroom and have placed it in the hands of people specially qualified to do this type of work or have assigned it to home-room teachers who perhaps have a more intimate acquaintance with the problems of the pupils than have the classroom teachers. The chief differences between the practices in the two types of schools are in the extent of use of a dean of boys and in the extent of use of the home room.

An analysis of the functions of the different workers shows no consistent tendency to refer only certain types of responsibilities to workers of some one title. When one summarizes the activities of these different persons in a number of schools, each is assigned to practically all of the activities in at least some of the schools. Within a school, the duties are evidently

assigned to the person who is believed to have the capacity to handle them successfully.

8. SUMMARY

The comprehensive and the specialized systems of organization which were studied intensively do not differ greatly in their programs of guidance nor are there any outstanding differences on the average emphases on various phases of the program. Of 32 comparable items which have been discussed the comprehensive schools exceed the schools of the specialized systems on 17 items by an average difference of 17 per cent, while the specialized schools exceed the comprehensive schools on 15 items with an average difference of 12.6 per cent. While this is a rough basis of comparison, it can be said that the programs of guidance are approximately on a par. It is an interesting fact that in the problems of informing their pupils about educational and occupational opportunities, the averages of the two groups of schools do not differ by as much as 10 per cent. It is also to be noted that in the questions of placement and follow-up of pupils, and in the matter of providing a program intentionally flexible so that a pupil may transfer from one curriculum to another with little or no loss of credit, the averages of the two systems do not differ by more than 13 per cent.

Many of the guidance activities that have been canvassed are not being carried on by a large proportion of the schools. On the average, the procedures canvassed are being followed by approximately half of both types of institutions. While there are differences between the two types of schools in the extent of use of some particular procedure, they are placing approximate equal stress on the guidance program and on the major divisions of the program.

It is evident that both types have a long distance to go in the complete development of their guidance programs, for on the average only about half of the schools in both groups are using the various procedures. It should be recognized that a guidance system can only carry out its full responsibility to the individual and the social group insofar as it develops all sides of its program in accordance with the demands and needs of the individual school.

CHAPTER V: THE PROXIMITY OF RESIDENCE OF PUPILS TO SECONDARY SCHOOLS

1. THE ISSUE INVOLVED

In the first chapter of this monograph a number of problems related to the horizontal organization of secondary education are presented and discussed. Among these is one that raises a question on the extent to which specialized schools are able to serve pupils from all parts of the communities in which they are located. In a city, for example, in which the commercial training is confined to one school, it is desirable to know whether or not pupils who want this type of work will come to this school regardless of the distance they must travel, and, perhaps, regardless of the fact that in going to this school they pass another more conveniently located but which does not offer the type of training they are receiving at the school attended. There is always the temptation in such cases to attend the school that is nearest home even though it may not offer the type of training desired and which could be obtained in the school farther removed. Some cities in which a system of specialized schools is maintained meet this situation by locating all the secondary schools near the center of the community close enough to each other that the factors of distance or convenience are practically nonexistent with respect to any particular school as compared with the others. This is possible in smaller cities like Springfield, Mass., where the population is well concentrated within a rather limited area. On the other hand, it would be impossible to obviate the problem in this way in a large city covering a greater area.

2. THE NATURE OF THE INVESTIGATION

Methods of approach.—The problem presented above was believed to be of sufficient importance in the present investigation to merit separate study. It appears to involve several considerations and points of approach.

In the first place it may be approached from the point of view of trying to determine to what extent pupils came from

all parts of the community to attend a specialized school. This approach presents no great difficulties. There is the problem also of determining to what extent pupils who should go to a specialized school are failing to do so. This problem presents rather serious difficulties. One method of coping with it successfully might be to study the objectives and programs of all the pupils, or at least a random sampling of them, in order to discover how many are not getting the type of training they want and need that could be obtained in another school. To make such a study would be a long procedure involving the exercise of much subjective judgment and the results would be highly questionable. The same aspect of the problem may, however, be studied in a different way. It seems that pupils attending these schools should be able to indicate their reasons for attending the school in which they are enrolled. If they were asked to do this, the results should be of value in showing to what extent pupils do attend a school because it is near home or to what extent they give other reasons for their choice. If such replies were obtained in specialized and comprehensive schools of various types, some valuable comparisons would be possible. In order to obtain some facts of this type pupils were asked to check the most important reason for their coming to the school of their choice in preference to others.

Sources of data.—Two types of data were obtained in this study. The first type was the location of the residence of pupils attending certain secondary schools in certain cities. The second was the most important reason as indicated by the same pupils for coming to the school of their choice in preference to other schools.

The three cities selected for the study were Bridgeport, Conn., Indianapolis, Ind., and Milwaukee, Wis. In each city three schools were studied. In Bridgeport, 2 general high schools and a trade school were studied; in Indianapolis, 2 comprehensive high schools and a general high school; and in Milwaukee, 2 technical high schools and a general high school.

The data for this study were collected in the nine schools mentioned from the pupils selected as a sampling of their

respective populations. The methods used in making this sampling have already been described in Chapter I and need not be discussed here, except to say that all types of curriculums and specialization were represented in the sampling. The residence of these pupils was determined by asking them to give the names of the elementary schools nearest their homes. This was judged, after careful consideration, to be the simplest and most reliable method of locating the residence of pupils. It constitutes only an approximation of the real location but in most cities elementary schools are close enough together to furnish a reasonably accurate measure. Maps showing the location of the elementary schools were obtained in each city. The replies of the pupils together with the maps, provided the basis for calculating distances traveled by pupils to reach the school attended and also made it possible to draw maps of each city on which the residences of individual pupils could be spotted.

5. *DISTANCES TRAVELED FROM HOME TO SCHOOL BY PUPILS*

Distance traveled in Bridgeport, Conn.—For clarity and convenience in presentation of the facts, pupils were grouped according to the distance traveled and the percentage that each group constitutes of the total was calculated. These data are presented for each city and school in the following tables (Bridgeport, Table 34):

TABLE 34.—*Percentages of pupils traveling different distances to reach the school in which they were enrolled in Bridgeport, Conn.*

Number of miles	Central High School	Harding High School	State Trade School
1	2	3	4
Less than 1	50.2	0.8	38.0
1 to 2	43.3	79.4	50.0
2 to 3	6.6	19.1	12.0
3 to 4	.....	.8	.....
Median number of miles	1.0	1.6	1.2
Number of pupils	289	132	251

The Central and Harding High Schools of Bridgeport are very similar in programs, both being typical of what are designated in this investigation as general high schools. Neither offers much opportunity for specialization outside of college preparatory and commercial work. On the other hand, the State Trade School offers a highly specialized type of training for boys in a considerable number of trades and in several trades for girls. The two high schools have an arrangement with the Trade School through which pupils who desire both academic and trade training attend the high school for a half day and the trade school for a half day. In both high schools combined there were not more than 75 pupils of this type.

The data in Table 34 show that pupils attending each of the three schools come largely from within a radius of 2 miles. The greatest proportion in Central High School come less than 1 mile; in Harding High School between 1 and 2 miles; and in the Trade School between 1 and 2 miles. The results for schools in Bridgeport are somewhat unsatisfactory because of the large proportions of pupils whose residence could not be located due to the fact that many gave the names of parochial or other private schools whose location could not be obtained from the public-school authorities.

The results for Bridgeport are shown graphically in Figure 1. In the figure the small rectangles represent the schools and the round dots represent individual pupils. The pupils attending Central High School and the State Trade School come from rather widely scattered sections of the city, whereas Harding High School seems to draw from a rather small area not immediately surrounding the school itself. The situation might appear much different if the data were more nearly complete. Under the circumstances, it is probably unsafe to draw any conclusions.

Distance traveled in Indianapolis, Ind.—In Table 35 and Figure 2, data similar to those presented for Bridgeport are shown for Indianapolis. Arsenal Technical High School is a large comprehensive high school having a broad program that includes practically all types of work commonly offered at the secondary level and that provides opportunity for specialization in most of them.

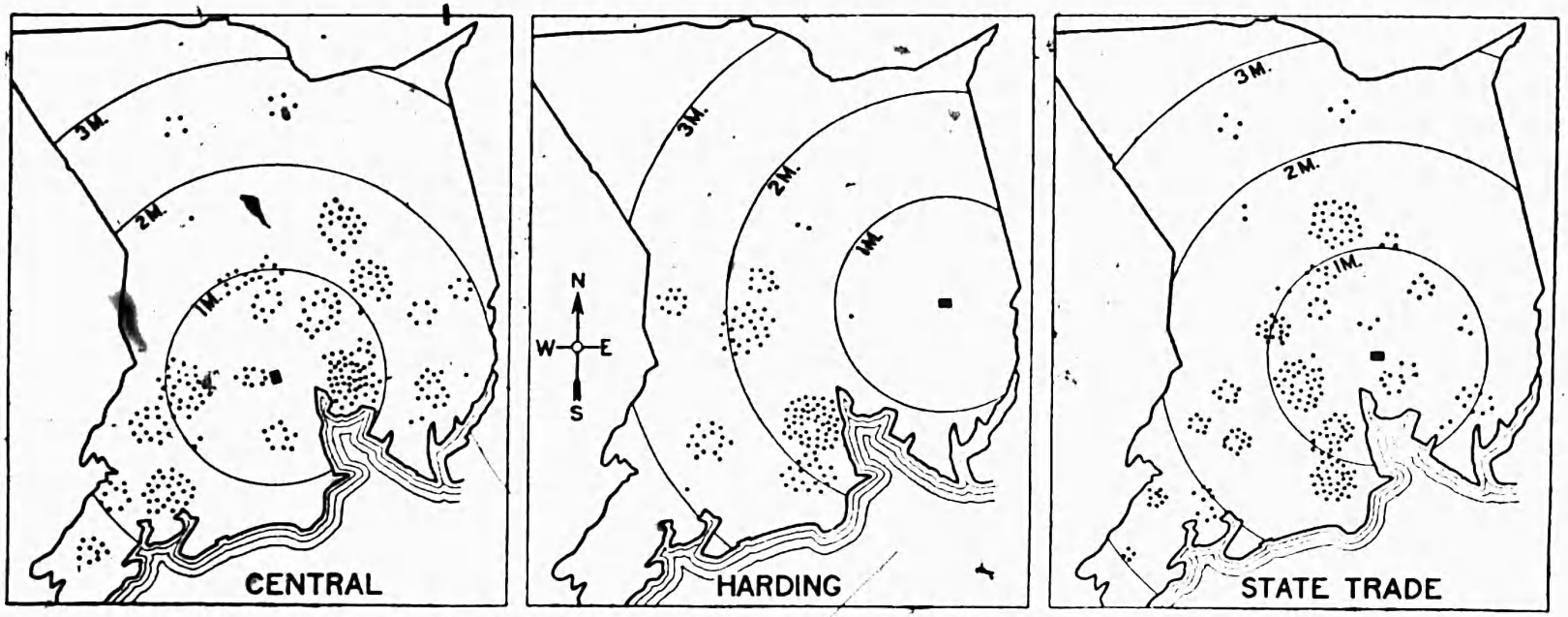

FIGURE 1.—Distribution of residence of pupils enrolled in different schools of Bridgeport, Conn.

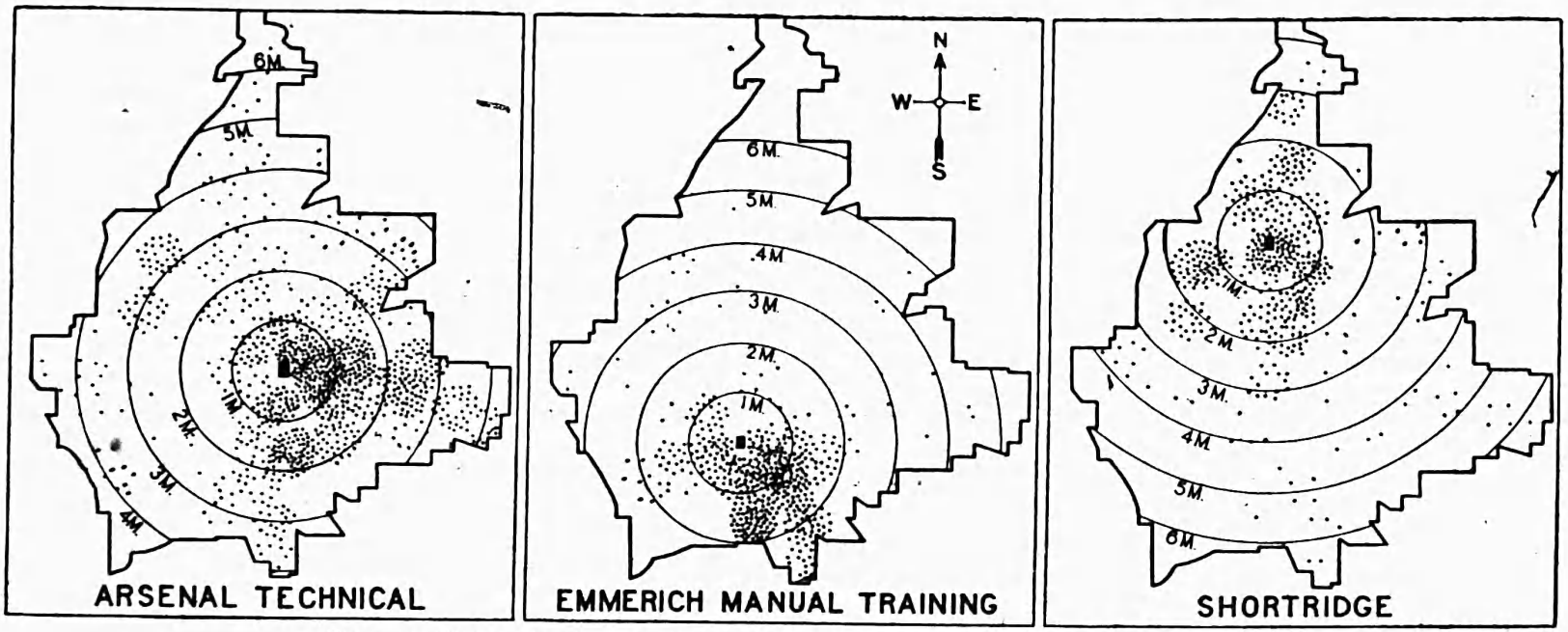

FIGURE 2.—Distribution of residence of pupils enrolled in different schools of Indianapolis, Ind.

TABLE 35.—*Percentages of pupils traveling different distances to reach the school in which they were enrolled in Indianapolis, Ind.*

Number of miles	Arsenal Technical High School	Emmerich Manual Training High School	Shortridge High School
1	2	3	4
Less than 1	23.7	40.3	39.1
1 to 2	39.1	45.5	36.3
2 to 3	26.1	6.3	15.2
3 to 4	10.1	7.1	4.6
4 to 5	.8	.8	2.2
5 to 6	.2	.0	2.6
Median number of miles	1.7	1.2	1.3
Number of pupils	982	479	501

Emmerich Manual Training High School was one of the first of the manual training schools of the country. It now has extensive offerings in the commercial field and it offers courses in the household arts and academic courses preparatory for college.

Shortridge High School is predominantly a college preparatory school with some work in the commercial field. It serves the most selected group economically of the high schools of Indianapolis. Approximately nine-tenths of the pupils in all three high schools of Indianapolis are drawn from within a radius of 3 miles. The proportions are slightly higher in Emmerich Manual Training High School and Shortridge High School. From within a radius of 2 miles Arsenal Technical High School draws 63.8 per cent; Shortridge High School, 75.4 per cent; and Emmerich Manual Training High School, 85.8 per cent. These schools have, respectively, 11.1 per cent, 9.4 per cent, and 7.9 per cent of their pupils coming 3 to 6 miles. The median distances traveled by the pupils of the three schools are in agreement with the foregoing data, greatest for Arsenal Technical and smallest for Manual Training. The Technical High School draws from the widest area and the Manual Training High School from the most restricted area. This is probably a reflection of local conditions rather than breadth of offering, since the program of Manual Training High School is much broader than that of Shortridge High School.

The figure for the three schools bears out the tabular data. There is some indication that the location of the school with respect to the city limits has some bearing on the matter. Arsenal Technical High School is more centrally located than the other two and seems to draw its pupils more equally from all sections of the city than they do. It also has the broadest and most comprehensive program and a location and facilities that are unusual for an urban high school. It is evident in the case of each school that it draws most heavily from those sections of the city nearest to it. This is probably in harmony with the character of the population in these sections. The Manual Training High School is in a section commonly known as an industrial district with a relatively large foreign population. Shortridge High School is in the best residential district of the city. The Technical High School is in a district whose character is approximately midway between these two. The programs of the three schools are of the type that would be likely to be most attractive to the people in their respective sections.

It should be added that pupils in Indianapolis are free to go to any high school in the city which they choose. They are not forced to attend the school located in the section of the city in which they reside.

The Arsenal Technical High School is a comprehensive high school, but its trade and technical sections are intended to serve the entire city. Consequently, its technical divisions are larger than would be true if the school served only a limited section of the city. The data which have been presented show that pupils do come from all parts of the city and that they travel greater distances than do pupils enrolled in the other schools. Whether a larger number would be enrolled in the trade and technical courses if they were made available in all the high schools can not be determined from the available data. They do indicate that some pupils come to the school from all sections of the city.

Distance traveled in Milwaukee, Wis.—The third city included in the study is Milwaukee. The situation there is different from that of either of the other two cities. There are two specialized high schools called technical high schools, one for boys and one for girls. These schools offer prepara-

tion for a number of trades and also for entrance to college, especially in the case of the boys, to engineering colleges. Commercial training is also offered in the school for girls. In addition to these two schools, Milwaukee maintains a number of general high schools located in various parts of the city, the plan being that these shall offer college preparatory and commercial training for the most part and that the two technical schools shall provide the type of training described for pupils from all parts of the city. One of the general high schools, the Riverside High School, was included in the study with the two technical high schools to afford a basis for comparing the areas which these respective schools serve. The results for Milwaukee schools are given in Table 36 and Figure 3.

TABLE 36.—*Percentages of pupils traveling different distances to reach the school in which they were enrolled in Milwaukee, Wis.*

Number of miles	Boys' Technical High School	Girls' Technical High School	Riverside High School
1	2	3	4
Less than 1	9.2	17.8	68.9
1 to 2	24.7	28.8	27.8
2 to 3	35.3	39.0	1.2
3 to 4	19.8	11.0	2.1
4 to 5	8.1	2.1	.....
5 to 6	1.6	1.2	.....
6 to 7	.2	.....	.....
11 to 12	1.3	.....	.....
Median number of miles	2.6	2.4	.7
Number of pupils	632	327	338

Milwaukee is the largest of the three cities considered, both in population, and area, so that pupils would be required to go greater distances if the specialized schools served the entire city. About 70 per cent of the boys in the technical high school travel less than 3 miles to reach the school; almost a third travel between 3 and 12 miles. In the Girls' Technical High School more than a third travel less than 2 miles; a half travel between 2 and 4 miles; and a seventh travel more than 4 miles. In the Riverside High School more than two-thirds live within 1 mile of the school, and practically all pupils live within 2 miles of it.

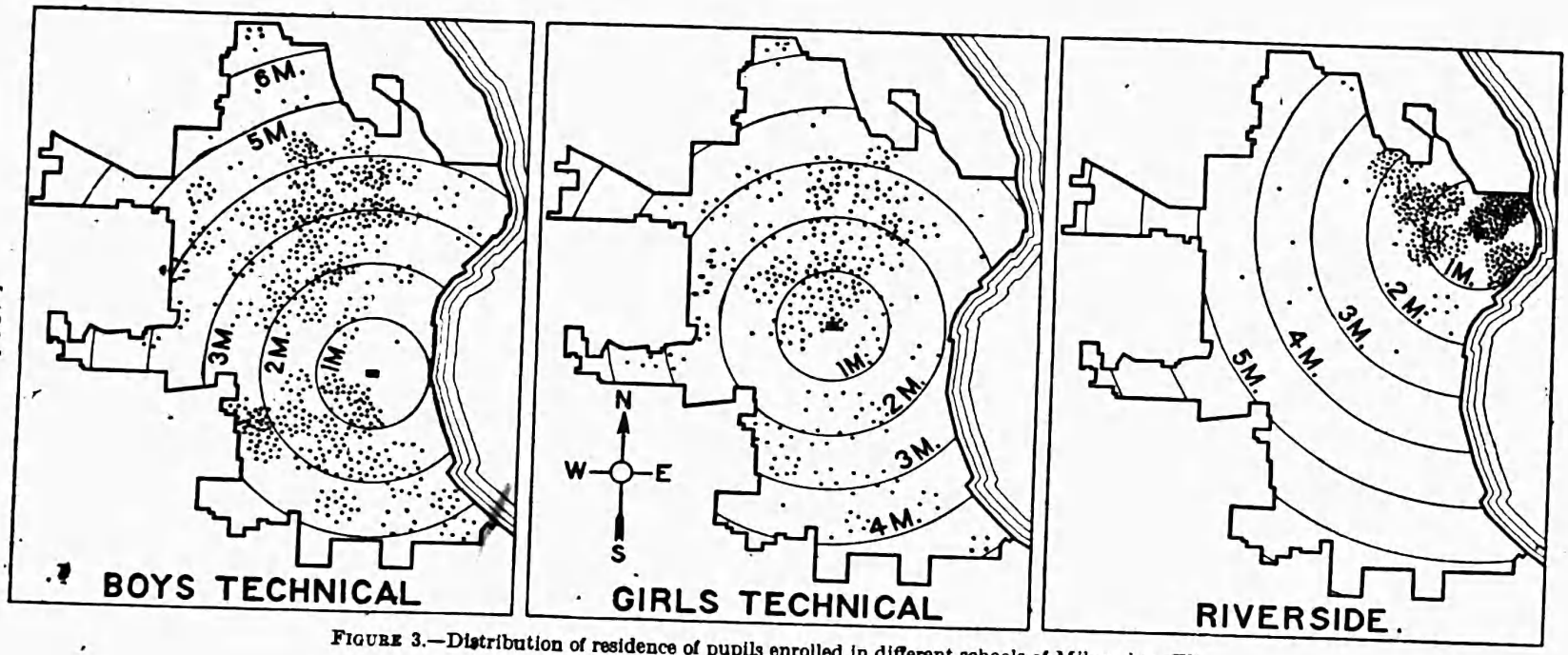

FIGURE 3.—Distribution of residence of pupils enrolled in different schools of Milwaukee, Wis.

There are marked contrasts here between the two specialized schools and the general high school, the students in the general school coming almost entirely from the immediate vicinity, while in the others the pupils come from all parts of the city. However, there is some indication that pupils in the specialized schools come in greater proportions from the sections of the city surrounding the school than from those farther away. This indicates that there is a tendency in Milwaukee for pupils living more than 4 miles away and girls who live more than 3 miles away not to go to the specialized school. This may be due to the distance or it may be due to other causes. One possible explanation has already been suggested in the discussion of the results in Indianapolis. If the school authorities, in locating these schools, attempt to place them in sections of the city where the largest porportion of the population is likely to want the kind of training provided, then one would expect larger proportions to attend the school from that section than from any other. It is also probable that the various schools are led by the needs and demands of the pupils whom they serve to develop the kind of program desired. A school located in an industrial section of the city drawing most of its pupils from families whose livelihood is gained by work in industry is more likely to develop a program which trains for entrance into the types of work represented there than a school located in a purely residential district. Other things being equal, a school will certainly draw more pupils from its immediate vicinity than a school farther away from that vicinity.

The evidence in the proximity of residence of pupils in the three cities considered indicates that some pupils travel great distances to attend a school that offers the types of training desired. If they feel that they can get the same training in a school nearby, they choose that one. No one would deny that this is the right thing for them to do. Their judgment in the matter may be in error, or their future plans may not be formulated definitely enough for them to make a decision as to the type of school to enter. The danger in such cases is that they may enter a specialized school, be drawn into a line of preparation for which they

are not suited, and waste much valuable time before the error is discovered. It would seem best in such cases for them to enter a school with a more general program and to remain there, at least until they have made some choice.

4. REASONS FOR CHOICE OF SCHOOL

In the check list filled out by pupils in the schools studied they were asked to indicate, among other things, their most important reason for coming to their school in preference to others. About 10 reasons were listed for the pupils' consideration. The 2 most frequently checked in practically all schools were "near home" and "desired vocational courses are available." None of the other reasons was checked by substantial proportions of pupils, and none is, moreover, germane to the present question. The proportions of pupils checking each of the two reasons mentioned in the nine schools are presented in Table 37.

TABLE 37.—*Percentages of pupils in nine secondary schools of Bridgeport, Conn., Indianapolis, Ind., and Milwaukee, Wis., checking certain reasons for selecting the school in which they are enrolled*

City and school	To be near home	To secure vocational courses
1	2	3
Bridgeport:		
Central (343)	49.9	23.6
Harding (297)	76.4	10.1
State Trade (480)	.8	76.7
Indianapolis:		
Arsenal Technical (1,056)	25.5	45.2
Manual Training (520)	56.3	11.2
Shortridge (555)	48.5	10.8
Milwaukee:		
Boys' Technical (820)	2.4	78.5
Girls' Technical (450)	4.2	34.7
Riverside (448)	61.8	8.0

NOTE.—The numbers in parentheses indicate the number of pupils reporting.

The results in Table 37 indicate that the pupils in the general high school, as typified by Central, Harding, Manual Training, Shortridge, and Riverside, check the first reason, namely, "near home", in about 50 per cent to 75 per cent of the cases; those in a comprehensive high school like Arsenal, check this reason in about 25 per cent of the cases;

and those in specialized schools like the trade and the technical high schools, in about 1 to 5 per cent of the cases. Approximately the reverse of this is true with regard to the proportions checking the second reason, "desired vocational courses are available." The differences are not so marked, however. More than three-fourths of the pupils in the Trade School and Boys' Technical School check this reason, but only about a third in the Girls' Technical School check it. The outstanding fact is the direct relationship shown between opportunities for specialization and the decreasing frequency with which convenience to home is given as the reason for selecting a certain school. In other words, this reason is given in practically negligible numbers of cases where the program of the school is definitely and highly specialized. This fact is shown even more strikingly in the returns from the total of 34 schools visited, where it was found that convenience to home is given as a reason for selection of a school by less than 2 per cent of all pupils enrolled in commercial, technical, and trade schools, whereas the same reason is given by approximately a third of those enrolled in comprehensive and general high schools. It is significant to find that this reason of nearness to home is given more frequently by girls than by boys. It also appeared in the data presented on mileage that girls do not travel so far as boys to attend a specialized school.

5. DATA NOT ADEQUATE TO SHOW ACCURATELY EFFECT OF PROXIMITY OF RESIDENCE

Proximity of residence is an important factor in the choice of school by pupils who attend the general and comprehensive high schools, since these schools are organized to serve a section of the city. According to the statements of pupils, the importance of this element decreases as the program of the school offers increasing opportunity for specialization, and in schools that have wholly specialized programs almost no pupils report it as the factor which determined the choice of school. In the specialized vocational schools, opportunity for specialized vocational training appears to be the dominant motive regardless of the distance traveled by the pupils. These data would suggest that few pupils enter the

specialized school because they happen to be conveniently located.

Whether or not more pupils would choose to enroll in the courses offered in the specialized schools if they were made available in a larger number of centers can not be concluded with certainty from the data presented in this chapter. The fact that most of the pupils enrolled in these schools came from the section of the city in which the school is located would suggest that proximity of residence is an important factor. However, data are not at hand to show the extent to which the contrast between the number attending the specialized vocational schools from adjoining and remote sections of the city can be explained by the existence of larger numbers of pupils of the type for which the school is intended in the section of the city in which the school is located. This fact would doubtlessly explain part of the difference. The statements of pupils would suggest that few attend the more specialized schools because of proximity. The data on pupils enrolled in the different schools show that some of the pupils do travel considerable distance to enter the specialized schools.

Attendance at a specialized secondary school because it is near at hand would be particularly objectionable if it caused pupils to take courses preparatory for one occupation when they desired to enter another. If such a situation exists, it was not uncovered in the present investigation.

The existence of a trade, technical, or commercial school in a community may cause children to give more thought to the line of work represented and to plan to follow it as a life career. This condition is probably not to be deplored if the pupils have developed a real interest in the field of work, if they actually plan to continue in the field in which they receive training, and if the fields of study and work are not too difficult and utilize the capacities which pupils possess.

CHAPTER VI : CHARACTERISTICS OF PUPILS IN VARIOUS CURRICULUMS AND SCHOOLS

1. SIGNIFICANCE AND SCOPE OF INVESTIGATION

Development of secondary education associated with changes in types of pupils served.—The development of secondary education has been accompanied by changes in the characteristics of the pupils served by secondary schools. As adolescents continued through high school in larger proportions, types of pupils not formerly served were admitted. Changes in the program, which were designed better to serve pupils already enrolled, attracted new pupils. These new pupils had somewhat different interests and needs which led to further changes in the program. The new features of the program thus adopted served to attract still other pupils. Factors outside the school were also instrumental in bringing about the popularization of secondary education, but these changes in the school have made contributions in the way indicated. The purpose of the studies reported in this chapter is to ascertain the character of this expanded secondary-school population. What are the personal, social, racial, educational, and vocational characteristics of the pupils enrolled in different curriculums and schools?

Pupils and schools included in investigation.—A statement in Chapter I described in a general way the procedures used in collecting data during the visits to 15 cities. A description was given of the methods used in sampling the pupils enrolled in the various types of schools studied. It is the purpose here to present the data thus collected from a sampling of the pupils enrolled in 34 full-time schools in 13 of the 15 cities visited.

The 34 schools included all the somewhat common types of full-time schools at the secondary level. Most of them were high schools of various kinds, but an effort was made to include representative trade schools in different parts of the country. The original plan called for a separate presentation of the data for each school studied, but after the

work of tabulation was completed it was evident that this could not be done within the time and space available. Consequently, the schools were thrown into groups similar in nature to those formed in connection with the study of the program described in the preceding chapter.

The groups formed were comprehensive, general, commercial, technical, and trade schools. The principles followed in assigning any school to a particular group were almost the same as those described in the preceding chapter, the main difference being that, with the knowledge and understanding of the schools gained through visitation, it was possible to group them more accurately and with more certainty than in the case of schools known only through their responses to an inquiry form. It will also be observed that there is no academic group among these schools. The reason for this is that no strictly academic high schools were found in these cities. Several were visited that are predominantly college preparatory, but not one was found to be exclusively so, and none was found that did not offer courses in some other line such as commerce, household arts, or industrial arts. All such schools were placed in the general group. The groups of schools were as follows:

Comprehensive group

Arsenal Technical High School, Indianapolis, Ind.
Emmerich Manual Training High School, Indianapolis, Ind.
Joliet Township High School, Joliet, Ill.
Manual Arts High School, Los Angeles, Calif.
Technical High School, Omaha, Nebr.
Chaffey Union High School, Ontario, Calif.
Central High School, Tulsa, Okla.

General group.

Central High School, Bridgeport, Conn.
Warren Harding High School, Bridgeport, Conn.
Northwestern High School, Detroit, Mich.
Shortridge High School, Indianapolis, Ind.
Central High School, La Crosse, Wis.
Riverside High School, Milwaukee, Wis.
Easton High School for Boys, New Orleans, La.
Wright High School for Girls, New Orleans, La.
Central High School, Omaha, Nebr.
Central High School, Springfield, Mass.
R. J. Reynolds High School, Winston-Salem, N.C.

Technical group

Cass Technical High School, Detroit, Mich.
Boys Technical and Trade High School, Milwaukee, Wis.
Girls Technical and Trade High School, Milwaukee, Wis.
Technical High School, Springfield, Mass.

Commercial group

High School of Commerce, Detroit, Mich.
Kohn High School of Commerce for Girls, New Orleans, La.
Peters High School of Commerce for Boys, New Orleans, La.
High School of Commerce, Springfield, Mass.

Trade group

Bridgeport State Trade School, Bridgeport, Conn.
Boys Junior Trade School, Detroit, Mich.
Building Trades School, Detroit, Mich.
Goldberg Girls Trade School, Detroit, Mich.
Wright Trade School, Detroit, Mich.
Isaac Delgado Trade School, New Orleans, La.
Francis T. Nicholls Trade School for Girls, New Orleans, La.
Trade School, Springfield, Mass.

It will be seen that there are 11 schools in the general group; 7 in the comprehensive, 4 in the technical, 4 in the commercial, and 8 in the trade group. There are small numbers in the technical and the commercial groups chiefly because true examples of these types are not common. Two so-called "technical" high schools are put in the comprehensive group because they are not actually restricted in their programs to technical work, but are among the most comprehensive of the large comprehensive high schools.

The pupils in these schools who filled out the check list were asked to indicate, among other things, the curriculum being followed. The multiplicity of responses made it impossible, especially in the applied fields like industrial arts, to keep all these separate. They were grouped, therefore, in a way that seemed most reasonable and logical and least likely to cover up any differences which might exist. These groupings of curriculums in the various types of schools were as follows:

Comprehensive schools

(*a*) General.
(*b*) Academic.
(*c*) Scientific.
(*d*) Commercial.
(*e*) Fine arts.
(*f*) Industrial arts.
(*g*) Agricultural.
(*h*) All others.

General schools

(*a*) General.
(*b*) Academic.
(*c*) Scientific.
(*d*) Commercial.
(*e*) Fine arts.
(*f*) Industrial arts.
(*g*) All others.

Technical schools

(*a*) College preparatory.
(*b*) Industrial arts.
(*c*) All others.

Commercial schools

All curriculums.

Trade schools

All curriculums.

These groupings represent, in general, the chief lines of specialization offered in the schools studied. It would have been interesting to study the characteristics of pupils specializing in different types of work like carpentry, auto mechanics, etc., in the industrial arts groups or those specializing in various types of commercial training. This was, however, beyond the possibilities in the present investigation.

In the following pages will be presented certain of the data on the characteristics of pupils grouped by type of school and curriculum as has just been described.

2. INTELLIGENCE

Data obtained from a variety of tests.—Arrangements were made in certain schools visited to administer intelligence tests to the pupils who filled out the check list. Because of the time and expense involved, this was done in a few cities only. An effort was made to include in this testing program at least one school of each type. Tests were given in 2 comprehensive, 4 general, 4 trade or vocational, and 1 commercial school. In 5 of these schools, including 2 trade, 1 general, 1 comprehensive, and the commercial school, the Otis Higher Examination, Form A, was given. In others, the Pressey Senior Classification Test was used. In a number of other schools included in the study test records from tests previously given were obtained for some of the pupils

who filled out the check list. These results were based in most cases on the Terman or Otis tests.

The obvious weakness of results such as these is that intelligence quotients based on different tests are not often directly comparable. This fact was pointed out in 1924 by Miller,[1] who also proposed at the same time a method of equating the results of various tests when administered to the same pupils. Although this could not be carried out in the present instance because not more than one test was given to most of the pupils, it was possible by use of the technique described by Miller to equate the Otis and Pressey tests which were used in all schools where tests were administered in connection with the present study. The equating process was accomplished on the basis of results obtained by administering both tests to 126 pupils in one of the general high schools visited. It showed the mean intelligence quotient of the group on the Pressey test to be 98 and on the Otis to be 102, a difference of 4 points. At the point 122, intelligence quotients on the 2 tests are interchangeable. From 122 upwards or downwards the differences increase. At 90 and 150 the differences are approximately 5 points, which is not greater than the probable error of individual measurement. It seems, therefore, that the error introduced by combining and averaging results obtained by the use of both tests can not be large. If the mean scores of other groups tested are closer to 122 than in this small group used for experimental purposes, the error would be even less than is indicated. On the other hand, if the means are further removed from that point the error is increased.

The test results.—With these considerations in mind we may proceed to a study of the results of tests given in the schools visited, either previously to this investigation or by the present investigators. The data, as in other tables, are presented by type of school and various curriculums within each school. (See Tables 38 and 39.)

[1] Miller, W. S. The Variation and Significance of Intelligence Quotients Obtained From Group Tests. Journal of Educational Psychology, 15: 359–366, September, 1924.

TABLE 38.—*Median intelligence quotients of boys enrolled in different grades in the various schools and curriculums*

School and curriculums	Grade 9		Grade 10		Grade 11		Grade 12		All grades	
	Number of cases	Median	Number of cases	Median	Number of cases	Median	Number of cases	Median	Number of cases	Median
1	2	3	4	5	6	7	8	9	10	11
Comprehensive school:										
General	56	95.0	84	97.0	62	102.3	54	102.7	256	98.9
Academic	41	107.7	132	104.7	125	106.1	131	106.6	429	105.9
Scientific	34	103.0	78	103.9	52	107.5	36	111.8	200	106.1
Commercial	65	98.7	117	98.8	93	101.7	70	101.1	345	100.0
Fine arts	20	86.4	30	101.7	29	105.6	34	103.3	113	101.9
Industrial arts	244	94.9	312	95.5	240	100.7	174	100.9	970	97.5
Others	46	96.0	133	98.1	136	101.6	108	103.6	423	100.7
General school:										
General	62	108.2	88	108.5	80	107.1	56	106.7	287	107.6
Academic	161	102.1	181	106.8	113	106.8	128	109.8	583	106.2
Scientific	27	106.5	34	108.2	12	107.5	----	----	78	108.0
Commercial	34	102.9	66	103.6	43	104.6	37	102.8	180	103.7
Industrial arts	88	92.6	74	94.1	38	96.1	23	100.6	223	94.6
Others	52	98.3	43	103.2	44	102.0	43	106.2	182	102.6
Technical school:										
College preparatory	----	----	26	113.3	35	112.7	20	116.7	81	114.0
Others	----	----	27	101.9	28	107.1	51	107.5	106	106.1
Commercial school:										
All curriculums	----	----	51	100.3	49	104.3	42	103.6	142	101.8
Trade school:										
All curriculums	----	----	----	----	----	----	----	----	[1] 692	92.4

[1] No classification into grades is here attempted for trade schools.

TABLE 39.—*Median intelligence quotients of girls enrolled in different grades in the various schools and curriculums*

School and curriculums	Grade 9		Grade 10		Grade 11		Grade 12		All grades	
	Number of cases	Median	Number of cases	Median	Number of cases	Median	Number of cases	Median	Number of cases	Median
1	2	3	4	5	6	7	8	9	10	11
Comprehensive school:										
General	16	98.0	31	103.0	36	101.1	46	101.8	129	101.6
Academic	27	105.5	89	111.0	89	107.3	103	107.6	308	108.2
Scientific	9	102.5	14	97.1	15	97.5	3	95.0	41	97.2
Commercial	99	96.1	208	98.4	156	100.2	133	99.9	596	98.9
Fine arts	8	96.7	26	106.7	40	102.2	52	104.5	126	103.4
Household arts	20	93.3	65	96.6	66	94.3	37	98.1	187	95.7
Others	66	93.9	74	98.0	82	98.5	94	102.5	316	98.7
General school:										
General	82	113.4	108	108.5	134	108.9	85	110.2	409	109.5
Academic	68	107.9	82	108.8	75	110.3	71	111.5	296	109.7
Commercial	78	102.5	155	104.1	105	103.4	87	102.9	425	103.5
Fine arts	12	115.0	11	98.8	12	102.0	21	101.0	56	102.9
Household arts	38	91.8	50	90.8	25	92.3	20	103.3	133	93.0
Others	28	104.0	36	99.5	47	101.4	45	102.1	155	102.0
Commercial school:										
All curriculums	73	97.8	196	98.6	160	100.2	71	105.3	500	98.9
Trade school:										
All curriculums	----	----	----	----	----	----	----	----	[1] 262	89.1

[1] No classification into grades is here attempted for trade schools.

In order of intelligence quotients from highest to lowest, the types of schools are technical, general, comprehensive, commercial, and trade. The intelligence quotients of those taking the college preparatory course in technical high schools are particularly high. These are largely pupils preparing for entrance to engineering schools. It is interesting to note this in view of the fact that as a result of the testing done during the World War the engineering branch of the service was found to have a higher rating than any other on Army Alpha. However, even with all pupils of technical high schools viewed as one group the rating still is higher than for any other type of school.

With respect to grades it is evident that some selection takes place with respect to the traits measured by the tests, as pupils progress through the secondary school. The median of the intelligence quotients of pupils in the tenth grade are consistently higher than those of pupils in the ninth grade; those of the eleventh grade are consistently higher than those of the tenth grade; and those of the twelfth grade are, on the whole, a little higher than those of the eleventh, although the differences at this point are not so consistent for the various groups. The mean of the medians of all groups weighted according to the number of cases in each group are as follows: Ninth grade 98.6, tenth grade 101, eleventh grade 103.7, and twelfth grade 104.5.

Consistent differences also occur between boys and girls and among different curriculum groups. The intelligence quotients of girls in the general, college preparatory, and fine arts curriculums are consistently higher than those for the boys. On the other hand, the boys in the technical, commercial, and trade curriculums, and the boys in the scientific curriculum in the comprehensive high schools are superior to the girls. Among the different curriculum groups, the college preparatory or academic groups are consistently higher than the others. Next below these two groups are the scientific and the general curriculums. The latter are slightly higher than the commercial pupils, and the lowest are those in the industrial and the fine arts groups. Those taking industrial arts in general high schools and trade schools are especially low.

These differences between averages should not cause one to ignore the very large amount of overlapping of the distributions of intelligence of the pupils in the various groups. All the groups contain many pupils on the different levels of ability. Some groups have a larger proportion of pupils on certain levels of intelligence than others. Reference should be made to the relatively small number of pupils represented in the data concerning intelligence. Reliance could not be placed on the data reported if they were not in accord with those from related studies previously made. Limitation of space does not permit a review of such studies.

TABLE 40.—*Percentages of pupils who reported having repeated a fraction of a grade or one or more grades in school*

Type of school and curriculums	Boys	Girls
1	2	3
Comprehensive school:		
General curriculum (B-471; G-247)	47.5	26.7
Academic curriculum (B-561; G-434)	37.1	22.3
Scientific curriculum (B-234; G-44)	34.6	34.1
Commercial curriculum (B-400; G-752)	38.7	28.3
Fine arts curriculum (B-134; G-143)	48.5	26.6
Industrial arts curriculum (B-1,065; G-0)	41.7	
Household arts curriculum (B-0; G-230)		36.9
Agriculture (B-56; G-0)	35.7	
Others (B-604; G-432)	38.4	27.3
General school:		
General curriculum (B-384; G-619)	41.7	31.0
Academic curriculum (B-832; G-716)	28.7	19.7
Scientific curriculum (B-121; G-0)	40.5	
Normal preparatory curriculum (B-0; G-37)		16.2
Commercial curriculum (B-303; G-761)	35.0	25.9
Fine arts curriculum (B-36; G-70)	50.0	22.9
Industrial arts curriculum (B-309; G-0)	49.2	
Household arts curriculum (B-0; G-158)		44.9
Others (B-269; G-287)	41.6	28.2
Technical school:		
College preparatory curriculum (B-562; G-71)	32.7	26.8
Commercial curriculum (B-0; G-203)		25.6
Industrial and household arts curriculum (B-472; G-112)	35.2	37.5
Others (B-708; G-350)	37.1	31.7
Commercial school:		
All curriculums (B-460; G-1,037)	35.7	26.5
Trade school:		
All curriculums (B-1,633; G-492)	45.9	32.5

NOTE.—The numbers in parentheses indicate the number of boys (B) and girls (G) represented.

3. SUCCESS IN SCHOOL WORK

Success in school work serves as a second indication of the relative capacity of pupils enrolled in the different curriculums. While it is a rough measure, larger differences can

not be without significance. These data bear directly on the statement sometimes made that pupils going into vocational curriculums are the failures from the academic curriculums. This hypothesis is partially supported by the data presented in Table 40. At least, the proportion of pupils reporting having repeated part of their school work is largest for the household arts and the industrial arts groups. However, the differences among the groups are not large. For the boys, the percentages answering affirmatively range from 28.7 in the academic group in the general high school to 50 of the fine arts group in the same type of school. The lowest percentages among types of school for the boys occur in the technical and commercial schools, being about 35 in both cases. The highest percentage is in the trade school.

The percentages answering affirmatively are consistently lower for girls than for boys. This is in line with what is generally known about the relative success of the sexes in school work. The highest percentage of girls having repeated grades is in the household arts group in general schools, with 44.9 per cent, and the lowest is 16.2 per cent of those in the normal school curriculum in the same type of school; not far behind are the girls in the academic curriculum, with 19.7 per cent. The lowest percentage of those having repeated grades for the various types of schools are in the commercial schools; in the other types the percentages are about the same.

These data bear out to a considerable extent what has already been presented concerning the intelligence of these groups.

4. COUNTRY OF BIRTH

Little variation is found among the different types of schools in the percentages of pupils who were born in the United States. (See Table 41.) The percentages vary only from 92 for girls in the commercial school to 97.6 for boys in the general schools. Boys of foreign birth are found somewhat more often in technical and trade schools and girls of foreign birth are more often registered in commercial and trade schools than in the other types. In view of the well-known lower socio-economic status of the immigrant into

this country in the last half century and previously to the inauguration of restricted immigration laws, one would expect boys and girls of this type to select, often because of necessity, those curriculums and types of schools where training is offered that is more immediately applicable and most likely to provide quick returns. It is also true that the technical, trade, and commercial schools studied here were for the most part located in cities with fairly large foreign populations. A glance at the list of such schools in the first part of the chapter bears out this statement.

TABLE 41.—*Percentages of pupils in different types of schools who were born in the United States*

Type of school	Boys		Girls	
	Total number of boys	Per cent born in the United States	Total number of girls	Per cent born in the United States
1	2	3	4	5
Comprehensive	3,567	96.9	2,296	97.0
General	2,291	97.6	2,692	96.7
Technical	1,782	92.1	745	96.2
Commercial	473	96.2	1,044	92.0
Trade	1,640	92.4	500	93.8

5. COUNTRY OF BIRTH OF FATHERS

What has just been presented on the country of birth of pupils is supplemented here by information of the country in which their fathers were born. These data are presented in detail in Table 42. The first column shows the percentages of pupils with fathers born in the United States. This ranges from 84.9 per cent for students in the academic curriculum in comprehensive high schools down to 43.1 per cent for those in trade schools. The technical high school is next lowest in the proportion of students with fathers born in this country, followed in order by those in commercial, general, and comprehensive high schools.

The largest percentages of foreign-born fathers of pupils in trade schools came from Poland and Italy, in technical schools from Germany and Poland, and in commercial schools from Russia and the British Empire. In the general and the

comprehensive types the fathers of foreign birth are well scattered with a preponderance from the British Empire, Germany, Russia, and Italy. On the whole, the groups in the types of schools which show most foreign parentage are those in which the highest percentage of foreign-born students were found. The reasons for their occurrence in these groups are probably the same as those already advanced.

TABLE 42.—*Percentages of fathers of pupils in various types of schools and curriculums who were born in the different countries*

School and curriculums	Country of birth										
	United States	Austria-Hungary	Balkan States	British Empire	Germany	Ireland	Italy	Poland	Russia	Scandinavia	All others
1	2	3	4	5	6	7	8	9	10	11	12
Comprehensive school:											
General (706)	82.3	1.3	2.6	2.8	3.1	0.7	2.0	0.1	1.8	1.5	1.8
Academic (1,001)	84.9	.9	1.1	3.2	1.5	.4	1.2	.4	3.1	1.5	1.8
Scientific (273)	76.5	.7	2.6	3.7	2.6	.7	3.3	.7	2.2	5.1	1.9
Commercial (1,127)	74.7	1.0	2.5	4.3	1.9	.6	4.6	1.4	3.5	3.0	2.1
Fine arts (273)	74.7	1.1	1.8	4.4	1.1	1.8	3.3	3.7	1.8	3.3	2.9
Industrial arts (1,027)	72.7	2.2	2.4	3.5	3.1	.9	7.4	1.5	1.5	2.2	2.4
Agriculture (56)	76.8	0	0	7.1	5.3	0	1.8	0	1.8	1.8	5.4
Household arts (235)	76.2	.4	3.8	5.9	3.4	0	3.0	.4	1.7	2.1	3.0
Others (1,022)	78.4	.8	2.7	3.4	2.2	.6	3.3	.7	2.1	3.6	2.0
General school:											
General (1,007)	79.2	1.8	1.3	5.0	2.2	1.5	2.0	.8	2.8	1.5	2.0
Academic (1,604)	74.7	1.9	1.6	4.7	1.9	1.1	3.6	1.1	6.4	1.4	1.7
Scientific (120)	84.2	1.7	....	1.7	5.0	0	.8	.8	3.3	.8	1.7
Commercial (1,054)	65.2	3.8	3.3	6.5	3.7	1.2	4.3	3.1	4.7	1.8	2.3
Fine arts (105)	77.1	0	1.0	3.8	2.9	0	0	1.0	11.4	1.0	1.9
Household arts (159)	89.9	.6	0	1.9	2.5	0	1.3	.6	0	2.5	.6
Industrial arts (305)	76.4	2.0	1.3	2.6	4.1	.7	4.6	1.3	2.0	3.6	1.3
Others (557)	76.7	1.6	1.5	5.2	2.7	.7	3.1	2.5	4.1	1.4	1.4
Technical school:											
College preparatory (636)	56.6	3.8	3.6	7.7	6.3	.9	2.7	8.5	4.1	1.2	4.5
Household and industrial arts (567)	52.7	6.9	4.9	2.5	11.5	.5	2.1	10.7	3.5	.9	3.7
Commercial (196)	59.7	4.1	5.6	.5	19.4	0	.5	4.6	1.5	1.0	3.1
Others (1,035)	53.1	4.7	5.7	9.6	6.9	1.0	2.3	7.7	3.3	1.8	3.8
Commercial school:											
All (1,479)	58.8	2.6	2.4	7.4	2.5	1.8	5.9	5.3	8.0	1.6	3.6
Trade school:											
All (2,065)	43.1	5.7	5.4	6.6	3.9	1.4	10.3	15.6	3.5	1.3	3.2

NOTE.—The numbers in parentheses indicate the numbers of fathers represented.

6. EDUCATION OF FATHERS

The education of fathers might be considered an indication of cultural status of different groups. Those who filled out the check list were asked to check the highest grade in school attained by their fathers. (See Table 43.) The low-

est item was "below seventh grade," no grades below the seventh being specified. Except for several groups in the general high schools and one in the comprehensive, all the medians fall between eighth and ninth grades. The exceptions are those in the general, academic, scientific, fine arts, and "others" groups in the general high schools and those in the academic curriculum in the comprehensive schools.

TABLE 43.—*Highest grade in school completed by fathers of pupils in different types of schools and curriculums*

School and curriculums	Number of cases	Median	First quartile	Third quartile
1	2	3	4	5
Comprehensive school:				
General	556	8.8	7.5	12.2
Academic	809	11.3	8.5	14.3
Scientific	231	8.9	8.1	12.8
Fine arts	218	9.0	8.2	12.7
Commercial	862	8.7	7.8	11.2
Industrial arts	785	8.6	7.1	11.4
Agriculture	48	8.9	8.2	14.0
Household arts	170	8.8	7.4	12.3
Others	816	8.8	8.1	12.4
General school:				
General	758	10.4	8.3	13.0
Academic	1,106	12.4	8.7	16.1
Scientific	77	10.2	8.1	14.9
Fine arts	80	12.4	9.3	14.0
Commercial	749	8.5	7.1	10.7
Household arts	113	8.5	(1)	11.3
Industrial arts	212	8.3	(1)	10.6
Others	397	9.9	8.0	13.4
Technical school:				
College preparatory	505	8.6	7.4	11.5
Industrial and household arts	457	8.2	(1)	8.8
Commercial	111	8.1	(1)	8.8
Others	748	8.5	7.3	10.7
Commercial school:				
All curriculums	880	8.7	(1)	12.2
Trade school:				
All curriculums	1,262	8.1	(1)	9.4

[1] Lower than 7.0.

The medians of these range from just below the tenth grade to above the twelfth grade. The lowest median is in the trade schools, followed by the technical, commercial, comprehensive, and general high schools in order. With the exception of the general high schools, none of the other types of schools differs markedly from each other. The first quartile of all groups ranges from lower than seventh grade in six groups to the ninth grade in the fine arts group in general high schools. The first quartile in most instances is at or

near the seventh or eighth grade. As would be expected, those groups having the highest medians also have the highest first quartiles. The third quartiles range from 8.84 in the industrial and household arts groups in the technical high school to 16.1 in the academic group in the general high school. There is more variation between curriculums and types of schools with respect to the third quartile than in the case of the median and the first quartile. This is owing to the greater variation in the upper ends of the distribution, to the fact that a minimum of schooling is required by most States, and to the organization of the check list which permitted no differentiation in amount of schooling below the seventh grade.

In every curriculum and type of school, except the commercial in technical schools and the commercial and trade schools, approximately 80 per cent of the respondents answer the question on the fathers' education. In the groups mentioned, however, only 55 to 60 per cent give a definitive answer. Most of those who do not do so, say they do not know. One might suspect here, in view of the results based on those in these groups who do answer as well as other facts, such as percentage of foreign born, etc., that these groups would be even lower as regards the extent of their fathers' education.

The dispersion of the different curriculum groups varies with the central tendencies; the higher the median, the greater the variability. For example, the semi-interquartile range [2] of those following the academic curriculum in general high schools is 3.7 and the median of this group is the highest of all. This measure for the fathers of pupils following the commercial curriculum in general high schools is 1.8 and this group has one of the lowest medians. A similar tendency is evident in other groups, although one can not be certain in the case of first quartiles falling below the seventh grade.

It seems clear from these data that technical, commercial, and trade schools and the curriculums commonly predominating in schools of this type draw more largely from lower socio-economic levels as indicated by the fathers' education

[2] Computed by use of the formula: $Q = \frac{Q_3 - Q_1}{2}$

than those schools and curriculums commonly associated with more academic types of training. This is especially marked in the case of the general high schools which are still largely college preparatory institutions.

7. OCCUPATIONS OF FATHERS

Preliminary to the presentation of data on the occupations of fathers, some explanation of the procedures used in classifying such occupations is necessary. Before attempting to classify the occupations of the fathers of high-school pupils a study was made of existing occupational classifications. In this connection, all systems of classifying occupations that could be found were studied. The simplest and perhaps most basic classification found was that of Taussig [3] by which all occupations are classified into the so-called five noncompeting groups. These are professional, semiprofessional, skilled, semiskilled, and unskilled. Practically all other classifications that have been used are, in essential features, amplifications of this plan. Among other systems of classification studied was that used by Terman in his Genetic Studies of Genius, that of Haggerty and Nash in the Virginia School Survey, and those used by Barr, Counts, Sims, Goodenough, and Johnson. Of these, the one devised and used by Counts in his Selective Character of American Secondary Education seemed most appropriate for use in the present investigation. However, this classification combines, in certain classes, a very wide range of economic conditions. This is particularly true of the proprietary and managerial groups. All proprietors, whether owners of a million-dollar business or of a fruit cart, are put into the same classification. The same criticism applies to the managerial group, as well as, in part at least, to certain other groups. The chief object in making certain modifications in the system of classifying occupations for the present study was to secure more homogeneous groupings. It is believed that the procedure used in the present study will serve this purpose. More detailed description of classification of previously used and also the development of the present one are presented in Monograph No. 4 of this Survey dealing with

[3] Taussig, F. W. Principles of Economics. Vol. II, pp. 134–148.

the secondary-school population. For the present purpose it will probably be sufficient to refer the reader to the classification as shown in the next few pages and to point out some of its original features as follows:

(*a*) The proprietary group has been broken up into four groups according to the size of the business owned, and the amount of training possessed by the individual.

(*b*) The managerial group has been broken up into four groups according to the number of workers supervised and the amount of training possessed by the individual.

(*c*) Workers in transportation and communication service have been placed in two groups according to the type of work done and the training of the individual.

(*d*) Commercial and clerical workers with 1 or more years of college study were included in the semiprofessional group. Those with less education were included in clerical and commercial subdivisions of the skilled group. (The inclusion of those having 1 year or more of college education with the semiprofessional group proved disadvantageous as it prevented fully accurate description of the total number entering clerical and commercial occupations.)

(*e*) The agricultural, artisan-proprietor, and miners, lumber-workers, and fishermen groups as used by Counts were eliminated because they either did not appear in the group included in the present investigation or they cut across other groups and could not be accurately classified. They were instead distributed to the various groups of the new classification as seemed best.

It should be mentioned that these departures from accepted practice were not made without considerable experience in the use of the other classifications. Counts' system was used with more than 15,000 cases in connection with one phase of the present study and it was chiefly on the basis of experience with this and the needs of the present study that revisions were made. The sole object of the new classification is to place an individual as accurately as possible in the socio-economic scale. It was necessary, in order to use the new classification, to obtain more facts regarding the occupation than were obtained by most other investigators. The data obtained include training or education, name of occu-

pation, title of position, name of employer, duties, ownership, and number of employees. These questions were arranged in such a way that the essential facts could be given by the respondent in a few minutes. In every case an attempt was made to take all the available information into account in classifying occupations. Where a reasonable doubt arose as to whether or not any individual belonged in a higher or lower class and no information definitively placed him in one or the other, he was always placed in the higher group. Only a small proportion of such cases occurred, however.

A word on justification of the inclusion of the training of workers in the classification of their occupation might not be inappropriate since Counts did not include it. In the present study differentiation was made among professional and semiprofessional owners and managers, commercial and clerical workers, and transportation and communication workers on different levels. In these divisions both training and characteristics of the position were considered. It was believed that these more general fields, such as proprietors and managers, would be divided into groups more homogeneous in socio-economic status if the training of the worker was considered in addition to the information obtained about the occupation. If the groups which appear on more than one level were combined, the classification would be practically the same as that developed by Counts.

Reference should be made also to the grouping of the occupations into the five groups—professional, semiprofessional, skilled, semiskilled, and unskilled. These groupings should be considered to be only rough groupings to facilitate comparisons of the percentages of pupils in different schools and curriculums with fathers employed in occupations at various levels. Comparisons for individual occupations would have been too detailed for the purposes of the present study.

The larger owners and executives were included in the professional group. Some may question the appropriateness of this arrangement. These groups have been shown in previous studies to be among the highest in socio-economic status. Another justification of the grouping lies in the tendency toward professionalization of positions in business and industry.

TABLE 44.—*Percentages of fathers of pupils enrolled in various schools and curriculums who are employed in different occupations*

Occupations by groups	Comprehensive school							
	General (728)	Academic (1,009)	Scientific (281)	Commercial (1,161)	Fine arts (282)	Industrial arts (1,094)	Household arts (237)	Others (1,055)
1	2	3	4	5	6	7	8	9
Professional group	4.7	11.3	10.6	3.2	9.2	3.7	4.6	6.5
Large owners and proprietors	1.4	2.9	2.1	.7	1.8	.7	.4	1.0
Professions	2.5	6.1	6.4	1.6	5.3	1.8	2.5	2.8
Executives	.8	2.3	2.1	.9	2.1	1.2	1.7	2.7
Semiprofessional group	15.4	26.6	25.3	15.8	22.3	15.6	17.3	22.1
Middle owners and proprietors	5.6	12.2	9.3	5.5	8.5	4.8	7.6	6.7
Semiprofessional workers	2.1	4.1	3.9	2.5	5.3	2.0	2.1	3.7
Managerial workers	7.7	10.3	12.1	7.8	8.5	8.8	7.6	11.7
Skilled group	36.7	32.8	27.9	36.2	34.7	33.9	36.8	31.2
Skilled small owners	5.4	5.8	3.6	4.7	8.2	4.8	5.5	2.8
Supervisory workers	11.5	9.7	12.5	11.4	9.2	10.3	11.8	11.0
Commercial workers [1]	4.0	5.0	.7	3.8	5.3	2.1	3.8	3.4
Clerical workers [1]	1.9	2.3	2.5	3.1	2.1	1.7	1.7	2.5
Building trades	4.1	3.1	4.3	5.7	4.6	6.3	6.8	4.3
Machine and related trades	8.1	4.9	1.8	5.6	3.5	6.4	5.1	5.2
Printing trades	.3	.5	-------	.5	------	.7	1.3	.4
Transportation and communication	1.4	1.5	2.5	1.4	1.8	1.6	1.3	1.6
Semiskilled group	29.8	22.2	25.0	31.3	24.1	31.1	30.0	28.2
Manufacturing, mechanical, and production workers	6.5	2.0	3.6	5.8	4.6	7.8	3.4	4.0
Transportation and communication	9.4	3.5	5.0	4.6	3.5	4.8	4.6	5.1
Semiskilled owners and proprietors	10.4	9.3	10.3	11.9	8.5	8.9	10.1	11.1
Small agents and managers	5.5	3.7	4.3	5.3	6.7	5.3	5.9	4.2
Public service [2]	1.5	2.3	1.8	1.7	.4	2.7	3.0	1.9
Personal service	1.5	1.4	-------	2.0	.4	1.6	3.0	1.9
Unskilled group	4.1	2.0	2.1	4.8	2.5	7.9	4.2	2.7
Common labor	4.1	2.0	2.1	4.8	2.5	7.9	4.2	2.7
Unclassified	9.3	5.4	9.3	8.9	7.1	7.8	7.1	9.1
Owners	.8	.7	1.1	.5	1.4	.7	-------	1.1
Managers	.5	1.0	.7	.9	.7	.4	.8	1.1
Professions	-------	.2	-------	.1	.4	.2	-------	.1
Transportation	.3	.1	.4	.3	1.4	.3	.4	.2
All others	7.7	3.4	7.1	7.1	3.2	6.2	5.9	6.6

[1] With less than 1 year of college education. Those with more education were included with semiprofessional workers.

[2] Through error, sales clerks in stores were included with public service.

TABLE 44.—*Percentages of fathers of pupils enrolled in various schools and curriculums who are employed in different occupations*—Contd.

Occupations by groups	General school							
	General (1,020)	Academic (1,593)	Scientific (122)	Commercial (1,089)	Fine arts (106)	Industrial arts (314)	Household arts (161)	Others (568)
1	10	11	12	13	14	15	16	17
Professional group	9.5	16.9	10.6	4.3	14.1	5.4	5.0	9.4
Large owners and proprietors	1.9	2.6	1.6	.6	.9	.3	1.9	2.1
Professions	5.2	9.0	4.1	1.5	6.6	2.2	1.2	4.8
Executives	2.4	5.3	4.9	2.2	6.6	2.9	1.9	2.5
Semiprofessional group	26.9	30.6	37.7	16.4	30.3	17.8	21.1	28.7
Middle owners and proprietors	9.1	11.9	13.1	5.3	12.3	3.8	8.1	9.9
Semiprofessional workers	3.8	5.8	4.1	1.9	3.8	2.5	4.3	4.4
Managerial workers	14.0	12.9	20.5	9.2	14.2	11.5	8.7	14.4
Skilled group	33.0	27.4	34.5	35.5	35.8	37.6	29.1	31.9
Skilled small owners	6.2	5.7	6.6	5.6	7.5	5.1	1.9	5.3
Supervisory workers	9.4	8.7	13.9	10.9	10.4	12.1	10.6	9.3
Commercial workers [1]	5.9	5.5	2.5	4.0	6.6	2.9	4.3	4.9
Clerical workers [1]	2.5	2.5	6.6	1.9	3.8	2.5	2.5	2.1
Building trades	2.8	1.1	.8	4.2	2.8	6.7	3.1	3.2
Machine and related trades	5.1	2.9	3.3	8.0	2.8	6.4	4.3	4.9
Printing trades	.3	.1	------	.2	------	.3	1.2	1.1
Transportation and communication	.8	.9	.8	.7	1.9	1.6	1.2	1.1
Semiskilled group	21.5	18.2	16.3	33.1	14.0	27.4	34.2	22.9
Manufacturing, mechanical, and production workers	2.8	1.9	.8	7.0	1.9	4.1	5.6	4.2
Transportation and communication	2.5	1.4	.8	3.6	.9	3.2	3.7	1.8
Semiskilled owners and proprietors	8.4	9.9	7.4	12.2	8.5	9.9	15.5	10.7
Small agents and managers	4.3	2.9	4.9	5.9	.9	5.1	5.6	2.8
Public service [2]	1.9	1.3	1.6	2.6	.9	3.8	1.9	1.6
Personal service	1.6	.8	.8	1.8	.9	1.3	1.9	1.8
Unskilled group	1.3	1.0	.8	2.2	------	3.8	5.0	1.6
Common labor	1.3	1.0	.8	2.2	------	3.8	5.0	1.6
Unclassified	8.0	5.8	------	8.5	5.6	1.9	5.6	5.6
Owners	.5	.6	------	.6	.9	.3	.6	.5
Managers	1.4	.7	------	1.4	.9	1.3	1.9	.7
Professions	.1	.6	------	------	------	------	------	------
Transportation	.1	.1	------	.2	------	.3	------	------
All others	5.9	3.8	------	6.3	3.8	6.1	3.1	4.4

[1] With less than 1 year of college education. Those with more education were included with semiprofessional workers.

[2] Through error, sales clerks in stores were included with public service.

TABLE 44.—*Percentages of fathers of pupils enrolled in various schools and curriculums who are employed in different occupations*—Contd.

Occupations by groups	Technical school				Commercial school (1,540)	Trade school (2,190)	Total (17,174)
	College preparatory (647)	Household and industrial arts (596)	Commercial (206)	Others (1,090)			
1	18	19	20	21	22	23	24
Professional group	6.1	2.8	2.0	4.0	3.8	3.8	6.6
Large owners and proprietors	1.1	.....	.....	.4	.4	.4	1.2
Professions	1.9	.8	1.0	1.7	1.1	1.4	3.1
Executives	3.1	2.0	1.0	1.9	2.3	2.0	2.4
Semiprofessional group	17.7	12.1	11.7	16.8	16.6	11.1	19.3
Middle owners and proprietors	5.7	2.2	2.4	5.0	5.2	2.6	6.5
Semiprofessional workers	2.0	1.0	1.0	2.5	2.8	1.3	2.9
Managerial workers	10.0	8.9	8.3	9.3	8.6	7.2	9.9
Skilled group	36.4	38.2	41.7	39.2	31.8	30.8	33.4
Skilled small owners	3.7	4.5	5.3	4.9	3.9	3.6	4.8
Supervisory workers	10.2	8.4	12.1	8.9	8.6	6.9	9.6
Commercial workers [1]	3.2	1.2	2.9	2.6	3.0	1.3	3.4
Clerical workers [1]	1.5	1.3	1.5	2.1	3.2	1.4	2.2
Building trades	4.2	6.2	5.8	5.9	4.4	4.8	4.3
Machine and related trades	12.4	15.6	13.6	13.2	7.5	11.8	7.6
Printing trades	.6	.5	.....	1.2	.6	.5	.5
Transportation and communication	.6	.5	.9	.4	.6	.5	1.0
Semiskilled group	27.9	32.3	28.6	27.8	32.7	29.5	27.5
Manufacturing, mechanical, and production workers	8.7	13.1	6.8	8.7	7.5	10.6	6.2
Transportation and communication	2.8	2.3	5.8	3.3	3.5	3.1	3.4
Semiskilled owners and proprietors	7.4	7.4	6.8	7.3	11.9	8.0	9.7
Small agents and managers	4.6	5.5	5.8	4.3	5.2	4.0	4.5
Public service [2]	2.9	1.8	2.4	2.0	2.7	2.1	2.1
Personal service	1.5	2.2	1.0	2.2	1.9	1.7	1.6
Unskilled group	5.4	6.4	5.3	3.7	3.8	9.6	4.2
Common labor	5.4	6.4	5.3	3.7	3.8	9.6	4.2
Unclassified	6.4	8.0	10.7	8.8	11.1	15.3	8.7
Owners	.5	.8	.....	.2	.5	.9	.6
Managers	.9	.7	.5	1.3	1.9	1.6	1.1
Professions	.2	.....	.....	.1	.2	.....	.1
Transportation	.....	.....	.....	.2	.2	.6	.2
All others	4.8	6.5	10.2	7.0	8.3	12.2	6.8

[1] With less than 1 year of college education. Those with more education were included with semiprofessional workers.

[2] Through error, sales clerks in stores were included with public service.

NOTE.—The numbers in parentheses indicate the numbers of fathers represented.

The percentages of pupils with fathers in the various occupational groups are shown by type of school and curriculum in Table 44. The sexes were at first kept separate but the results were so nearly alike that the data concerning them were combined and are so presented here. The percentages in the professional, semiprofessional, skilled, semiskilled, and unskilled groups are presented, as well as those in each of the subdivisions.

With respect to type of schools it is clear that the proportions from the professional and semiprofessional groups are highest in the general high school, followed in order by the comprehensive, commercial, technical, and trade schools. The highest proportions from the two lower groups—namely, the semiskilled and unskilled—are in the trade school followed in order by the commercial, technical, comprehensive, and general. This is almost the reverse of the first order, except that commercial and technical are interchanged due to the fact that more of the pupils in technical schools have fathers in the semiskilled or skilled group than do the pupils in commercial schools. In all schools except the general type most of the fathers of pupils are to be found in the skilled and semiskilled groups, followed by semiprofessional, professional, and unskilled, respectively. The data presented here leave little doubt that the pupils in general and comprehensive high schools are a more select group with respect to socio-economic status than those in vocational schools. The pupils in trade schools are lowest in economic status. Other evidence of this selection by types of schools has already been presented and further evidence will be shown later in this chapter.

Among the various curriculums the proportions for the professional and semiprofessional groups are largest in academic and scientific curriculums. However, the percentages for the general and fine-arts curriculums in general high schools and for the agriculture curriculum in comprehensive high schools are also high. Only a small number are enrolled in the agricultural curriculum, so that not much weight may be attached to the data on that group. The pupils in these curriculums all have from 35 to 47.7 per cent of fathers in the two upper groups. In contrast, the percentages of the pupils in the commercial and industrial-arts curriculums from these

two upper groups are as low as 13.7 for the commercial group in the technical school, and are not higher than 23.2 for the industrial-arts group in the general high school It is interesting to note that the college preparatory group in the technical high schools, although highest in intelligence, is not among the highest in socio-economic status as shown here and in previous tables. The correlation between these two variables is positive and substantial, but it is not unity.

The commercial and fine-arts pupils in comprehensive high schools, the industrial-arts pupils in general high schools, the pupils in high schools of commerce and in other curriculums in all schools have between 20 and 35 per cent of their fathers in the two upper groups. The percentages of the fathers in these same occupational groups of pupils taking general and industrial-arts curriculums in comprehensive high schools, of those taking commercial work in general high schools, of those taking industrial arts in technical high schools, and of those enrolled in trade schools are all between 15 and 20. Approximately the reverse of these facts is true for percentages of fathers in the two lower groups; that is, the pupils in those curriculums whose fathers fall in greatest proportions in the upper groups have the smallest proportions of fathers in the lower classifications and vice versa. The outstanding facts for all curriculums are that the fathers of those in academic and scientific curriculums stand highest on the scale; fathers of pupils in fine arts, "others," commercial, and general curriculums come next; and the fathers of students in industrial arts and trade curriculums are lowest on the socio-economic scale. Furthermore, the fathers of pupils in almost all curriculums are found in greater proportions in the middle or skilled group than in any other. There are exceptions to these generalizations in almost every case, depending on the type of school in which the pupils are enrolled. For example, the fathers of the general and fine-arts pupils in general high schools stand about as high as those of academic and scientific pupils in comprehensive high schools. Outstanding differences, therefore, exist among different groups of schools as well as among different curriculums. Most of the schools in the general group here are older and better-established schools with an academic tradition, which

causes them to draw from the "best families" in their respective cities. Such schools as Shortridge High School in Indianapolis, Central High School in Springfield, and Central High School in Omaha, which are in this group, are outstanding examples of this type. The comprehensive high schools are newer, more progressive in certain respects, and cater to all levels. The technical, commercial, and trade schools are for the most part highly specialized and draw from lower socio-economic levels where prospects for extended education are less favorable and in which early wage-earning is more prevalent.

TABLE 45.—*Percentages of mothers of pupils enrolled in various schools and curriculums who are employed outside the home*

School and curriculums	Boys		Girls	
	Number	Per cent	Number	Per cent
1	2	3	4	5
Comprehensive school:				
General	440	20.2	228	20.6
Academic	541	15.0	418	17.7
Scientific	223	21.1	39	17.9
Commercial	383	14.9	702	21.2
Fine arts	126	19.0	133	17.3
Industrial arts	1,013	17.2		
Household arts			219	21.9
Agriculture	53	15.1		
Others	573	17.8	408	18.1
General school:				
General	374	14.7	598	12.9
Academic	813	11.1	708	11.0
Scientific	118	11.0		
Normal			36	16.7
Commercial	287	17.4	729	14.3
Fine arts	32	28.1	69	14.5
Industrial arts	296	13.9		
Household arts			155	12.9
Others	256	16.0	265	17.7
Technical school:				
College preparatory	545	14.5	66	24.2
Commercial			192	16.7
Industrial and household arts	454	15.2	104	14.4
Others	688	17.0	340	16.8
Commercial school:				
All curriculums	454	11.7	979	14.8
Trade school:				
All curriculums	1,562	17.0	467	14.6

8. OCCUPATIONAL STATUS OF MOTHERS

In these days of progress toward equality of the sexes it is no longer considered a mark of low economic status for the mother of the family to be employed outside the home. In fact, it is in many instances a sign of superior attainments

and ambition on her part. That this is the case is borne out by the data presented in Table 45 in which are summarized the replies to the question as to whether or not the mother was employed outside the home.

From 10 to 20 per cent of the pupils' mothers are employed outside the home. There are no groups below 10 per cent and not many over 20 per cent. The notable exception is the "fine arts" boys in general high schools with 28.1 per cent of the mothers working outside the home. There are no consistent or large differences other than this one between types of schools or curriculums or between the sexes. There is a slight indication that the mothers of boys in technical, commercial, and trade schools and those of girls in the latter two types are less frequently employed outside the home than those in other schools. This may be a reflection of a tradition in these families that the place of the mother is in the home. The occupation of the father is on a lower economic level for these schools than for the other schools with more of the mothers employed.

An interesting thing about these data is the large proportion of mothers who are employed. Taking all groups together, almost a fifth of the mothers are employed. Although no comparable figures are available for the high-school population of other years, it is probable that this percentage represents a large increase over that of 25 or even 10 years ago.

9. SIZE OF FAMILY

Some data were obtained on the size of families of pupils enrolled in these schools. They will not be presented here in detailed tabular form but the important facts may be briefly stated. As regards types of schools, the data on size of family bear out what has already been shown regarding socio-economic status. That is, to the extent that size of family is an indication of socio-economic level, and that smaller families are found more frequently at the upper levels, the data indicate that the pupils in the general and comprehensive schools are drawn more largely from these levels than are the pupils in specialized schools. Here again, however, the differences between curriculums are greater within a type of school than among types of schools. The

median number of children, including the 1 answering the inquiry, varies between 3 and 5. The smaller families are found to be represented by pupils in academic and fine-arts curriculums, while the larger families occur in the case of pupils taking industrial and household arts. Between these groups are those in general, commercial, and scientific curriculums.

10. EXTENT OF TRANSFER OF PUPILS FROM ANOTHER SECONDARY SCHOOL

The extent to which pupils transfer from one secondary school to another is of considerable interest in a study of the horizontal organization of secondary education. A question has been raised by some as to whether or not pupils transfer to these specialized schools after they have become established in another secondary school. Many of the pupils in the vocational schools came from a secondary school other than a junior high school, indicating that they started in another secondary school and then transferred to the vocational school. Some of these transfers are doubtless associated with a change of residence within the city or from another city. Not all the transfers noted for the trade school in Table 46, 33.5 per cent for boys and 43.4 for girls, can be interpreted as transfers from another secondary school within the city.

A considerable number of the pupils of comprehensive schools also transferred from another secondary school. Most of these transfers are to be explained by a change in residence, since the different types of work are offered in these schools and few pupils would need to shift to another school to obtain types of work adapted to their needs. In some cases, however, the comprehensive high school is located in a city with some schools of the general type, so that some of the transfers might be credited to a shift to the comprehensive school to obtain a desired type of work. Whether or not the transfers are fewer than between curriculums within the same school can not be told from the data obtained in this investigation. They are adequate, however, to indicate that many pupils do shift from one school to another to obtain vocational courses.

TABLE 46.—*Percentages of pupils reporting transfer from a high school other than a junior high school to the school in which they were enrolled when they participated in the investigation*

School and curriculums	Boys		Girls	
	Number of cases	Per cent reporting transfer	Number of cases	Per cent reporting transfer
1	2	3	4	5
Comprehensive school:				
General	467	13.7	242	16.9
Academic	555	14.1	423	16.1
Scientific	230	12.2	40	7.5
Commercial	389	12.9	737	14.8
Fine arts	128	14.1	138	17.4
Industrial arts	1,056	11.3		
Household arts			228	15.4
Agriculture	55	16.4		
Others	595	12.3	421	13.8
General school:				
General	374	12.6	608	13.8
Academic	832	17.5	704	14.2
Scientific	113	11.5		
Normal			36	8.3
Commercial	296	9.5	744	10.1
Fine arts	35	8.6	64	12.5
Industrial arts	293	5.8		
Household arts			155	6.5
Others	267	11.2	287	14.2
Technical school:				
College prepatory	563	14.7	69	23.2
Commercial			196	11.3
Industrial arts and household arts	476	19.1	109	23.9
Others	715	16.9	347	18.7
Commercial school:				
All curriculums	451	30.8	1,015	26.8
Trade school:				
All curriculums	1,577	33.5	456	43.4

11. GRADE LOCATION AT TIME OF ENTRANCE TO TRADE SCHOOLS

The vocational character of the program of trade schools is well known. Some persons have deplored the lack of attention to the nonvocational objectives in these schools, especially for pupils who enter at an early grade level. Most, if not all, trade schools require that applicants for admission shall have completed the eighth grade or have reached an age, usually 16, when they are deemed to be too old to profit by the type of instruction and the associations usually found in elementary schools. Some of the pupils have attained a higher level.

The numbers and percentages of boys and girls who were in each grade when they transferred to trade school are shown in Figure 4. One and three-tenths per cent of the boys were in the sixth grade; 6.5 per cent were in the seventh. Of the girls none was in the sixth and 3.9 per cent were in the seventh

grade at the time of transfer. A total of 7.8 per cent of the boys and 3.9 per cent of the girls, therefore, had not reached or finished the eighth grade at the time of entrance to the trade school. The largest numbers and proportions of both sexes were in the ninth and tenth grades at the time of transfer. This includes more than two-thirds of the entire group.

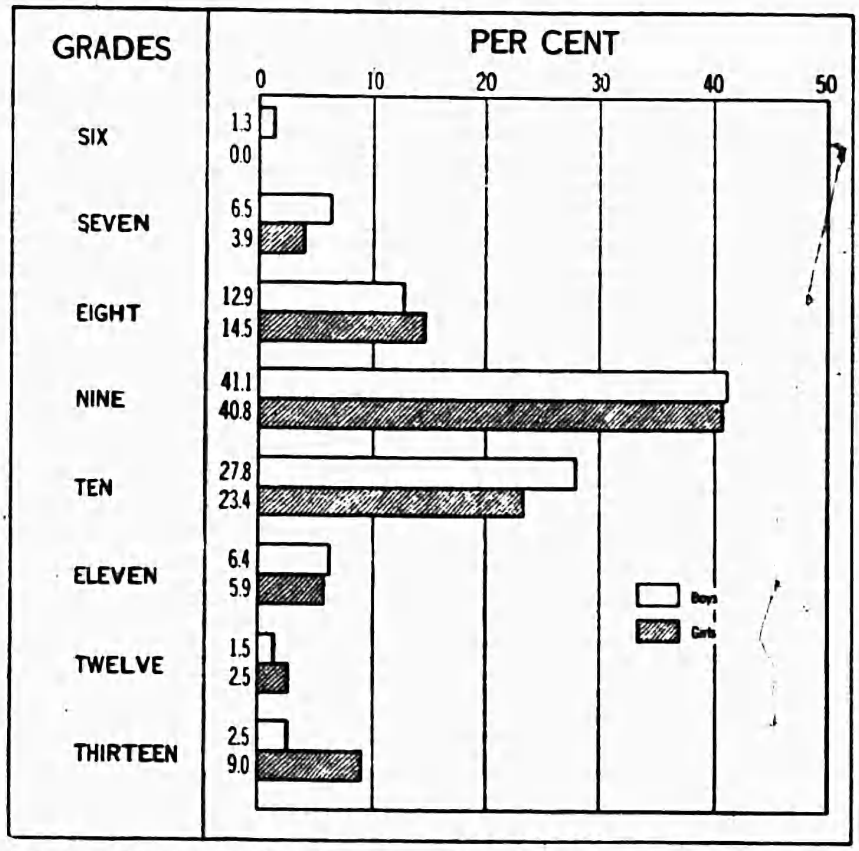

FIGURE 4.—Percentages of pupils at each grade level at time of entrance to trade schools

About 10 per cent of the boys and about 17 per cent of the girls had gone beyond the tenth grade.

It is apparent that a small proportion of pupils enter trade schools without having completed the eighth grade. Whether or not this is a deplorable situation is impossible to say. Taking into account such factors as intelligence, age, lack of interest in regular school work, and similar matters, it may be that the trade school is a welcome relief for many of these individuals. It is probable that there are some among them who could profit more by continuance in other types of

courses. There may be among them problem cases who need civic, social, and moral training more than they need vocational training. It is also probable that some of them have been urged by unsympathetic teachers and administrators to go to the trade school. It seems likely that with the usual combination of grade or age restrictions set up by the trade school, these cases must, in greatest part, be those who had reached an age at the time of transfer to the trade school where it would no longer be profitable for them to attend the elementary school. Some regular high schools are admitting pupils when they become adolescent, even though they have not achieved a scholarship level usually required for admittance. Under existing conditions, some of these pupils make contact with only the vocational portions of a secondary-school training.

However, as many as 90 per cent of the pupils in trade schools have reached or exceeded the educational level commonly required for entrance to high school, and many have had one or more years in high school before transferring. Less than half completed the junior high school grades before they transferred to the specialized work of the trade school. This early transfer to specialized vocational study is not in harmony with the theory underlying the development of the junior high school. That theory would indicate that specialization should be delayed until the senior high school unless pupils leave schools before attaining that level.

ii. DEGREE OF SATISFACTION OF PUPILS WITH SCHOOLS IN WHICH THEY ARE ENROLLED

It is to be expected, of course, that every group should have some malcontents who would be dissatisfied under any conditions. What proportion of such individuals is normal for an average group is unknown. Obviously the norm would vary with types of individuals or groups and with external conditions. About all that can be said is that if one group exhibits more dissatisfaction than another, it is a more discontented group either by nature or because of the situation in which it exists. If there is no reason to believe that one group is by nature more difficult to please than another, we might infer that the difference is due to external conditions.

TABLE 47.—*Percentages of pupils who indicated preference for some school other than that in which they were enrolled*

School and curriculums	Boys		Girls	
	Number of cases	Percentage preferring another school	Number of cases	Percentage preferring another school
1	2	3	4	5
Comprehensive school:				
General	434	8.5	220	2.7
Academic	499	9.2	394	5.3
Scientific	225	6.7	41	4.9
Commercial	369	8.1	709	5.1
Fine arts	121	8.3	137	7.3
Industrial arts	1,001	6.1		
Household arts			219	9.1
Agriculture	52	3.8		
Others	568	6.7	406	4.9
General school:				
General	360	11.1	590	5.8
Academic	840	8.1	700	4.9
Scientific	90	8.9		
Normal			37	
Commercial	272	7.4	723	7.7
Fine arts	32	12.5	67	9.0
Industrial arts	262	6.1		
Household arts			142	8.5
Others	246	10.6	279	5.7
Technical school:				
Academic	565	8.5	71	11.3
Commercial			205	9.3
Industrial and household arts	470	8.3	111	6.3
All others	706	12.6	351	10.0
Commercial school: All curriculums	463	15.8	1,022	15.2
Trade school: All curriculums	1,548	10.8	470	10.4

For each group the percentages of pupils who indicated a preference for another school than that in which they were enrolled are given in Table 47. In the comprehensive schools the percentages replying affirmatively are the lowest, followed in order of increasing proportions by the general, technical, trade, and commercial groups. It seems that those in general and comprehensive schools are best satisfied and those in specialized schools more often desirous of changing to some other school. The differences are not marked among types of schools except between commercial high schools and the other schools. In the group of commercial high schools there appear to be definitely greater proportions of students who would like to change than in any other type. The percentage who would like to change is almost the same for both sexes, although the differences between those in commercial high schools and those in other types, particularly comprehensive and general schools are more marked for girls than for boys.

13. *REASONS FOR SELECTION OF THE SCHOOL IN WHICH PUPILS ARE ENROLLED*

In connection with the study of such questions as the types of schools that pupils of secondary-school age attend and the extent to which they transfer from one school to another it is interesting to determine the reasons underlying their selection of a school and a curriculum. Also, in relation to the question as to whether or not pupils go to the school that offers the type of training they want rather than to the one that is conveniently located, such information is of great importance. To this end, pupils were asked to check their most important reason for coming to the school in which they were enrolled in preference to other schools in the city. They were also asked to check the most important reason for taking their present type of curriculum. The replies to these two questions are summarized in Table 48.

TABLE 48.—*Percentages of boys and girls in different schools and curriculums reporting each reason as the most important one for attending the school in which they were enrolled*

BOYS

School and curriculum	Reasons								
	To be near home	To be with friends	To take part in social life	To take part in athletics	To get vocational course	To get academic course	Only high school in city	Recommended by friends	Other
1	3	3	4	5	6	7	8	9	10
Comprehensive school:									
General (482)	27.4	5.0	1.9	5.2	22.8	2.9	21.6	8.5	4.8
Academic (565)	20.0	2.6	1.1	3.9	12.0	12.7	37.3	6.0	4.2
Scientific (236)	18.2	2.1	.8	2.5	29.2	12.7	24.6	3.0	6.8
Commercial (403)	23.3	2.2	1.0	2.2	31.3	6.2	23.3	5.6	4.7
Fine arts (134)	24.6	2.2	1.5	4.5	30.6	7.5	14.2	7.5	7.5
Industrial arts (1,088)	18.6	.5	.9	2.1	44.8	5.5	17.6	4.6	5.2
Agriculture (54)	18.5	1.8	0	0	24.1	11.1	29.6	1.8	13.0
Other (612)	27.6	2.1	1.5	2.8	31.0	6.2	19.3	3.9	5.5
General school:									
General (385)	47.3	2.1	1.0	4.4	10.9	8.6	9.9	7.5	8.3
Academic (887)	31.2	2.0	.9	4.8	3.8	39.2	2.5	5.2	10.3
Scientific (120)	25.0	.8	0	2.5	5.8	10.0	48.3	4.2	3.3
Commercial (305)	45.9	3.6	1.6	1.6	13.1	4.6	14.4	5.6	9.5
Fine arts (37)	16.2	2.7	0	2.7	24.3	21.6	10.8	8.1	13.5
Industrial arts (306)	31.0	2.9	.7	1.6	20.3	3.9	24.2	3.6	11.8
Other (277)	37.2	3.2	1.8	3.2	14.1	11.2	13.7	5.8	9.7
Technical school:									
College preparatory (575)	1.0	1.2	.2	1.7	3.3	21.2	0	4.5	6.8
Industrial arts (483)	1.0	.4	.4	1.2	83.8	6.4	.4	2.1	4.1
Other (727)	3.7	.8	.5	2.6	72.6	8.4	.1	4.8	6.3
Commercial school:									
All (474)	1.1	.6	1.3	1.7	64.8	6.8	1.1	5.9	16.9
Trade school: All (1,636)	1.3	.5	1.2	.7	71.6	5.6	2.1	4.9	12.0

TABLE 48.—*Percentages of boys and girls in different schools and curriculums reporting each reason as the most important one for attending the school in which they were enrolled*—Continued

GIRLS

School and curriculum	Reasons								
	To be near home	To be with friends	To take part in social life	To take part in athletics	To get vocational course	To get academic course	Only high school in city	Recommended by friends	Other
1	2	3	4	5	6	7	8	9	10
Comprehensive School:									
General (246)	34.9	4.5	0.4	------	10.6	4.1	33.3	4.5	7.7
Academic (439)	25.7	2.7	.4	0.9	5.9	8.0	44.0	6.4	5.9
Scientific (44)	11.4	4.5	------	------	18.2	9.1	50.0	------	6.8
Commercial (751)	30.1	2.7	1.5	1.2	28.5	3.1	24.0	5.7	3.3
Fine arts (145)	33.8	1.4	.7	1.4	20.7	7.6	25.5	2.7	6.9
Household arts (236)	41.9	1.7	1.7	------	18.6	5.5	21.6	5.1	3.8
Other (427)	26.2	1.9	1.2	1.9	23.6	6.3	29.3	5.4	5.4
General school:									
General (626)	38.8	3.0	3.0	.8	9.9	12.6	9.1	12.5	10.2
Academic (729)	31.3	3.8	1.5	.4	2.6	38.7	6.0	7.3	8.4
Normal (37)	35.1	5.4	------	------	16.2	27.0	------	8.1	8.1
Commercial (771)	51.6	2.7	1.7	1.3	14.5	2.6	12.5	4.5	8.8
Fine arts (74)	18.9	2.7	------	------	18.9	21.6	2.7	14.9	20.3
Household arts (160)	30.6	3.8	1.9	.6	14.4	3.8	25.6	10.0	9.4
Other (291)	49.8	3.8	2.4	.3	8.2	8.9	10.0	6.5	10.0
Technical school:									
College preparatory (72)	------	1.4	1.4	2.8	36.1	29.2	------	11.1	18.0
Industrial and household arts (111)	2.7	1.8	2.7	------	56.7	14.4	------	8.1	13.5
Commercial (203)	1.5	3.4	3.9	1.0	36.4	11.8	------	28.1	13.8
Other (355)	4.2	1.1	1.1	2.5	51.3	17.2	------	10.4	12.1
Commercial school:									
All (1,040)	3.6	1.8	.8	.6	75.4	4.5	------	5.8	7.6
Trade School: All (491)	1.4	.8	1.4	1.2	68.0	8.4	.4	7.1	11.2

NOTE.—The numbers in parentheses indicate the number of pupils represented.

Some large differences are shown. The first of these occurs in the case of boys with the first reason given, namely, to be near home. In the general and comprehensive schools from 16.2 per cent to 47.3 per cent of the pupils check this reason, the average being about 30 per cent. Contrasted with this are the 1 per cent to 3.7 per cent of the pupils in specialized schools who check this reason. Evidently the implication that pupils attend specialized schools because they are near home when they should be attending another school less conveniently located is not supported by the reports of pupils. There is, however, strong indication that pupils do attend the general and comprehensive schools near at hand. These findings are in agreement with what has already been shown by the extent to which pupils transfer from one school to

another. They also agree with what is presented in another section of this report on the proximity of residence of pupils to the school attended, where it is shown that when there is but one specialized school in a city, boys and girls do travel from all sections to attend that school in preference to attending a general high school near home. Very few of the pupils indicate that they are enrolled in the vocational school because it is located near their homes.

The foregoing discussion has been based on percentages of boys checking the responses. The contrasts between general and specialized schools are even greater in the case of girls. Here, for example, 51.6 per cent of girls following a commercial curriculum in the general high schools attend that school because it is near home. Of course, it must be said that, other things being equal, attending a school because it is near home is a perfectly good reason for doing so. If these girls can obtain as valuable commercial training in the general high school as anywhere else, and if that school is near home, then the sensible thing to do is to attend that school. Few girls report that they are attending the specialized school because it happens to be convenient.

The second contrast between general and specialized schools occurs in the case of the fifth reason, namely, "desired vocational courses that are available." Of all types of schools, the smallest proportions checking this reason are found in general high schools. On the average not more than 15 per cent check it. In comprehensive schools less than a fourth check this reason, excepting for pupils in industrial arts, of whom 44.8 per cent check it. On the other hand, about three-fourths of the pupils in technical schools, about two-thirds in commercial schools, and more than 70 per cent in trade schools check this reason. For the most part, pupils attend specialized schools for vocational training. These responses are in harmony with the expectation underlying the different plans of organization. That is, under the plan of comprehensive schools, pupils are expected to attend the school in the section of the city in which they reside. Under a plan of specialized schools, pupils who attend the vocational schools are supposed to be seeking vocational training.

TABLE 49.—*Percentages of boys and girls indicating each reason as the most important one for choosing the curriculum in which they were enrolled*

BOYS

Reason	Comprehensive school								General school							Technical school			Commercial school	Trade school	Total
	General (440)	Academic (554)	Scientific (235)	Commercial (405)	Fine arts (129)	Industrial arts (1,063)	Agriculture (55)	Others (594)	General (385)	Academic (856)	Scientific (121)	Commercial (301)	Fine arts (36)	Industrial arts (308)	Others (268)	College preparatory (563)	Industrial arts (482)	Others (716)	All (468)	All (1,630)	Total (9,599)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Influenced by school adviser	5.0	2.0	2.1	3.0	----	2.2	----	2.9	7.3	1.4	4.1	7.3	----	9.4	2.6	1.2	1.4	2.1	1.5	3.3	2.9
Influenced by parents' advice	18.2	11.2	8.5	14.3	13.2	11.3	9.1	9.6	14.5	12.7	7.4	18.9	8.3	8.8	12.7	8.9	9.3	10.9	21.6	17.1	13.2
Influenced by friends' advice	3.2	1.1	1.3	1.0	4.6	2.0	3.6	1.7	.3	.4	3.3	2.0	2.8	2.6	3.0	.9	1.4	1.5	1.5	1.0	1.5
Desire to go to college	4.5	33.4	11.9	3.7	3.1	1.6	1.8	6.9	17.4	40.8	20.7	5.6	----	2.9	16.8	16.9	1.4	6.1	5.6	1.5	10.6
Desire for certain type of mental training	14.1	4.9	6.4	6.4	.8	5.7	7.3	7.2	13.0	5.6	9.9	6.6	11.1	6.8	7.1	7.6	1.9	8.0	8.5	3.6	6.5
Desire to have certain teachers	----	.2	----	----	----	.1	----	.3	.8	----	----	----	----	----	.4	----	----	.3	----	.1	.1
Desire to prepare for a certain job or field of work	40.7	43.9	62.5	60.2	69.8	65.9	72.7	61.9	30.9	33.1	47.1	50.5	72.2	54.9	49.3	60.6	79.5	57.4	49.1	59.2	55.0
Desire for practical courses for earning money quickly	5.0	.7	.4	2.7	1.5	3.1	----	2.3	2.1	1.3	----	3.0	2.8	1.3	1.9	1.1	1.2	4.0	7.3	6.8	3.2
Desire for courses in which chances were favorable for making good marks	2.7	.4	.8	1.5	.8	1.2	1.8	1.2	2.1	.5	.8	1.7	----	2.3	.4	.9	1.4	1.0	.4	2.0	1.3
Desire to be with certain friends	.4	.4	----	----	----	.1	----	.7	.3	.1	----	.3	----	.6	----	----	----	----	----	.1	.2
Did not enjoy work in former courses	2.9	.2	.4	2.2	1.5	1.5	----	.8	1.6	.2	.8	.7	----	2.6	.4	.9	.8	2.2	.9	1.2	1.2
Failed in former course	.4	.2	.4	1.0	----	.6	----	.8	1.6	.2	----	.7	----	.3	.7	----	----	.4	.6	.6	.5
Other reason	2.7	1.6	5.1	3.9	4.6	4.6	3.6	3.5	8.3	3.7	5.8	2.7	2.8	7.5	4.9	1.1	1.4	6.0	3.0	3.6	3.9

GIRLS

	(236)	(436)	(44)	(752)	(145)	(234)	(425)	(615)	(730)	(37)	(773)	(69)	(159)	(294)	(72)	(206)	(111)	(348)	(1,062)	(499)	(7,236)
Influenced by school adviser	3.4	0.4	2.3	0.9	0.7	4.7	1.6	5.5	1.2		1.4	1.4	6.9	3.4		1.0	2.7	3.7	0.8	2.2	2.1
Influenced by parents' advice	21.6	8.7	4.5	11.8	11.7	12.8	14.1	20.2	13.3	24.3	11.5	5.8	13.8	11.6	11.1	8.7	14.4	10.3	9.7	10.6	12.4
Influenced by friends' advice	.8	.2		.5		3.0	.5	1.6	.4		.9		2.5	.3		5.4	1.8	.6	1.1	1.4	1.0
Desire to go to college	10.6	41.0	4.5	.7	4.8	1.7	12.0	15.3	48.6	5.4	1.8	2.9	1.9	20.4	26.4	2.4	1.8	3.7	2.2	.2	12.0
Desire for certain type of mental training	10.2	5.5	9.1	4.5	3.4	6.4	4.5	8.9	7.0	5.4	3.9	2.9	6.0	7.5	4.2	4.9	3.6	5.7	2.9	2.6	6.2
Desire to have certain teachers						.8			.1		.3							.3	.2		.1
Desire to prepare for a certain job or field of work	41.5	42.4	70.4	73.7	71.0	63.4	60.0	38.0	26.4	64.1	71.0	69.6	50.9	49.0	52.8	64.9	58.5	59.8	73.0	56.5	56.8
Desire for practical courses for earning money quickly	3.0	.2		2.6	.7	3.8	2.8	2.3	.7	2.7	4.1		1.9	1.7	2.8	4.9	2.7	2.0	3.3	7.0	3.1
Desire for course in which chances were favorable for making good marks	.4			.8	.7	1.3	1.4	1.3	.3	2.7	.9	4.3	3.1	1.0		1.5	.9	3.4	.5	2.2	1.1
Desire to be with certain friends	.4		2.3	.4			.5	.2	.1	2.7			1.3			.5		.3	.2	.2	.2
Did not enjoy work in former courses	.4		2.3	1.3		.8	.2	2.3	.1				2.5			1.5	3.6	1.7	1.0	4.2	1.1
Failed in former courses	.8			.7		1.7	.2	.3			.3			.7			.9	.3	.2	.2	.3
Other reasons	6.8	1.4	4.5	2.0	6.9	9.4	3.0	4.1	1.6	2.7	3.8	11.6	9.4	4.4	2.8	4.4	9.0	8.0	2.9	12.6	4.6

NOTE.—The numbers in parentheses indicate the numbers of boys or girls represented.

In the case of the comprehensive high schools "only high school in the city" is checked in about 25 per cent of the cases by boys and a little more frequently by girls. This is to be expected in view of the fact that a number of communities were studied in which but one high school was maintained. This reason is less frequently checked by pupils in general high schools and almost not at all by pupils in specialized schools.

The pupils in commercial, fine arts, and industrial arts curriculums most often attend a certain school for vocational reasons regardless of type of school Those in nonvocational curriculums most often attend a particular school because it is near home or because there is no other high school in the city.

14. REASONS FOR SELECTION OF PRESENT CURRICULUM

Many of the specialized curriculums in secondary schools have vocational objectives. This is indicated by their titles. The reasons given by pupils for the choice of the curriculums in which they were enrolled supports this vocational purpose. (See Table 49.) The reason most frequently checked for the choice of all curriculums in all types of schools is "To prepare for a certain job." The highest proportion checking this reason is for the industrial arts group in technical high schools (79.5 per cent) and the lowest is for the general group in the general high schools (30.9 per cent). The percentages of boys in the commercial and industrial curriculums in the comprehensive high schools reporting this reason are higher than the percentages for the boys in the commercial and trade schools. Well over half of the total group of pupils check the vocational reason. About a tenth indicate that they selected it in order to prepare for college. The percentages checking this reason are naturally larger in the academic curriculums. Many of the pupils who have selected a strictly vocational curriculum do not report that they selected that curriculum to prepare for an occupation or an occupational field. While some of these pupils may have made a tentative choice in order to try themselves out in the curriculum, the large proportions without the vocational objective can hardly be considered to be a desirable situation.

Because some pupils may be in curriculums without themselves having made the decision, opportunity was presented

for them to indicate whether they chose the curriculum because of advice of school adviser, parents, or friends. more than a tenth reported that they selected the curriculums chiefly on the advice of parents. A much smaller proportion stated that they were chiefly influenced by advice of other persons.

The small percentage indicating that they chose their curriculum chiefly because of the advice of the school adviser is probably to be considered as a favorable situation. It is a generally accepted principle in guidance that the program of guidance should help the pupil to define an objective and to give him the basis for planning an educational program preparatory for it. Pupils, then, should choose a curriculum because it prepares them for their objective and not because the counselor advises it. The much larger percentage for the parents is in harmony with the general tendency for parents to be willing to decide for the child instead of stimulating him to plan for himself.

15. EXPECTATIONS OF GRADUATION

In line with the vocational and educational plans and objectives of pupils it is pertinent to inquire of them whether or not they plan to finish the work and to graduate. It will also be of interest to determine to what extent such expectations change as these students progress through secondary schools. It is a well-known fact that not more than one-half, and usually less than that, of those who enter high schools do graduate; also, that the actual chances of graduation increase markedly as the student progresses from the first to the last year. In the ninth grade, 84.7 per cent of the boys expect to graduate; in the tenth, 92.3 per cent; in the eleventh, 95.3 per cent; and in the twelfth, 97.5 per cent. (See Table 50.) The proportions for girls are somewhat higher. In the ninth grade, 90.5 per cent expect to graduate; in the tenth, 94.1 per cent; in the eleventh, 97.3 per cent; in the twelfth, 98.5 per cent. In view of the fact that girls are somewhat more successful in school than boys one might predict that their expectations of graduation would be better. The differences found here are probably the result of other factors also, such as possession of vocational plans and lack of interest in school work.

TABLE 50.—*Percentages of pupils reporting plans to graduate from high school*

School and curriculums	Boys				Girls			
	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
Comprehensive school:								
General	71.2	86.1	90.2	98.8	78.9	93.1	98.4	100.0
Academic	97.2	97.6	98.1	100.0	98.2	99.2	98.3	98.5
Scientific	95.2	98.8	96.9	100.0	100.0	100.0	93.7	100.0
Commercial	92.2	95.4	98.2	100.0	85.4	90.2	96.7	98.7
Fine arts	64.0	100.0	100.0	97.2	83.3	87.1	100.0	94.7
Industrial arts	76.7	86.8	95.9	96.8				
Household arts					68.7	88.0	97.4	100.0
Agriculture	80.0	90.0	87.5	94.7				
Others	79.7	96.1	97.8	100.0	87.0	90.5	97.3	98.3
General school:								
General	93.8	93.2	96.4	97.4	96.2	93.9	98.9	99.3
Academic	95.6	98.5	96.5	97.3	98.2	98.8	99.4	99.3
Scientific	100.0	95.5	100.0	90.0	100.0	100.0	100.0	100.0
Commercial	92.9	94.1	95.7	98.3	92.5	96.2	95.5	97.2
Fine arts	100.0	100.0	100.0	92.9	100.0	100.0	94.1	96.2
Industrial arts	89.2	94.6	98.0	96.6				
Household arts					82.9	94.9	96.7	100.0
Others	94.5	90.8	97.0	100.0	93.8	97.1	96.6	100.0
Technical school:								
College preparatory	76.4	95.9	96.3	99.3	100.0	100.0	95.8	100.0
Commercial					88.6	92.8	97.1	95.4
Industrial and household arts	68.6	82.0	86.5	86.4	82.1	82.1	87.5	87.5
Others	70.3	86.8	93.2	96.5	85.3	90.9	96.8	97.0
Commercial school:								
All curriculums	75.0	95.8	92.2	100.0	97.7	94.6	97.3	98.9
Trade school:								
All curriculums	66.0	81.1	89.2	97.3	80.3	90.2	88.3	93.8
All	84.7	92.3	95.3	97.5	90.5	94.1	97.3	98.5

No large differences in this respect exist among types of schools. The pupils in general, comprehensive, and commercial high schools, plan to graduate in somewhat greater proportions than those in technical and trade schools. This difference is not apparent in the cases of those who follow the college preparatory curriculum in technical high schools and it is less marked with girls than boys.

Here, as in other comparisons, the largest differences occur between academic and other college preparatory curriculums, and the vocational types, excepting commercial curriculums. The pupils in industrial arts, and in the general and fine arts curriculums in comprehensive schools, especially in the ninth and tenth grades, have definitely less expectation of graduation than those in commercial and in college preparatory

curriculums including the academic, scientific curriculums, and the general curriculum in general high schools.

Those who knew that they would not graduate or who, at least, were not counting on it, were asked to check the most important reason for planning not to graduate. The replies are summarized in the next section.

16. REASONS FOR PLANNING TO LEAVE SCHOOL BEFORE GRADUATION

The results of a question similar to the one here considered are presented more completely and in greater detail in Chapter VIII of this monograph. No tabular material will therefore be introduced here. The results are in accord with those obtained from the check list to former pupils and indicate that the most common reasons for nonexpectation of graduation are economic ones "Necessary to help support family" and "desire to be earning money for self" include about two-fifths of the group. The second most common reason is "opportunity for a good job" and the third is "lack of interest in school work." Almost 15 per cent do not plan to graduate because of "unfavorable home conditions" or because "parents want me to go to work." It is interesting to find that these reasons for planning not to graduate and those given later for not having graduated agree so closely.

17. EDUCATION PLANS

After these pupils leave the full-time secondary school a large proportion of them continue their education in other schools. In the chapter dealing with the activities of former pupils what they actually do after leaving secondary schools is shown in detail. Comparisons of the two groups of data will throw light on the extent to which pupils carry out their plans. The replies of the enrolled pupils are summarized in Table 51. It may probably be assumed that those who did not answer the question were, for the most part, not planning to continue their education. These proportions are highest in the trade school, next highest in commercial and technical, and lowest in comprehensive and general high schools. The proportions of boys not answering this question are consistently lower than those of girls.

TABLE 51.—*Percentages of boys and girls reporting plans to enter different types of schools after they leave the type of school in which they are enrolled*

BOYS

School and curriculum	High school	College preparatory school	Public vocational school	Agricultural school	Evening school	Private commercial	Private trade	Home economics	Normal school	College or university	Others	Per cent of total group not reporting
1	2	3	4	5	6	7	8	9	10	11	12	13
Comprehensive school:												
General (224)	9.8	10.3	2.2	2.2	8.5	10.3	7.1	....	0.4	29.9	19.2	53.5
Academic (529)	4.0	8.5	.7	....	.7	2.1	1.5	....	.6	52.7	8.3	27.4
Scientific (194)	2.1	10.3	.5	1.0	1.5	1.5	10.3	....	....	62.9	9.8	18.1
Commercial (238)	9.2	5.9	2.5	1.3	8.0	31.9	3.4	....	.4	23.9	13.4	41.4
Fine arts (105)	.9	7.5	4.7	....	5.7	4.7	3.8	....	....	37.7	34.0	22.0
Industrial arts (531)	8.3	8.5	8.3	.9	16.0	4.9	19.8	....	.2	19.8	13.4	51.5
Agriculture (39)	....	2.6	....	64.1	5.2	....	2.6	....	....	17.9	7.7	31.6
Others (426)	6.1	7.3	3.0	2.3	6.1	5.9	6.8	....	.7	45.1	16.2	31.1
General school:												
General (277)	7.2	6.5	3.2	2.2	5.8	11.2	4.0	....	1.4	45.5	13.0	29.7
Academic (804)	3.2	8.5	1.0	.5	1.4	3.6	2.0	....	1.0	74.3	4.5	8.6
Scientific (107)	6.5	9.3	1.9	....	.9	.9	.9	....	.9	68.2	10.3	12.3
Commercial (177)	11.3	2.8	.6	....	19.8	29.9	.6	....	2.8	19.2	13.0	42.7
Fine arts (55)	11.4	5.7	....	....	....	5.7	2.9	....	2.9	22.9	48.6	2.8
Industrial arts (152)	7.2	5.9	6.6	2.0	8.6	3.9	17.1	....	4.6	28.9	15.1	51.6
Others (212)	6.1	6.1	2.4	.9	7.5	6.6	4.7	....	2.8	52.8	9.9	23.5
Technical school:												
College preparatory (442)	7.2	7.0	4.3	.9	12.7	1.6	5.0	....	2.5	51.8	6.8	23.3
Industrial arts (276)	9.8	3.6	6.9	1.1	40.9	.7	7.6	....	.4	24.6	4.3	43.0
Others (448)	9.6	4.9	4.0	1.3	17.8	3.6	7.1	....	1.6	37.0	11.9	38.7
Commercial school:												
All (325)	17.2	7.7	1.2	.6	24.6	19.1	3.1	....	.9	19.4	5.8	32.4
Trade school:												
All (861)	4.1	3.7	4.9	.5	50.0	3.6	13.6	....	1.4	7.7	10.1	48.9

GIRLS

Comprehensive school:												
General (145)	6.2	7.6	2.1	....	1.4	11.7	2.7	4.1	0.7	28.3	35.2	41.5
Academic (420)	2.8	4.8	.7	0.5	.7	2.4	.2	.5	4.3	68.6	14.5	4.5
Scientific (37)	2.7	2.7	....	....	....	2.7	5.4	2.7	....	21.6	62.6	15.9
Commercial (367)	6.0	6.3	1.6	....	9.0	46.3	2.4	1.1	.5	10.1	16.7	51.5
Fine arts (114)	5.3	7.0	1.7	....	2.6	9.6	5.3	....	3.5	28.9	36.0	22.4
Household arts (128)	1.6	3.9	3.1	.8	3.9	8.6	10.9	22.6	.8	11.7	32.0	46.0
Others (305)	3.9	4.5	2.3	....	2.6	11.1	2.3	2.3	5.6	38.4	26.9	30.2
General school:												
General (541)	8.1	2.6	....	2.0	1.5	20.1	.7	2.0	4.1	32.0	26.8	14.7
Academic (703)	4.4	5.1	....	.1	.3	6.1	.3	.4	4.0	72.0	7.3	4.1
Normal (37)	2.7	5.4	....	....	....	....	....	....	83.8	8.1	....	....
Commercial (427)	9.6	1.6	....	4.0	14.1	44.5	.9	.5	.9	10.1	18.8	44.8
Fine arts (60)	....	1.7	....	....	....	6.7	3.3	....	....	40.0	48.3	14.3
Household arts (95)	9.5	3.2	....	4.0	2.1	6.3	1.1	17.9	13.7	9.5	32.6	41.0
Others (237)	5.9	4.2	....	1.7	3.0	11.0	.8	2.1	13.9	40.1	17.3	19.9
Technical school:												
College preparatory (64)	7.8	9.4	....	1.6	3.1	....	3.1	1.6	9.4	34.4	29.7	11.1
Commercial (102)	2.9	2.9	21.6	....	48.0	11.8	....	....	1.0	3.9	7.8	50.5
Household and industrial arts (74)	9.5	....	23.0	....	18.9	2.7	9.5	9.5	1.3	9.5	16.2	33.9
Others (248)	12.1	2.0	7.7	....	10.9	4.4	1.2	3.2	8.9	14.1	35.5	30.9
Commercial school:												
All (524)	14.7	2.7	1.5	.2	32.8	19.3	.6	1.3	3.2	11.6	12.0	50.5
Trade school:												
All (174)	6.3	2.9	5.7	....	43.7	9.2	8.6	3.4	2.3	7.5	10.3	65.5

NOTE.—The numbers in parentheses indicate the number of boys or girls represented.

In the various curriculums certain differences stand out. As might be expected in the college preparatory curriculums, large proportions plan to go to college or university. In the more practical curriculums, such as industrial arts for boys in technical and trade schools, commercial in high schools of commerce, and commercial for girls in technical high schools, pupils plan most often to attend evening schools. Almost half the girls and more than a fourth of the boys in commercial curriculums in comprehensive and general high schools plan to attend private business or commercial schools. Even of those in high schools of commerce almost a fifth reported plans to do this. The proportion planning to go from the commercial training program in the public high school to the private commercial school is much larger for the comprehensive and general schools than for the commercial schools. Evidently, pupils in these comprehensive and general schools feel the need for more intensive or other types of training or they desire to obtain the help of the placement service of the private school, or both. A considerable proportion of the pupils in the general curriculum plan later to enter a private commercial school for a relatively short period of intensive training. Some of those reporting plans to take post-graduate work are probably graduating from a general course and returning for the vocational training. The evening school is chosen as the place for further study mostly by pupils in the commercial and industrial arts curriculums. Pupils in scientific and fine arts curriculums plan most often to go to other types of schools which are probably technical, art, and music schools.

18. OCCUPATIONAL PLANS

Since the different types of schools and curriculums have been organized, for the most part, in terms of vocational objectives of pupils, the vocational choices of pupils enrolled in the different groups will be of interest. Many of these pupils reported they were without plans. (See Table 52.) The percentage for boys (31.7) is slightly higher than that for girls (27.3). These percentages are high even in the strictly vocational schools and the vocational curriculums of the general, academic, and comprehensive schools. Prac-

tically a fifth of the girls and a third of the boys in the commercial curriculums report that they have no vocational plans. The proportion of boys without plans is considerably less for those enrolled in the trade groups. Only about a tenth of the boys in trade schools report no plans and the percentage is only 8.2 for the industrial arts group in the technical schools. In the comprehensive and general schools, however, a much larger proportion of boys enrolled in industrial curriculums reported that they had not yet made a decision as to the occupational field in which they wished to work. The percentage is 33.7 for the general schools and 25 for the comprehensive school.

TABLE 52.—*Percentages of boys and girls in the various schools and curriculums reporting plans to enter the different occupational fields*

BOYS

School and curriculums	Owners	Professions	Managerial worker	Commercial service	Clerical service	Trades	Transportation	Public service	Personal service	Homemaking	Labor	Inadequate information	No plans
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Comprehensive school:													
General (441)	0.9	14.3	0.7	3.6	2.1	22.6	7.7	0.9	0.2	0.2	1.1	0.7	44.9
Academic (440)	.7	38.6	1.4	3.4	1.4	8.0	4.5	.2	----	----	----	1.1	40.7
Scientific (224)	.9	54.5	1.3	.4	.9	12.9	7.2	.4	1.3	----	.9	----	19.2
Commercial (389)	1.3	7.5	1.0	14.7	30.6	6.7	4.9	.5	.3	----	.5	1.3	30.8
Fine arts (125)	----	57.6	.8	1.6	2.4	8.0	3.2	.8	.8	----	----	----	24.8
Industrial arts (1,031)	.1	10.0	----	.8	.7	53.9	8.6	.5	----	----	.1	.3	25.0
Agriculture (52)	26.9	26.9	7.7	----	----	3.8	1.9	----	----	----	7.7	----	25.0
Others (371)	----	----	2.2	4.3	4.6	34.0	11.6	.3	1.3	----	.8	----	41.0
Total (3,073)	.9	18.6	.9	3.7	5.3	28.8	7.4	.5	.4	.1	.6	.5	32.3
General school:													
General (366)	.3	27.3	1.1	3.3	2.7	8.7	4.1	----	----	.3	----	.3	51.9
Academic (781)	.5	47.5	1.2	2.9	.9	2.0	3.6	.3	----	.1	.3	.9	39.8
Scientific (107)	.9	49.5	1.9	3.7	----	3.7	6.6	----	----	----	----	.9	32.7
Commercial (273)	----	12.8	1.5	9.9	30.0	3.3	3.3	----	----	----	----	----	39.2
Fine arts (33)	3.0	75.8	----	----	6.1	3.0	3.0	----	----	----	----	----	9.1
Industrial arts (264)	.4	23.1	1.9	.8	.8	32.6	6.4	.4	----	----	----	----	33.7
Others (260)	.8	38.5	1.2	3.5	2.7	14.2	5.0	.8	----	.4	----	----	33.0
Total (2,084)	.5	35.7	1.3	3.7	5.3	8.9	4.3	.2	----	.1	.1	.4	39.4
Technical school:													
College preparatory (569)	----	36.4	.2	.4	.2	29.8	6.2	.5	.2	.2	----	.2	25.8
Industrial arts (454)	----	19.2	.2	.2	.2	68.6	2.7	.4	----	----	.2	----	8.2
Others (602)	.2	25.5	.4	.4	----	37.8	10.4	.4	.2	.2	.2	----	24.4
Total (1,625)	.1	27.5	.3	.3	.1	43.9	6.7	.4	.1	.1	.1	.1	20.2
Commercial school:													
All (193)	----	14.0	1.6	9.8	40.4	----	1.0	1.0	----	----	----	----	32.1
Trade school:													
All (582)	.4	5.4	.8	----	----	78.1	----	----	.1	----	----	----	13.3
All boys (6,907)	.6	25.7	.9	3.1	5.1	25.4	6.1	.4	.2	.1	.3	.4	31.7

TABLE 52.—*Percentages of boys and girls in the various schools and curriculums reporting plans to enter the different occupational fields*—Continued

GIRLS

School and curriculums	Owners	Professions	Managerial worker	Commercial service	Clerical service	Trades	Transportation	Public service	Personal service	Homemaking	Labor	Inadequate information	No plans
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Comprehensive school:													
General (234)	....	19.3	....	1.7	17.9	1.7	....	....	14.5	3.8	....	....	41.0
Academic (414)	....	50.0	....	.5	5.1	.5	0.5	0.2	8.7	1.7	....	....	32.9
Scientific (38)	....	10.5	....	....	5.3	....	....	....	71.1	....	....	....	13.2
Commercial (732)	....	4.2	....	3.8	66.9	....	.1	....	3.3	.8	....	0.3	20.5
Fine arts	....	61.3	....	2.1	6.3	.7	....	....	3.5	2.8	....	....	23.2
Household arts (223)	....	16.6	0.4	2.2	3.6	12.6	.4	....	22.4	2.3	....	.4	39.0
Others (413)	....	30.8	....	5.3	23.7	2.7	.2	....	14.3	2.4	....	.2	20.3
Total (2,196)	....	24.5	.1	2.9	30.5	2.1	.2	.1	10.7	.9	....	.2	26.9
General school:													
General (597)	0.2	26.6	....	1.3	13.9	.3	.5	....	15.9	.8	....	.2	40.2
Academic (644)	.2	43.8	....	.6	5.0	.3	....	....	5.7	.2	....	.7	43.5
Normal (36)	....	91.7	....	....	....	....	....	....	....	....	....	....	8.3
Commercial (738)	....	3.3	....	1.1	72.3	.1	.1	....	4.9	.7	....	.1	17.3
Fine arts (69)	....	78.3	....	1.4	4.3	....	....	....	....	....	....	....	15.9
Household arts (152)	....	21.1	....	2.0	6.6	5.2	.7	....	24.3	8.6	....	....	31.6
Others (279)	....	40.1	....	.4	24.0	.4	....	....	6.8	1.1	....	.4	26.9
Total (2,515)	.1	27.1	....	1.0	28.9	.6	.2	....	8.9	1.1	....	.3	31.2
Technical school:													
College preparatory (66)	....	42.4	....	1.5	3.0	....	....	....	31.8	....	....	....	21.2
Commercial (203)	....	2.0	....	....	71.4	.5	....	....	2.0	....	....	....	24.1
Industrial arts (104)	....	12.5	....	1.0	1.9	26.9	....	....	19.2	4.8	....	....	33.7
Others (290)	....	37.6	....	....	2.8	7.2	....	.3	23.8	.3	....	....	27.9
Total (663)	....	23.2	....	.3	23.7	7.5	....	.2	17.2	.9	....	....	27.0
Commercial school:													
Commercial (875)	.1	6.2	.1	2.3	70.4	.3	.2	.1	3.0	....	....	.1	17.1
All girls, (6,249)	.1	23.1	.1	1.8	34.7	1.8	.2	.1	9.5	1.2	....	.2	27.3

NOTE.—The numbers in parentheses indicate the number of boys or girls represented.

TABLE 53.—*Percentages of boys and girls in various schools and curriculums, and at different grade levels, reporting plans to enter different occupational fields*

BOYS

School and curriculums	Professions by grade—				Clerical and commercial occupations by grade—				Trades by grade—				Without plans by grade—			
	9	10	11	12	9	10	11	12	9	10	11	12	9	10	11	12
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Comprehensive school:																
General	14.6	15.3	9.0	18.7	3.9	5.4	5.0	10.0	20.8	28.2	22.0	17.5	46.9	40.5	53.0	38.7
Academic	30.5	55.1	51.9	55.5	4.2	5.7	5.4	1.4	5.5	5.7	5.2	2.1	48.6	25.3	33.1	36.3
Scientific	40.5	61.4	55.0	53.8	2.4	1.2	1.7	....	19.0	6.0	21.7	7.7	23.8	16.9	13.3	28.2
Commercial	7.1	5.4	10.8	6.3	40.0	45.0	45.0	50.7	12.8	7.8	4.5	2.5	27.1	32.6	32.4	29.1
Fine arts	30.4	47.2	66.7	80.0	....	2.8	6.6	2.9	26.1	5.5	3.3	2.9	43.5	30.5	20.0	11.4
Industrial arts	6.3	9.9	11.1	13.7	.8	.3	2.3	3.3	48.4	55.4	55.0	57.4	35.5	22.9	21.9	18.6
Agriculture	33.3	21.0	....	41.2	....	....	....	....	....	5.3	....	5.9	22.2	26.3	57.1	11.8
Others	27.5	25.9	38.5	41.0	2.9	6.3	4.0	9.1	29.0	23.0	24.1	16.7	27.5	31.0	25.3	24.3

TABLE 53.—*Percentages of boys and girls in various schools and curriculums, and at different grade levels, reporting plans to enter different occupational fields*—Continued

BOYS—Continued

School and curriculums	Professions by grade—				Clerical and commercial occupations by grade—				Trades by grade—				Without plans by grade—			
	9	10	11	12	9	10	11	12	9	10	11	12	9	10	11	12
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
General school:																
General	31.3	19.0	29.1	34.2	1.5	7.7	5.4	8.2	7.5	11.2	7.3	8.2	53.7	55.2	51.8	45.2
Academic	1.5	45.4	52.1	54.2	1.2	5.3	1.8	6.2	2.9	2.7	----	2.3	47.4	39.2	39.6	33.3
Scientific	42.9	45.5	61.1	70.0	5.7	4.5	----	----	2.9	4.5	----	10.0	28.6	40.9	27.8	20.0
Commercial	11.3	8.6	14.7	18.6	37.8	33.3	47.0	44.1	3.8	4.3	4.4	----	37.7	50.5	32.4	30.5
Fine arts	100.0	71.4	70.0	78.6	----	----	20.0	----	----	----	10.0	----	----	14.3	----	14.3
Industrial arts	13.1	19.3	42.6	36.7	2.0	1.1	2.1	----	33.3	38.6	21.3	30.0	43.4	33.0	23.4	20.0
Others	30.6	28.6	47.8	48.3	2.8	9.6	7.5	5.2	19.4	17.5	7.5	12.1	38.9	38.1	28.4	25.9
Technical school:																
College preparatory	11.4	39.6	36.8	50.0	----	----	.6	1.4	67.1	27.4	29.0	18.8	18.6	22.0	23.9	25.4
Industrial arts	14.3	18.5	16.3	25.5	----	----	----	1.8	57.1	72.2	73.5	59.4	20.0	6.8	5.4	10.4
Others	13.9	28.3	42.8	41.0	----	.4	.5	.7	75.0	33.0	31.4	24.6	11.1	23.6	16.5	26.9
Commercial school:																
All	25.0	12.9	14.8	10.0	25.0	47.1	49.1	55.0	----	----	----	----	50.0	37.1	27.9	30.0

GIRLS

Comprehensive school:																
General	16.4	21.4	25.4	13.3	21.8	19.6	17.5	20.0	3.6	1.8	----	1.7	41.8	50.0	36.5	36.7
Academic	49.0	55.1	48.3	47.3	----	5.9	4.3	8.6	----	----	0.9	.8	39.2	30.5	31.9	33.3
Scientific	14.3	----	14.3	25.0	----	7.7	7.1	----	----	----	----	----	----	23.1	14.3	----
Commercial	4.0	4.0	4.8	4.0	58.8	70.1	73.9	77.5	----	----	----	----	34.9	20.6	17.4	12.6
Fine arts	41.7	54.8	76.2	57.9	8.3	9.7	----	14.0	----	----	----	----	33.3	29.0	21.4	19.3
Home economics	12.5	16.7	16.7	20.0	9.4	8.4	4.1	2.2	12.5	5.6	12.2	24.4	46.9	47.2	37.8	22.0
Others	25.6	25.0	41.8	28.9	26.9	27.8	28.2	32.2	2.6	2.9	1.8	3.3	24.4	24.0	15.5	19.0
General school:																
General	15.6	27.8	33.3	25.2	20.2	12.5	11.1	20.6	.9	----	----	.8	47.7	44.9	36.1	33.6
Academic	36.0	38.8	49.0	54.6	6.3	5.8	3.4	7.1	----	----	.7	.7	49.5	49.2	39.5	34.8
Normal	100.0	94.1	100	83.3	----	----	----	----	----	----	----	----	----	5.9	----	16.7
Commercial	.9	4.5	2.6	4.2	66.0	70.1	80.6	75.7	----	.3	----	----	28.3	18.9	11.7	13.9
Fine arts	57.1	81.8	82.4	85.2	14.3	9.1	----	3.7	----	----	----	----	28.6	9.1	17.6	11.1
Household arts	2.4	22.4	40.0	28.6	----	5.1	13.3	28.6	9.5	1.7	3.3	4.8	35.7	41.4	20.0	14.3
Others	41.7	38.6	40.9	40.3	29.2	17.1	26.1	26.4	0	----	----	1.4	22.9	32.9	25.0	26.4
Technical school:																
Academic	33.3	46.1	43.5	36.4	----	----	8.6	9.1	----	----	----	----	----	26.9	26.1	9.1
Commercial	1.3	----	8.6	----	68.8	68.1	74.3	86.4	----	1.4	----	----	27.3	27.5	17.1	13.6
Household and industrial arts	----	13.2	25.0	28.6	3.6	----	12.5	14.3	28.6	28.3	----	42.8	60.7	22.6	31.2	14.3
Others	26.5	----	45.2	45.3	5.9	----	3.2	7.8	17.6	----	2.1	4.7	50.0	----	22.6	21.9
Commercial school:																
All	4.8	3.7	8.0	8.0	68.7	72.5	65.1	81.4	1.2	.3	.4	----	24.1	17.8	20.8	7.5

When these data are analyzed by grade (Table 53) one finds a smaller proportion of pupils without vocational plans in the upper grades of the secondary school in practically all the groups, although the differences for pupils in the upper and lower grades are not so large as one might expect. The

average of the percentages of boys in the ninth grade of the different curriculum groups without choice (34.7) is larger than the percentage for the twelfth grade (25.2). The contrast is much the same for the girls, the percentage for grade 9 being 35.8 and that for grade 12 being 20.4. There is little difference between the boys and girls in the extent to which they have vocational plans. The average of the percentages for the different groups without plans is slightly higher in the twelfth grade for girls (25.2) than for boys (20.4), but in the three other grades the average of the percentages are slightly smaller for girls. There is little difference between types of schools, except that a larger proportion of the pupils in the trade schools have vocational plans than is true for the other types of schools.

Girls in academic, normal, fine arts, and other curriculums most often report plans to enter the professions. Those in the commercial curriculum are settled in largest proportions, from a half to two-thirds planning to enter clerical pursuits. Those in household arts plan to enter personal service or trade and those in the general curriculum plan to enter clerical work, professions, and personal service in the order named.

The occupational plans of these pupils, considering both sexes and all groups, indicate that a consistently high proportion, excepting in the commercial and trade schools, have no plans. In the latter the proportions are much lower than in any other type of school. A much larger proportion of pupils in nonvocational curriculums plan to enter professions than will probably ever get into them. Those in vocational curriculums for the most part, plan to follow the lines of specialization pursued in secondary schools. Even here, in the commercial curriculum, especially in comprehensive and general high schools, a substantial proportion have no occupational plans. Equally significant is the large number with plans to enter an occupation in fields other than those in which they are enrolled. A considerable number of pupils specializing in the commercial and trade fields have plans for the professions.

In the various curriculums the plans seem fairly well differentiated. By the time pupils reach the twelfth grade

from a half to three-fourths of those in college preparatory and fine arts curriculums plan to enter the professions. From 35 to 50 per cent of those in the general curriculum in general high schools and those in other curriculums in all schools plan to enter the professions. The general curriculum in the comprehensive high schools apparently enrolls a heterogeneous group with a wide variety of plans and a large proportion without plans. This particular group has appeared in this same light in other respects.

The commercial groups plan to enter commercial or clerical service, being about equally divided between the 2 fields in the comprehensive high schools, about 1 to 2 in general high schools, and about 1 to 6 in commercial high schools. Evidently the more specialized the training the fewer plan to enter commercial service, which for the most part includes selling and agent work. It is surprising to find almost a third of those in the commercial curriculum with no occupational plans.

In the industrial arts group, the majority plan to enter the trades. The lowest proportion with such plans in industrial arts (about a fourth to a third) are found in the general schools; about half of those in the comprehensive schools plan to enter the trades; about two-thirds of those in the technical schools; and about three-fourths of those in the trade schools.

Turning now to consideration of the girls' responses to this question, we find that the girls' occupational choices are much less scattered than those of the boys. Very few choices are found outside of the professions, clerical and personal service, trades, and homemaking.

19. EFFECT OF ORGANIZATION ON THE CHARACTERISTICS OF THE PUPILS ENROLLED

Effect of form of organization on type of pupil served.—The present inquiry was made to determine the characteristics of the pupils served by each type of course when it is offered under the different conditions represented by the various schools included in the investigation. Are the same types of pupils attracted to commercial studies when those studies are offered in the school of commerce as when they are offered

in a comprehensive high school? This line of inquiry has been made because of the contention sometimes made that the organization of special schools sets up barriers which affect the distribution of pupils to the courses.

Economic status of pupils enrolled in commercial and industrial courses.—The economic status was measured by the occupation of the father. The data presented in Figures 5 and 6 show little difference among the percentages for the different types of schools. In the commercial groups (Fig. 5),

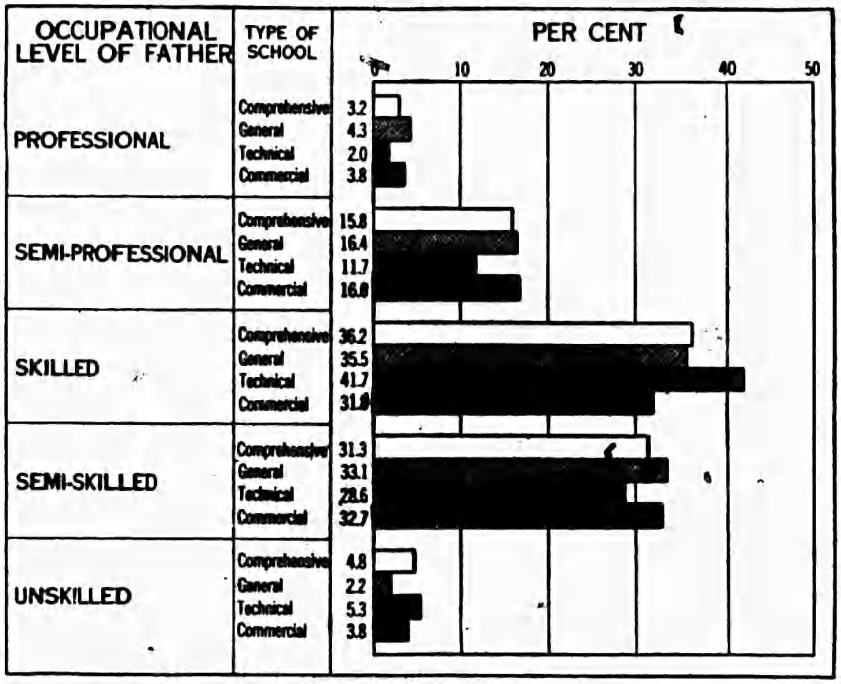

FIGURE 5.—Percentages of pupils enrolled in commercial curriculums in various types of schools classified according to occupational levels of fathers

the largest variation exists for the technical school, with smaller percentages from the professional and semiprofessional groups and a larger percentage from the unskilled than for the other schools. The percentages for the commercial schools are similar to those for the comprehensive and general schools.

The differences among the percentages for the groups enrolled in the industrial courses are equally small. The trade schools have fewer than the general school from the professional group but about the same percentage as the comprehensive school. The percentages from the semipro-

fessional and skilled occupations are also low for the trade school, but the percentage for the unskilled group is higher than for the other types of school. As was concluded from the data for the commercial pupils, it can not be said that the pupils enrolled in the industrial courses are greatly different economically when the courses are offered under the different conditions.

Intelligence of pupils in commercial and industrial arts curriculums in different types of schools.—The intelligence of

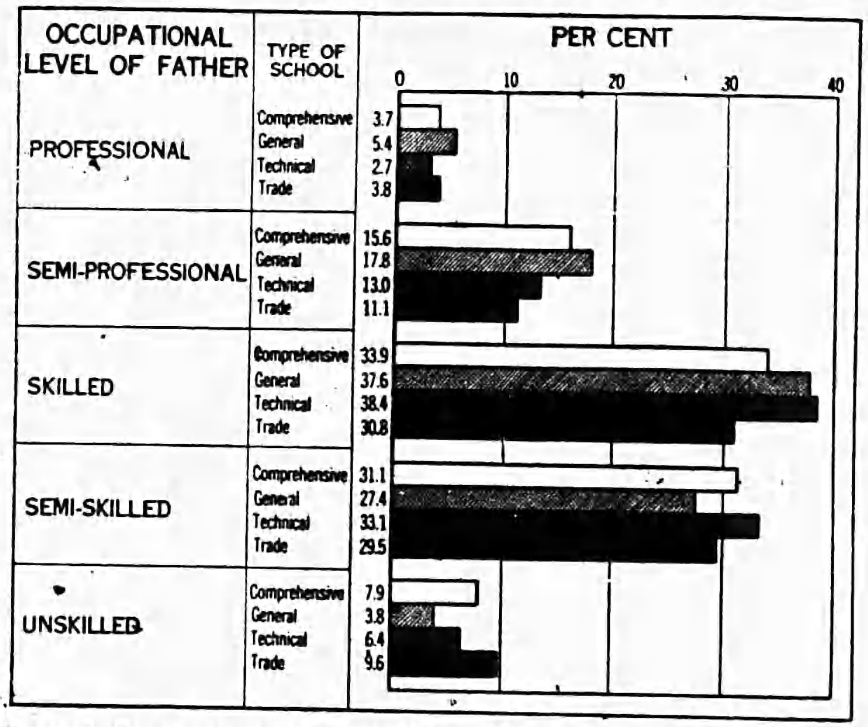

FIGURE 6.—Percentages of pupils enrolled in industrial arts curriculums in various types of schools classified according to occupational levels of fathers

pupils enrolled in commercial and industrial curriculums in the different types of schools is presented in Figure 7. The commercial groups do not differ significantly. The variation is not greater than five points for either boys or girls. The median intelligence quotient of the girls in the commercial school was identical with that for the comprehensive school.

For the industrial arts groups the pupils of the trade schools are consistently lower, but again the differences are not large. The difference between the lowest and highest medians is only 5.1 for the boys and 6.6 for the girls. These

data would indicate that about the same type of pupil intellectually is attracted to the commercial and industrial courses, regardless of the type of school in which those courses are offered.

20. SUMMARY

In the preceding pages of the chapter the interpretations and implications of the data presented in each table have been discussed at the appropriate points. It would perhaps

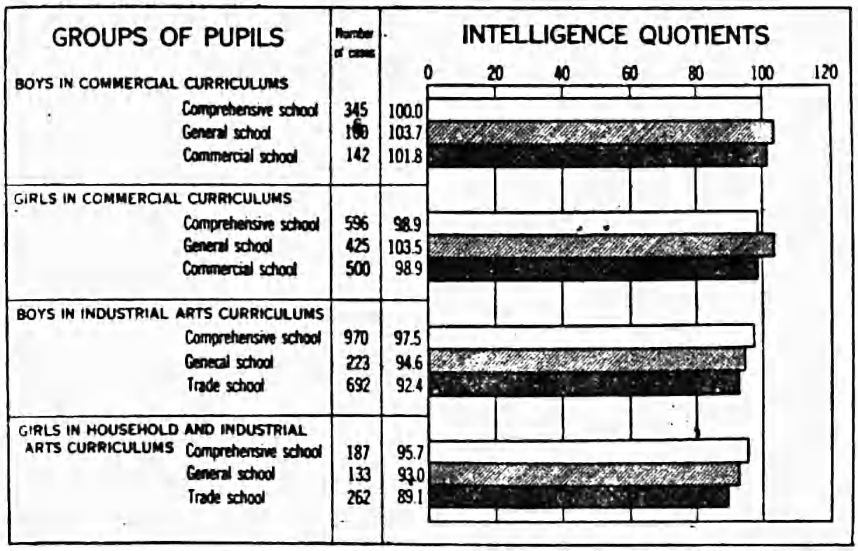

FIGURE 7.—Median intelligence quotients of boys and girls enrolled in commercial and industrial arts curriculums in different types of schools

be misleading to attempt to condense the findings from this wealth of material into a short all-inclusive summary. Many facts brought out in the tables have not been touched on at all in the discussion. It has not been possible to do so in the space available. The data have been presented in complete form, however, and an attempt has been made to point out and describe briefly those facts that seemed most significant. In closing the chapter it will probably not be out of place to emphasize once more the outstanding characteristics of the secondary-school population as found here.

The outstanding facts in the characterization of the population of secondary schools are as follows:

(1) The average intelligence quotient of pupils in all types of secondary schools combined is about 100. There is evidence of slight selection from the first year to the last, the difference being about six points (98 to 104) between first-year

pupils and pupils in the last year. Pupils in academic and scientific curriculums are easily highest in this respect and those in trade schools and industrial arts are lowest. The remainder fall somewhere between these two extremes.

(2) Success of pupils, or lack of it, as measured by failure to pass one or more grades, shows practically the same relationship among the different groups as the data on intelligence.

(3) The lowest percentages of pupils of foreign birth or foreign parentage are found in general and in comprehensive high schools. The highest percentages are in trade schools, followed by technical and commercial schools. Similarly pupils in nonvocational curriculums are less often than those in vocational curriculums foreign born or of foreign parentage. Not more than 10 per cent of any group are foreign born but the percentages of those whose fathers were foreign born exceed 50 in trade schools.

(4) In most cases the data on the education of fathers indicates seventh-grade or eighth-grade education. It is possible that these results are more complimentary than true. Many pupils did not know how much schooling the father had received and probably tried to reflect as little as possible on their fathers in their answers. In general the differences in education of the fathers among various curriculum groups and types of schools follow those pointed out in the case of other related facts.

(5) The data on the fathers' occupations show large differences, especially among curriculum groups. With respect to type of school it appears that the population of general high schools is most highly selected if judged by the proportion of fathers in the professional and semiprofessional groups. The comprehensive high school stands next highest in this respect, followed in decreasing order by commercial, technical, and trade schools. The nonvocational curriculum groups stand distinctly higher in the occupational classification than those in vocational curriculums.

(6) About a fifth of the pupils state that their mothers are employed outside the home. There is little variation among the different groups in this respect.

(7) The median number of children per family ranges from 3 to 5. The smaller families are found in the case of pupils

in general and comprehensive high schools and in non-vocational curriculums.

(8) Data on the extent to which pupils transfer from one secondary school to another indicate that they transfer much more often to specialized schools than to general or comprehensive schools. These data would suggest that at least some pupils leave the school in which they were enrolled to secure desired forms of vocational training.

(9) Approximately 95 percent of the pupils in trade schools have reached or gone beyond the eighth grade when they enter such schools. The grade attainment is slightly higher for boys than for girls. Many of these trade pupils obtain all their secondary-school training in the vocational school.

(10) Pupils in specialized schools appear more often to be dissatisfied and desirous of attending some other school than do those in general and comprehensive schools. The percentages who would like to attend some other school range from 5 to 15 per cent, the highest being in commercial high schools.

(11) About a third of the pupils in general and comprehensive schools attend the school in which they are enrolled because it is near home. For these pupils it is, in most cases, probably a perfectly valid reason provided the school offers the type of training desired. This reason, if given by any large proportion of pupils in specialized schools, would open the question of whether or not they are getting the type of training desired. Only a small proportion (about 1 to 2 per cent) of pupils in specialized schools give proximity of residence as a reason for attending the specialized school. The reason most often given by this group is vocational.

(12) The most important reason for choice of a curriculum is in practically all groups to prepare for a certain job. This reason and facts presented above bring out clearly the importance of the vocational objective in the mind of the pupil in secondary schools. They bring home the conclusion that this objective is of major significance in any comprehensive concept of secondary education. The reason second highest in frequency of mention by nonvocational groups is to prepare for college or university; in vocational groups it is because of parents' advice. Only a small proportion of any group reports the school adviser as chief influence in choosing a curriculum.

(13) About 90 per cent of the pupils enrolled in these schools expect to graduate. The expectancy increases as they progress from the first year to the last year. Many of these pupils will not realize their expectations. The situation presents a serious problem to those charged with responsibilities for guidance.

(14) The reasons most often given for not expecting to graduate from secondary schools are economic. Necessity of helping to support the family or of supporting self, or desire to be earning money are reasons given by about half the group not planning to graduate. Lack of interest in school work and opportunity for a good job are also frequently given as reasons.

(15) Of those who plan to continue their education after leaving secondary schools the majority in nonvocational curriculums plan to go to college, whereas those in vocational curriculums plan, in most cases, to go to evening school or to private business or trade schools.

(16) The data on occupational plans show that from a third to two thirds of the pupils enrolled in secondary schools have no definite plans of this nature. Pupils in the last year of work have formulated those plans in greater proportions than pupils in the first year. Girls were somewhat less undecided than boys. For the most part, pupils in nonvocational curriculums and in general and comprehensive high schools have formulated vocational plans less frequently than those in vocational curriculums and in specialized schools. The former pupils plan most often to enter the professions and the latter to follow the occupations for which they are receiving training in secondary schools. The pupils in commercial and in trade schools are much less often without occupational plans than those in any other type of school. Many of the pupils report plans for occupations other than the field of specialization of the curriculum in which they are enrolled.

(17) The characteristics of the pupils enrolled in commercial and industrial curriculums in the different types of schools do not vary significantly with the type of school. This is true both for economic status as measured by occupation of father and for intelligence as measured by the mental test.

CHAPTER VII : ATTITUDES AND ASSOCIATION OF ACADEMIC AND VOCATIONAL PUPILS

1. AN ISSUE IN ORGANIZATION OF SECONDARY EDUCATION

Social integration important function of the secondary school.—Training for citizenship has been one of the important elements of all formulations of objectives of secondary education. This aim has been considered to be of major importance in a democratic social organization which places large responsibility upon the individual. The democratic concept is not in harmony with the existence of a ruling and a following class; on the contrary, it aims to enable all people to cooperate in handling their common problems. Such cooperation is difficult, if not impossible, when there are strong small-group loyalties and the different groups are pitted against each other. A larger-group consciousness, a knowledge of the thinking and attitudes of members of the different groups, and a common body of information concerning our social development and aspirations are considered to be important desirable outcomes of secondary-school training. The need for social integration is accentuated by the great variety of types of persons making up our population and the size of our country.

Form of organization believed to affect achievement of social objective.—The comprehensive high school has been defended and the specialized school has been attacked because of their supposed effect upon the social attitudes of pupils, as was indicated in the discussion of the issues involved in the organization of secondary education in Chapter I. The comprehensive school, in which the children of all of the people are closely associated, has been favored by some because of the social integration which it was believed to produce. In the Cardinal Principles of Secondary Education it is stated as a fact that—

> When properly administered . . . the comprehensive high school is a better instrument for unification . . . the pupils realize that the interests which they hold in common with others are, after all, far more

important, than the differences that would tend to make them antagonistic to others . . . . In short, the comprehensive school is the prototype of a democracy in which various groups must have a degree of self-consciousness as groups and yet be federated into a larger whole through the recognition of common interests and ideals. Life in such a school is a natural and valuable preparation for life in a democracy.[1]

These represent broad and fundamental claims for this type of organization. In harmony with this statement is the claim that the division of pupils into separate schools, each of which serves a somewhat different social group, will strengthen the bonds between members of each group and increase the feeling of difference and antogonism between the different groups. Equally strong convictions have been expressed on the other side of this question. Where actual differences do exist between groups, some have thought that close association in a comprehensive school might increase the conflict between them. Discussions on this issue have been based solely on subjective opinion. There has been a tendency for persons responsible for each type of institution to make claims favorable to that type. An attempt has been made in the study of the horizontal organization of secondary schools to obtain some objective evidence on this important question.

Two general types of data which bear on the effect of the form of organization on the attitudes of pupils and the nature of their social experience will be presented. The first will be a summary of the judgments of the teachers who have had experience in handling pupils in different types of schools. The second will represent an attempt to measure the attitude of pupils in different types of schools.

1. JUDGMENTS OF TEACHERS CONCERNING EFFECT OF ORGANIZATION

Scope of summary of judgments of teachers.—Teachers of the 38 schools in the 13 cities visited and studied intensively gave their reactions to a series of statements covering certain issues under consideration. A number of these statements were concerned with the effect of comprehensive and specialized forms of organization of secondary schools on (1) the

[1] Department of the Interior, Bureau of Education. Cardinal Principles of Secondary Education. A report of the Commission on the Reorganization of Secondary Education appointed by the National Education Association. Bureau of Education Bulletin 1918, No. 35, pp. 25-26.

social activities of vocational pupils, (2) the social intercourse between groups of pupils, and (3) the social attitudes of pupils. As many as 2,738 teachers participated. Teachers who had not formed a judgment concerning any of the items were instructed to omit them. However, all the teachers were ready to express a judgment on most of the items. The numbers at the head of the columns of Table 54 refer to the total number of teachers who participated and not to the number who responded to each item. The number answering any one item will be somewhat less than the number given. The commercial and industrial-arts teachers have been reported separately because these two groups are responsible for the chief fields of vocational training in secondary schools. The "all teachers" group in Table 54 includes the commercial and the industrial-arts teachers in addition to all of the other groups of the school.

TABLE 54.—*Averages of judgments of teachers concerning effect of segregation of pupils in specialized schools on their morale, attitudes of academic and vocational pupils toward each other, and the social intercourse of academic and vocational pupils*

Nature of effect	Type of teachers	Type of school					Average of group averages [1]
		Academic (310)	General (515)	Comprehensive (1,246)	Commercial (193)	Vocational (474)	
1	2	3	4	5	6	7	8
(1) Effect of segregation upon participation of vocational pupils in extracurriculum activities. (It causes them to participate: 1, much more; 2, somewhat more; 3, same; 4, somewhat less; 5, much less.)	Commercial	2.1	2.3	2.9	2.7	3.7	2.7
	Industrial arts.	-----	3.9	3.4	-----	3.4	3.6
	All teachers	2.6	2.8	3.1	2.6	3.5	2.9
(2) Extent of out-of-school association of academic and vocational pupils when enrolled in same school. (They associate: 1, very freely; 2, somewhat freely; 3, very little; 4, not at all.)	Commercial	1.9	2.0	1.6	2.0	2.5	2.0
	Industrial arts.	-----	1.7	2.0	-----	2.3	2.0
	All teachers	2.5	2.1	1.8	2.0	2.3	2.2
(3) Extent of out-of-school association of academic and vocational pupils when enrolled in separate schools. (They associate: 1, very freely; 2, somewhat freely; 3, very little; 4, not at all.)	Commercial	2.6	2.7	2.7	2.4	2.8	2.7
	Industrial arts.	-----	2.5	2.6	-----	2.5	2.5
	All teachers	2.8	2.8	2.7	2.5	2.5	2.7

[1] Average of the average ratings of the different groups is used in order to give equal weighting to each group of teachers. An average of all the teachers' ratings would be influenced excessively by the judgments of teachers in the comprehensive school since nearly half of the teachers are in that group.

TABLE 54.—*Averages of judgments of teachers concerning effect of segregation of pupils in specialized schools on their morale, attitudes of academic and vocational pupils toward each other, and the social intercourse of academic and vocational pupils*—Continued

Nature of effect	Type of teachers	Type of school					Average of group averages
		Academic (310)	General (515)	Comprehensive (1,246)	Commercial (193)	Vocational (474)	
1	2	3	4	5	6	7	8
(4) Effect of association of academic and vocational pupils on the work attitude of vocational pupils. (It has an effect: 1, very desirable; 2, somewhat desirable; 3, neutral; 4, somewhat undesirable; 5, very undesirable.)	Commercial	1.8	1.8	1.9	2.1	2.6	2.0
	Industrial arts	------	1.8	2.2	------	2.4	2.1
	All teachers	1.5	2.1	2.0	2.1	2.4	2.0
(5) Effect of segregation on the group spirit and morale of vocational pupils. (It causes group spirit and morale to be: 1, much stronger; 2, somewhat stronger; 3, equally as strong; 4, somewhat weaker; 5, much weaker.)	Commercial	2.1	2.6	2.8	2.3	3.2	2.6
	Industrial arts	------	2.9	2.7	------	2.5	2.7
	All teachers	2.0	2.4	2.8	2.3	2.7	2.4
(6) Effect of segregation on creating and fostering feelings of social differences between academic and vocational groups. (It has had as effect: 1, none; 2, very little; 3, some; 4, very great.)	Commercial	3.4	2.9	2.8	2.7	2.6	2.9
	Industrial arts	------	3.3	2.9	------	2.4	2.8
	All teachers	3.1	2.9	2.8	2.7	2.5	2.8
(7) Relative effect of social approval and personal interests or abilities in causing pupils to elect academic subjects. (Influence of social approval is: 1, much more; 2, somewhat more; 3, as much; 4, somewhat less; 5, much less.)	Commercial	1.6	2.2	2.4	2.1	1.8	2.0
	Industrial arts	------	2.3	2.5	------	1.9	2.2
	All teachers	2.2	2.1	2.4	2.2	2.1	2.2

NOTE.—The numbers in parentheses indicate the numbers of teachers represented. The number reacting to any one item is sometimes smaller than the number indicated.

It perhaps should be pointed out that there are large differences between the numbers of teachers of various types in the different schools. In the academic, general, and comprehensive schools the number of academic teachers greatly exceeds the number of vocational teachers, and in the commercial and vocational schools the number of vocational teachers is the larger. The average ratings are influenced most by the type of teachers with largest numbers. The average ratings for the different schools are averages for all teachers in the schools, and they are influenced by the different types of teachers in accordance with the size of their representation in each group. In summarizing the data for all

teachers, the averages for the different types of schools were averaged. These averages of the different group averages give equal weight to the thinking of the teachers in each type of school. An average of all the teachers' ratings would be influenced greatly by the judgments of teachers in the comprehensive school since nearly half of the total group of teachers are in that group.

Effect of segregation of pupils on the social participation and social intercourse of pupils.—It has been found in some schools that the vocational pupils in a comprehensive high school, as a group, do not participate in the extracurriculum activities as much as do the academic pupils. Whether they are more likely to engage in some activity when in a school where others are participating freely or when they are in a school by themselves has never been determined. Contact with a dynamic program of activities might encourage them to participate. If, however, they are made to feel inferior in competition with other groups, they may participate more when they are in a separate school. On the average, the teachers are of the opinion that segregation does not affect the participation of the vocational pupils. A rating of "3" indicates that they would participate the same amount in both situations. The average of the reaction of all teachers is 2.9. The teachers of the vocational schools are of the belief that there is less participation by pupils when segregated. The commercial teachers, with the exception of those in a vocational school, believe that segregation would increase their participation. The industrial-arts teachers in all types of schools and all types of teachers in the vocational schools are in agreement (the average ratings are all above 3) in indicating a belief that vocational pupils would be more likely to participate if they were not segregated. The teachers of the comprehensive schools concur in this judgment. The teachers in the academic and general high schools, where there is small emphasis on vocational work, conclude that segregation would make conditions more favorable for participation. The judgment of the different groups are in conflict, some indicating more participation and others indicating less participation by vocational pupils when they are in separate schools.

The intermingling of academic and vocational pupils has been considered to be desirable in building a mutual understanding and regard for each other. Teachers were not asked to indicate directly whether they thought the form of organization affected the amount of association of the two groups of pupils in out-of-school activities. Instead, they were asked to indicate the amount of association of academic and vocational pupils when they were together in the same school and when they were enrolled in separate schools. Differences between these two separate judgments will indicate belief that the type of organization does affect the extent of association.

A comparison of the average ratings for items 2 and 3 will show that all the averages for item 3 are larger than the corresponding averages for item 2. The average of all teachers in all schools for item 2 is 2.2, indicating that the two groups associate somewhat freely when they are in the same school. The average for item 3 is 2.7, which is nearer to the rating of "3, very little association," than to the rating of "2, associate somewhat freely." The commercial and industrial teachers of the academic, general, and comprehensive schools indicate more association of academic and vocational pupils in out-of-school activities when enrolled in a comprehensive school than do the teachers of the vocational schools. Similarly, teachers in commercial and vocational schools report more association of the two groups of pupils when enrolled in different schools than do the teachers in schools which enroll all types of pupils. Each group of teachers indicates a larger amount of association of pupils in schools of the type in which they are teaching than is reported by the teachers of other schools. These judgments are in agreement in indicating that academic and vocational pupils will have more out-of-school association if they are enrolled in the same school than if they are enrolled in separate schools.

Effect of association of academic and vocational pupils on the work attitude and morale of vocational pupils.—It is sometimes believed that the vocational pupils take a more serious attitude toward their work than the pupils enrolled in other curriculums, and that association of the vocational

pupils with the other pupils causes them to develop less satisfactory attitudes. The judgments of the teachers reported in Table 54 do not support such an assumption. On the contrary, they believe the association of academic and vocational pupils to have a somewhat favorable effect on the work attitude of the vocational pupils. The teachers in the academic, general, and comprehensive schools, who have observed the pupils in association with the academic pupils, indicate most favorable effect. The teachers of the commercial and vocational schools are least favorable in their judgment of the effect of the intermingling of vocational and academic pupils, but even they believe it to be somewhat desirable.

These teachers are of the belief, however, that the group spirit and morale of vocational pupils is likely to be stronger when segregated than when they are enrolled in the same school with other groups. The average judgment (2.4) is about midway between "2, somewhat stronger" and "3, equally as strong." The industrial-arts teachers in the vocational schools believe that segregation has a more favorable effect than do the industrial-arts teachers of the general and comprehensive schools. The commercial teachers in the vocational schools is the only group which believes that segregation has a negative effect upon the group spirit and morale. On the average, these teachers are of the opinion that segregation of pupils in specialized schools strengthens somewhat the group spirit and morale of the vocational pupils.

Effect of segregation on feelings of social differences between academic and vocational groups.—Reference has already been made to the belief by some that close association of pupils in a school would develop a feeling of membership in a large social group and eradicate conflict between small groups. Democracy's high school has been conceived by many to be a school in which the children of all social, economic, and national groups would work and play together and thereby prepare themselves for cooperative undertakings after leaving school. Division of the pupil population early in the high school according to the type of occupational field in which they will work has been charged with developing class or group feelings.

The teachers who cooperated in this investigation are of the opinion that segregation of pupils in special schools has a small effect in creating and fostering feelings of social differences. The average rating on this item is 2.8, which is considerably higher than "2, very little effect," and it approaches the rating of "3, some effect." Since the next rating above "3" represents "very much effect," "3" might be interpreted as indicating considerable effect. The differences in judgment between the various curriculum and school groups of teachers are not large. The least effect is indicated by the industrial-arts teachers in the vocational schools, but they acknowledge that there is at least a small effect. All the teachers in the commercial and vocational schools report a smaller effect of segregation than do teachers in the academic, general, and comprehensive schools. In general, one might say that teachers in the different types of secondary schools believe that segregation of pupils in separate schools has a small influence in creating and fostering feelings of social differences between academic and vocational groups, and that teachers in the vocational schools believe that this influence is somewhat smaller than do teachers in the other types of schools. The judgments of these teachers do not support the contention that the separation of academic and vocational pupils in separate schools greatly increases the feelings of social difference.

Effect of social approval upon the choice of academic subjects.—There is one remaining item concerning which judgments of teachers were obtained. It does not relate so much to the social objective of the school as to the influence of social approval on the choice of subjects by secondary-school pupils. It illustrates the effect of social approval and social disapproval upon the activities of adolescents. The teachers in different types of schools are of the opinion that pupils elect academic subjects much more because of the social approval given to those subjects than because of their appropriateness, considering the interests and abilities of the pupils. This fact, insofar as these judgments are correct, presents a serious obstacle to leading these pupils by means of a program of guidance to select vocational subjects which give promise of benefit to them after they leave school.

Judgments were not obtained on the extent of influence of social approval on the choice of a school when specialized schools are available, but it is probably as significant in the choice of school as in the choice of subjects.

These judgments are not presented as final answers to the questions which have been canvassed but as the best basis for judgment until more valid bases are obtained. Some of the teachers may have had inadequate observation or experience to make the decisions called for. The variations in judgment that have been noted may reflect errors; they may also indicate that the effects are different in different situations.

3. MEASUREMENT OF ATTITUDES OF PUPILS

Scope of the investigation.—The measurement of attitudes and feelings has not progressed so far as the measurement of other characteristics of individuals. However, some progress has been made in developing measures of attitudes and in determining procedures for the construction of such tests. It was considered desirable to attempt to obtain objective evidence of the attitudes of pupils enrolled in different types of schools.

Two types of attitudes might be measured, namely, attitudes toward persons and attitudes toward types of work or curriculums. One could attempt to measure the attitudes of different groups of pupils toward each curriculum and the pupils enrolled in them. A large number of possibilities are apparent, more than could be developed. The first step was to delimit the problem.

It was decided to study two groups which, as regards type of pupils and character of work represented, seem most widely separated. These are the academic or college preparatory and the strictly vocational or industrial arts groups. If these exhibited no undesirable or undemocratic tendencies toward one another, it would not be unreasonable to assume that groups believed to be less different in character would exhibit no greater antipathy. The selection of these two groups was also based on the fact that vocational work of the industrial type is more often found in separate institutions and separated from the other types of work than any other.

The advocates of this segregation claim that it is desirable and even necessary. If no undesirable attitudes can be shown to arise from such segregation, at least one strong objection of those who oppose it will have been removed.

Construction of measuring instruments.—Having decided on the groups to be studied, the next question was the construction of appropriate tests. After a careful canvass of the literature in the field of attitude measurement and a study of existing techniques for the construction of measuring instruments of this nature, it was decided to employ the psychophysical method involving the use of equal-appearing intervals, as described by Thurstone and Chave in their monograph on "The Measurement of Attitude."[2] This procedure is one which has certain advantages over others which may, however, not be presented here in detail. Suffice it to say that there is probably a more scientific basis for this method of measuring attitudes than for any other known. The method consists essentially of the following steps:

(1) The collecting of a large number of expressions of attitude or opinion on a given subject.

(2) The sorting or arranging of these expressions of opinion into 11 groups varying from each other in intensity of like or dislike expressed by what appear to the person doing the sorting to be equal intervals. These 11 groups will range from most favorable through neutral to most unfavorable.

(3) The determination of scale values on the basis of the sorting procedure.

(4) The selection and arrangement of items into a scale.

For the purpose of constructing the scales to be used here, approximately 100 statements for each of the four scales were collected. These four scales were for the measurement of attitudes toward vocational pupils, vocation courses, academic pupils, and academic courses. Approximately 90 persons sorted each of the four groups of statements separately into 11 piles varying by equal-appearing intervals from most favorable through a neutral point to most unfavorable. Each position of the 11 being assigned a scale value differing by equal units from the one immediately preceding or following it, a distribution of the range of scale values for

[2] Thurstone, L. L., and Chave, E. J. The Measurement of Attitude. Chicago, University of Chicago Press, 1929.

any statement is obtained on the basis of the sortings. The accepted scale value of any item or statement is the median of this distribution. An indication of the extent to which the different individuals sorting the statements agree in their allocation of a particular statement is given by a measure of the dispersion of the distribution. In this case the Q value, or semi-interquartile range, was calculated for each statement. Using the median scale values and the Q values as criteria for the selection of items, four scales were constructed, three of which contained 31 statements each and the fourth 30 statements.

Reliability of measures.—The reliability coefficients of these scales, calculated by use of the split-halves technique and application of the Spearman-Brown formula, were as follows: That of scale 1, 0.650; that of scale 2, 0.614; that of scale 3, 0.423; that of scale 4, 0.621. The reliability coefficients, with the exception of that of scale 3 are fairly satisfactory, though not high for this type of measuring instrument. That of scale 3 is rather low. If the scale were to be used for individual prediction it would be unsatisfactory. However, since all the uses of these scales involve only group comparisons the low reliability is perhaps not a serious matter.

Selection of pupils for measurement.—The original plan in presenting the results of this study was to present the data for all 15 schools in which these scales were administered and to make a careful statistical analysis of them. Due to lack of time and funds, however, it was found necessary to reduce the burden of this particular item considerably. To this end, it was decided to select two situations, one typical of the comprehensive high-school set-up in which a broad variety of types of training are offered under one organization, and the other typical of the strictly specialized type of organization in which separate schools, each offering predominantly one line of training, are organized.

Two of the cities included in this study lent themselves rather well as examples of the two situations. In one, the scales were administered to a representative sampling of the student body of a large comprehensive high school. This school is an outstanding example of the comprehensive type of program and organization. It has a large student body

drawn from all socio-economic levels and all parts of the city. The offering is very broad, including everything on the secondary level from strictly cultural to purely vocational.

In the second city the scales were administered to representative samplings of the pupils in four separate schools. These were a general high school, predominantly college preparatory; a technical high school offering a college preparatory and a general technical curriculum; a high school of commerce; and a trade school offering training in a number of different industrial trades. These schools are all centrally located within a half mile of each other but in separate buildings. The programs of these various schools are definitely specialized and each school has its own principal and faculty. Moreover, although the schools are separate and the pupils are segregated, they are near enough to each other for the pupils in any school to know something about the kind of program and the type of pupils found in each of the others.

Limitation of data to be reported.—Before reporting on the measures of attitudes of pupils in the different types of schools in these two cities, mention should be made of certain limitations of the data. Only two cities are represented in this section of the study. One is a progressive New England city of 150,000 population. In it the segregated type of organization has been developed to a high degree. The other is a Middle Western city of 350,000 population. The New England city is probably more highly industrialized than the Western one. The 1930 census shows the Western city to have 3.8 per cent foreign born and the Eastern city to have 21.8 per cent foreign born. Other sources of data in this project show that 9.1 per cent of the fathers of pupils in the comprehensive high school were foreign born while in the four specialized schools from 33.2 to 68.4 per cent of the pupils' fathers were foreign born. For all four schools in the New England city 49.3 per cent of the fathers are foreign born. These differences in nationality with contrasts in the extent of class divisions in the countries represented, may affect the attitudes of pupils. Also, the communities of the Middle West are sometimes considered to be more democratic than the communities of the East, with differences in the

extent of existence of class distinctions. The fact that a community has organized its schools on a segregated basis may reflect deep-seated community attitudes that may be very much more potent in affecting the attitudes of pupils than the brief contact they have with the secondary school. It must be recognized, too, that internal administrative arrangements and the attitudes of the staffs of these schools may condition the attitudes of the pupils. Data would be required for a considerable number of schools of both types before a generalization could be made. The data to be given must be considered as descriptive of the attitudes of the pupils in the particular schools included in this investigation without showing the cause of such differences as exist. They may or may not be caused wholly or in part by the form of organization used. The data are presented as the first attempt to apply objective measures to this important problem. The final answer must await much more extensive measurement than has been possible in these studies.

Differences in attitudes of different groups of pupils are discovered.—The findings clearly indicate that differences in attitude toward a given group of pupils or curriculum exist between any two of the groups considered. Furthermore, it may be said that the group following a given curriculum exhibits significantly more favorable opinions toward that line of work and the pupils pursuing it than are exhibited toward them by pupils not in that curriculum. These findings are not different from what might reasonably be expected. Pupils in the academic curriculum seem, on the whole, less favorably disposed toward industrial and other curriculums and pupils in them. This amounts to saying that the pupils in the academic course are the most critical and the industrial are the least critical groups. The term "critical" here refers only to criticism of others. There is no evidence to show that academic pupils excel in self-criticism. What evidence there is on this point indicates that the vocational group, at least, is less self-satisfied than the academic group. This is equally true in both types of school organization. In practically all comparisons the commercial group is nearest the academic and the general is nearest the industrial in their respective attitudes. There is a tendency, however, for both com-

mercial and general groups to be more like the industrial than the academic.

Differences between the attitudes of pupils in comprehensive and segregated schools.—There are certain consistent differences between the measures of attitudes of pupils in the comprehensive and specialized schools. The attitudes toward industrial pupils and their type of work are less favorable in the specialized schools than in the comprehensive type. (See Table 55.) The same differences exist in the attitudes of industrial pupils toward the academic pupils and subjects. In fact, the pupils in the segregated schools are more critical toward all groups of pupils and subjects, including their own. It will be noted that all but one of the signs in Table 55 are minus, indicating that all but one of the comparisons disclose a more favorable attitude on the part of the pupils in the comprehensive school. These data indicate rather clearly that the pupils in this comprehensive high school in the Middle West are more tolerant and less critical in general than the pupils in the specialized schools of this Eastern city.

TABLE 55.—*Differences between the attitudes of pupils in comprehensive and segregated schools*

Curriculum	Critical ratios [1] of differences in attitudes of pupils in comprehensive and segregated schools			
	Toward industrial pupils	Toward indutrial courses	Toward academic pupils	Toward academic courses
1	2	3	4	5
BOYS				
Academic curriculum	−[2] 4.18	−4.91	−2.41	−1.03
Commercial curriculum	−1.86	−2.72	+.30	−.82
General curriculum	−3.51	−2.47	−1.22	−.68
Vocational curriculum	−2.13	−5.00	−4.65	−1.45
GIRLS				
Academic curriculum	−5.26	−4.88	−2.64	−.23
Commercial curriculum	−5.07	−.30	−6.72	−5.50
General curriculum	−4.83	−3.12	−1.34	−.61

[1] Critical ratio is obtained by dividing the difference by the standard error of the difference.
[2] The minus sign indicates that the pupils of comprehensive schools had the more favorable attitude. The plus sign indicates more favorable attitude of pupils in segregated schools.

Differences in attitudes of pupils in first and last year of secondary schools.—Comparisons were made of the attitudes of pupils in their first year with pupils in the last year in each type of secondary school. (See Table 56 and Fig. 8.) These comparisons can only roughly be considered as indications of change of attitude of pupils during their stay in the school. To measure change would require that pupils be tested when in the first year of the school and that the same pupils be tested again when in the last year. Extensive elimination takes place during the three or four years of the school. Contrasts between the attitudes of first-year and last-year pupils might be explained in part, at least, by this elimination.

TABLE 56.—*Differences between the attitudes of pupils in the first year and last year in various types of schools toward industrial and academic pupils and subjects*

Curriculum and type of school by sex	Critical ratios of differences in attitudes of first-year and last-year pupils			
	Toward industrial pupils	Toward industrial courses	Toward academic pupils	Toward academic courses
1	2	3	4	5
BOYS				
Academic curriculum:				
Comprehensive school	[1] −0.77	−2.30	−0.38	+1.63
Segregated school	+.11	−.80	+.16	+.27
Industrial curriculum:				
Comprehensive school	−3.89	−.05	+1.32	+4.03
Segregated school	+1.37	+1.68	−.60	+2.76
GIRLS				
Academic curriculum:				
Comprehensive school	−.39	+.74	+.22	+1.10
Segregated school	−.89	+.84	+.92	−.02
Commercial curriculum:				
Comprehensive school	+1.02	+.28	−.84	+.92
Segregated school	−2.72	−.91	+.98	+1.58

[1] The minus sign indicates a less favorable reaction in the last year than in the first year. The plus sign indicates a less favorable reaction in the first year.

Pupils in industrial curriculums in the last year are less critical of academic pupils and their work than the first-year pupils. Also, academic seniors are more favorable toward academic courses than the first-year pupils, with the one exception of the girls in the segregated schools, who give about the same reaction to these subjects on both levels.

There is not a corresponding increase in favorableness of attitude toward industrial subjects on the part of senior boys. Three of the four comparisons indicate that senior boys have less favorable attitude than first-year boys. The senior girls with but one exception give vocational subjects a higher rating than the first-year girls, but the differences are not statistically significant. On the whole, it can be said of the pupils in these two communities that the seniors, in comparison with the first-year pupils, give a more favorable rating to academic pupils and academic subjects, that the industrial

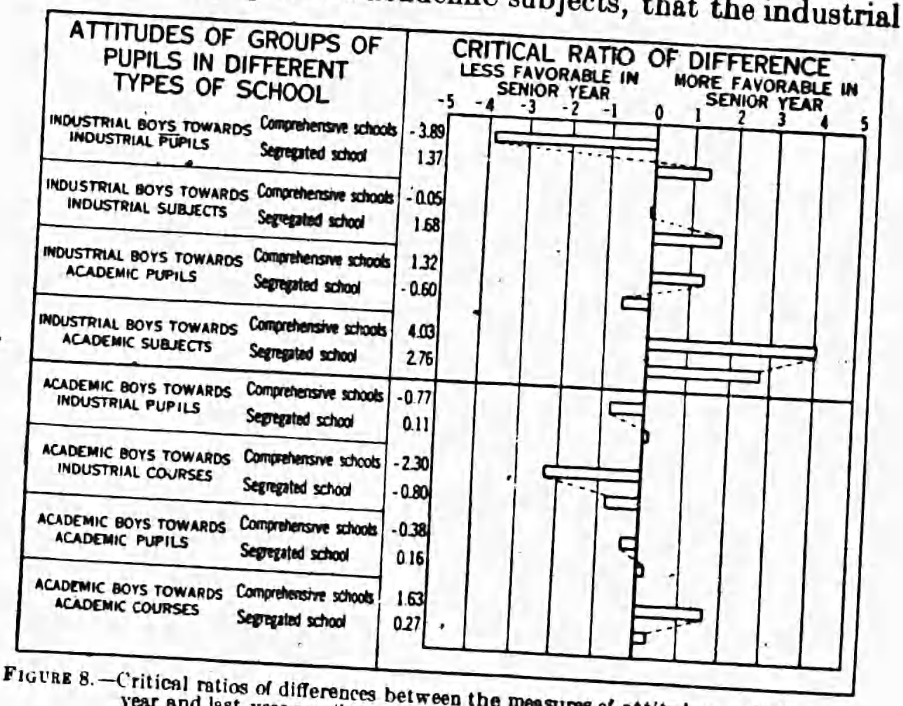

FIGURE 8.—Critical ratios of differences between the measures of attitudes applied to first-year and last-year pupils in comprehensive and segregated schools

courses are given a slightly less favorable rating by the boys and a slightly more favorable rating by the girls, and that some of the groups give a more favorable and other groups a less favorable reaction to the vocational pupils.

It might be pointed out that the size of the critical ratios presented in Tables 55 and 56 do not indicate size of differences. They indicate only the probabilities that the differences are real differences in the direction indicated by the plus and minus signs.

A comparison of pupils in various types of schools on the differences between the reactions of senior and first-year

pupils shows some interesting contrasts. The industrial senior boys give the academic pupils a higher rating than the first-year boys in the comprehensive school but a lower rating in the segregated school. The ratings of attitudes toward the academic subjects were higher for the seniors, in comparison with first-year pupils, in both types of schools, but the probabilities that the difference was a real difference was greater for the pupils in the comprehensive school. The industrial senior boys in the comprehensive school reacted less favorably than the first-year industrial boys toward industrial subjects and pupils, but the senior boys in the segregated schools reacted more favorably. If these data represent change in attitude, one could say that the industrial pupils in the comprehensive high school changed in their attitude so as to regard their own group of pupils and subjects less highly and the academic pupils and subjects more highly, and that industrial boys in segregated schools shifted in their attitude to regard their own group and subjects more highly, to regard academic pupils less highly, and to increase their regard for the academic subjects but with less assurance that the difference was a real difference than for the industrial boys in comprehensive schools. While many of these differences between first-year and last-year pupils are very small, most of them not statistically significant, the data are consistent in supporting this observation. This consistency can be interpreted as indicating significance even if individual differences should be without statistical significance. Since the changes are in opposite directions in three instances (if the differences might be referred to as change) the differences between the data for the two types of schools are large enough to take on some significance.

The academic senior boys in both types of schools are more critical of industrial subjects than the first-year boys, the probabilities of a real difference being larger for the comprehensive school. The differences between the reactions of the academic pupils in each type of school toward themselves and toward industrial pupils are too small to be significant.

The differences between the reaction of commercial senior and first-year girls is the reverse of that reported for the

industrial boys. The senior commercial girls in the comprehensive school gave industrial pupils and subjects a higher rating than first-year girls, but those in the segregated school gave them a lower rating. The probabilities of real differences are smaller for the attitude of commercial girls toward the academic pupils and subjects. However, the small differences indicate that the senior girls were slightly more favorable than the first-year girls toward the academic pupils in the segregated school and slightly less favorable toward the academic pupils in the comprehensive school. For the attitudes toward academic courses, the reactions were more favorable for the senior girls in both types of schools, but the difference is slightly greater for the segregated school. Negligible differences are noted between the reactions of the academic girls in the two types of schools. Generalizing in terms of change of attitudes of pupils, the commercial girls in the comprehensive high school became more favorable toward industrial pupils and subjects, and the commercial girls in the segregated school became more favorable toward academic pupils and subjects. This pattern of change is just the reverse of that reported above for boys where it was indicated that the industrial boys in the comprehensive schools became less favorable toward industrial pupils and subjects and more favorable in the segregated schools, and that industrial boys in the comprehensive schools became more favorable toward academic pupils and subjects than the industrial boys in the segregated schools. However, this attitude of commercial girls toward the industrial pupils is an essentially different thing than the attitude reported on for industrial boys. The industrial boys were reacting toward their own courses and toward their own group of pupils. The commercial girls were not reacting toward commercial pupils and courses, but toward industrial pupils and courses.

In the segregated schools the commercial pupils were separated from the industrial pupils and courses. Consequently, the comparisons of the attitudes of commercial girls toward industrial pupils and courses indicate a more favorable reaction in the senior year than in the first year when they were in the same comprehensive school, but a less favorable

attitude in the senior year when they were in separate schools.

As has already been indicated, many of the differences between the reactions of senior and first-year pupils are very small, as are many of the differences between the two types of schools. The direction of the difference has been interpreted from the signs in the table even though the size of the critical ratio may indicate that the individual difference was not statistically significant. The consistency of direction of difference was made clear by that procedure. Also, one can not be certain that the differences represent changes in attitudes of pupils, since different groups of pupils are represented on the two levels and the elimination of pupils might cause the fraction of the group remaining in the senior year to have a different reaction than that of the total group enrolled in the first year. However, it is deemed desirable to call attention to certain patterns of changes and to point out the small differences. Most of the critical ratios reported in Table 56 are small. However, many of them indicate changes in different directions (shown by disagreement of signs) so that the extent of assurance of the existence of real differences, between the two types of schools in those cases are obtained by combining the critical ratios.

4. SUMMARY AND SIGNIFICANCE

Judgments of teachers in different types of schools.—Teachers are of the opinion that the form of organization does affect the attitudes of pupils. Averages for different groups were presented. These group averages were not always in agreement as to the nature or as to the amount of the effect. Individuals differ even more. The average of the different groups seemed to be the most satisfactory form for presentation, but the reader should not conclude that all of the teachers within each group hold the same opinion.

On the average, teachers believe that vocational pupils are likely to participate in social activities slightly less when in a separate school than if they were part of a comprehensive school. They believe, also, that vocational pupils do not associate so freely with academic pupils in out-of-school

activities when they are enrolled in separate schools as when they are enrolled in the same school.

These teachers agree that association of vocational pupils with academic pupils has a good effect on their work attitude. The groups vary in their judgment on the extent of the value of such association. The largest value is indicated by the teachers in vocational schools. Separation of academic and vocational education is believed by teachers to make the group spirit and morale of vocational pupils slightly stronger than if they were enrolled in a comprehensive school. Teachers believe that the segregation of academic and vocational pupils in separate schools has some effect in creating and fostering feelings of social differences between the two groups. None of the groups indicates that it does not have some effect. A smaller effect is reported by teachers of commercial and vocational schools than by teachers in academic, general, and comprehensive schools. While it must be conceded that these observations may not be without error, the observation of these 2,738 teachers should be of value in ascertaining the influence of a plan of organization. While the experience of one teacher may be limited, each teacher has had close contact with a considerable number of pupils. Also, the composite judgment serves to pool the experience of the different teachers.

Measurement of attitudes of pupils in different types of schools.—The measurement of attitudes of pupils in two communities shows some interesting contrasts. Groups differ in their attitudes toward other groups. Each group following some curriculum reacted more favorably toward that line of work and the pupils pursuing it than was exhibited toward them by pupils not in that curriculum. The academic pupils were the most critical toward industrial pupils and subjects, but they were not equally critical of themselves. Industrial pupils were more disposed to be self-critical than the academic pupils. Pupils in the different curriculums in segregated schools were more critical of other curriculums and pupils in them than were pupils in the comprehensive school. This would suggest a less favorable relationship or attitude between the different groups. However, the pupils in segregated schools were also more critical of their own groups and

subjects, indicating a somewhat general tendency to react more critically. Some comparisons of the attitudes of first-year pupils with the attitudes of senior pupils showed that senior industrial boys in comprehensive schools reacted less favorably toward industrial pupils and subjects and more favorably toward academic pupils and subjects than did the first-year pupils. This shift is not disclosed for industrial pupils in segregated schools. Commercial senior girls in comparison with first-year girls reacted more favorably toward industrial pupils and courses in the comprehensive school than in the segregated school and less favorably toward the academic pupils and subjects. This difference may reflect an effect of association of vocational with academic pupils. The smallness of these differences and the possible effect of elimination of pupils was pointed out.

The comparison of measures on the pupils of these two communities did not show consistently a more favorable situation in one community than in another. What advantage there is would favor the comprehensive school. However, the data are not consistent and many of the differences are very small. These data were not adequate to support or to challenge either form of organization. More extensive measurement will be necessary before that can be done.

CHAPTER VIII : EDUCATIONAL AND VOCATIONAL ACTIVITIES OF FORMER PUPILS

1. SIGNIFICANCE OF FOLLOW-UP DATA

Postschool activities of former pupils important.—The programs of various types of secondary schools and the characteristics of the pupils served by them have been described in some detail in the preceding chapters. The vocational programs have been developed to prepare pupils for later vocational activities. Consequently, much importance should be attached to the extent to which students enter the vocations for which they were trained in high school. Specialized vocational training which utilizes a large proportion of the time of pupils in high school can be justified only to the extent that it aids them in entering and advancing in their chosen occupations. Two forms of evidence, then, are significant (1) the extent to which former pupils engage in the occupation for which they obtained training and (2) the degree of success attained in that occupation. Comparisons of these data for different types of schools and for pupils with and without the different forms of training should throw some light on the extent that different forms of organization and different types of training are proving to be effective. These data are especially pertinent in the present investigation with respect to those pupils who enter some occupation directly from the public secondary schools without further training. These are the chief concerns of the follow-up studies reported in the present chapter, although certain additional related data will be presented.

Schools and pupils included in study.—The schools included in the follow-up study were the same schools described in the chapter on the character of the student population. Two classes, whenever available, were approached in each school. These were: The class which would normally have been graduated in 1924 and the one expected to be graduated in 1929. In 4-year schools these would be the classes entering in 1920 and 1925, respectively. In schools where the curriculums

were less than 4 years in length, classes were selected which would have been expected to be graduated at the dates mentioned, namely 1924 and 1929. By this means data were obtained from two groups, one of which had been out of school, if graduated, for 2 years, the other for 7 years. In the case of those leaving before graduation, these periods were, of course, longer.

In each school the names and addresses of the pupils who entered with one or the other of the two classes were taken from the records. However, the names of those who had not remained in school long enough to receive any marks were discarded. In some of the larger schools not every pupil was taken because of the size of the classes. In these cases a random sampling was taken. On the average 309 pupils per class from each school were included. In addition to the names and addresses, the curriculum, courses taken, and average mark in all courses of every pupil were placed on a card prepared for this purpose. These data were obtained in 27 schools for the classes of 1924 and in 35 schools for the classes of 1929. These groups included 18,555 pupils, about 45 per cent of whom were in the class of 1924 and about 55 per cent in the class of 1929.

A check list designed to obtain rather complete data on the educational background and educational and vocational experiences of these pupils since leaving the school from whose records their names and addresses were obtained, was sent to each of the 18,555 former pupils. These were sent out during April and May 1931, accompanied by a letter from the principal or director of the school and another from the United States Commissioner of Education. A total of 3,325 returns on this first approach were received. As these came in, three copies of a rating scale to obtain ratings of the occupational efficiency of these respondents were sent to the employers of each one that gave the name and address of his employer. A second copy of the check list and another letter from the Commissioner of Education was sent in July to those who had not replied to the first letter. The second inquiry form was not sent to those whose address was indicated by the postal authorities as being incorrect. The same

procedure as used in the second approach was followed a third time during August and September.

Of the original list of 18,555 a total of 4,660 were never reached because of incorrect or insufficient address. This leaves 13,895 who are assumed to have been reached. A certain number of these undoubtedly never saw the check list because they had left the family home and the parents did not forward or deliver the letters. A number also had died or become lost to their relatives and acquaintances in the time since leaving school. Of these 13,895, who represent the maximum number reached, 7,330, or 52.8 per cent, replied. Approximately two-sevenths of these were in the class of 1924 and almost five-sevenths in the class of 1929. The difference in proportionate return is probably to be accounted for largely in terms of the length of time out of school and consequent greater difficulty in locating these persons as well as their decreased interest in such matters. For various reasons not all these returns could be used, but 5,190 were coded and punched on Hollerith cards. The distribution by sex shows that 2,760 were received from men and 2,430 from women.

Extent to which respondents are representative of entire group approached.—In the interpretation of these data, the question arose as to the degree to which the usable returns were representative of all the pupils who were enrolled in the various classes. It might be expected that the group returning the check list would be selected in one or more ways. There was one respect in which the degree of selection could be determined. The average mark of all pupils who entered in these classes was available. It was possible to average these indexes of scholarship for those who returned the check list and for all students approached. This was done and the statistical significance of the differences between the averages was calculated for each class in each school. These are thrown into the distribution shown in Table 57.

These data show a range of critical ratios (differences divided by the standard error of difference) for the 1920 classes from one case in the interval 5–5.99 to six cases in the interval 0–0.99. The median of these critical ratios is 2.06. The critical ratios of the 1925 classes range from one in the

6–6.99 interval to five in the 0–0.99 interval. The median is 2.38. All the differences except the two (one in the 0–0.99 group and one in the 1–1.99 group for 1925) favor the groups returning the check list. That is, the average scholarship of those replying was higher than that of the total group. This is true for all types of schools. The two exceptions occur in a technical high school and in a general high school. These critical ratios were based on the standard errors of the differences. The median critical ratios in both distributions fall at a point indicating that the chances are between 95 and 99 to a 100 that the difference is a true difference greater than zero and in the direction indicated.

TABLE 57.—*Distribution of critical ratios*[1] *of differences between average marks of pupils who returned the follow-up check list and those of all pupils approached for the different types of schools*

[The numbers represent numbers of schools]

Critical ratio	1920						1925					
	Comprehensive	General	Technical	Commercial	Trade	Total	Comprehensive	General	Technical	Commercial	Trade	Total
1	2	3	4	5	6	7	8	9	10	11	12	13
6–6.99											1	1
5–5.99		1				1	3					3
4–4.99							1	1				2
3–3.99		1			1	2		1			1	2
2–2.99	4	5	2	1		12	2	4		1		7
1–1.99	2	2			1	5	1	5	2	1	1	10
0–0.99	1	1	2		2	6			2	1	2	5
Average of critical ratios	2.02	2.55	1.55	(2)	1.39	2.06	3.97	2.08	0.95	1.61	2.41	2.38

[1] Critical ratio is obtained by dividing the difference by the standard error of the difference.
[2] The average is omitted for this group because only one school is represented.

The size of the critical ratio of the differences varies somewhat among the different types of schools. The critical ratios for the 1920 groups are larger for the comprehensive and general schools than for the technical and trade schools, indicating greater selection in the returns of students of the comprehensive and general schools. The selection is also greater for the comprehensive and general schools in the 1925 groups than for the technical and commercial groups,

but the selection for the trade school is exceeded only by the comprehensive school.

It appears, therefore, that the group returning the check list is somewhat selected with respect to marks received in school. The degree of selection varies to some extent from school to school. For all schools and classes combined there is a rather strong indication that the respondents to the questionnaire are, in point of scholarship, superior to the entire group. It will be well to keep in mind, as the comparisons to follow are presented, that the picture is probably somewhat more favorable than that which would appear if returns had been obtained from all pupils approached and that it is probably somewhat more favorable for certain types of schools than for others. This is true, at least insofar as scholarship has any bearing on the data to be presented.

As in the study on the characteristics of pupils now enrolled in secondary schools, it was found necessary to combine schools into groups. The groups, or types, of schools used are comprehensive schools, general schools, technical schools, commercial schools, and trade schools. The pupils in various curriculums were grouped a little differently here than in previous presentations because returns were received from so few cases in some curriculums that it was not deemed advisable to attempt separate treatment of them.

The follow-up analyses involved two types of investigation (1) an extensive analysis of the after-school activities of 7,330 former students and (2) intensive treatments of the data for 1,496 former students. These two groups of data will be reported separately, the extensive treatment in the next section and the intensive treatment in Section 3.

2. EXTENSIVE FOLLOW-UP STUDY OF 7,330 FORMER PUPILS

Reasons for leaving school before graduation.—The factors which caused pupils to leave school before graduation can not be determined with complete accuracy. In the present study, it was necessary to rely entirely on the statements of former pupils, and these statements were given long after the time of leaving, in some cases as many as 10 years.

More significance could be attached to data concerning causes of leaving school if they were obtained at the time of leaving school, although there is probably some advantage in obtaining responses at a later date. Pupils may be more likely to state the real reason for leaving and not be moved so much to make statements which would place them in a favorable position with their fellows and with the staff of the school. The impersonal approach made in the present investigation should be favorable to honest responses. It should be recognized that some pupils would not know the real reason for leaving school. Answers were given to this question by 38.1 per cent of the men and 25.6 per cent of the women. (Reported in Table 58.) The question did not apply to those who completed high school; and some of those who left early did not reply.

TABLE 58.—*Percentages of former pupils who reported each reason as the most important for leaving high school before graduation*

Most important reason	Boys (1,052)	Girls (621)
Failure in school work	1.8	2.1
Lack of interest in school work	17.3	10.6
Unfavorable home conditions	7.0	7.2
Training for chosen occupation not available	5.4	2.3
Completed the course which was started	3.5	2.9
Transfer to private school	3.2	5.6
Opportunity for good position	10.5	5.2
Desire to be earning money for self	11.6	12.2
Desire of parent that pupil go to work	2.3	2.6
Necessary to help support family	22.1	15.1
Necessary to help with work at home	.8	6.1
Necessary to support self	4.1	6.9
Poor health	2.5	12.7
Transfer to trade school	1.9	.3
Other reasons	5.9	8.1

The most frequently checked reason for leaving school before graduation is an economic one. This is true of both sexes and in all types of schools. "Necessary to help support family" is checked more frequently than any other reason. The three reasons of an economic type include more than one fourth of all cases answering the question. The reason next most frequently checked for boys is "lack of interest in school work." This is particularly high in the commercial curriculum in the comprehensive group.

The second highest percentage of the girls check "poor health" as the chief reason for nongraduation. Other

reasons frequently checked by girls are "desire to be earning money for self" and "lack of interest in school work." It is interesting to note that "parents wanted you to go to work" was checked by only about 2.5 per cent of both sexes. Evidently this reason is not often apparent or operative. It should be pointed out that the proportions answering this question on the reason for leaving before graduating are much larger in the commercial and other vocational groups than in the academic group. It may be inferred from this that a larger proportion of the academic group graduated and, hence, this question on reason for leaving before graduation did not apply to them.

No consistent differences occur between types of schools or the various curriculums. It would appear that approximately the same reasons operate in the different types of curriculums and schools.

Further education.—It is common knowledge that many pupils do not cease attending school when they leave the high school. Many go on to colleges or other full-time schools, after they are employed and others take courses in part-time schools. The percentages of the students entering the different schools in 1920 and 1925 who continued their education after leaving these schools are shown in Table 59. Almost 24 per cent of the boys and about 30 per cent of the girls continued their education on a full-time basis directly from high school. There are, however, large differences between various types of schools. Relatively few of either sex from technical schools continued on a full-time basis. The general and the comprehensive schools sent many more to further full-time education. As between the different curriculums the highest proportions going on to further full-time training are those who take college preparatory work. The lowest are for those in industrial arts and commercial groups. Data are not presented for pupils who attended the trade school, since they did not interpret the trade school as a secondary school. They reported that they attended trade school when they left high school.

TABLE 59.—*Percentages of boys and girls who continued their education in various ways after leaving high school*

Form of training taken after leaving high school	Boys													Girls											
	Schools and curriculums in which pupils were enrolled when in high school													Schools and curriculums in which pupils were enrolled when in high school										
	Comprehensive schools				General schools				Technical schools			Commercial schools	Total	Comprehensive schools					General schools				Technical schools			Commercial schools	Total
	Academic	Commercial	Industrial arts	Others	Academic	Commercial	Industrial arts	Others	Academic	Industrial arts	Others			Academic	Commercial	Fine arts	Household arts	Others	Academic	Commercial	Household arts	Others	Commercial	Household arts	Others		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
Continued full-time education after leaving high school and have had no training since going to work	42.7	15.3	4.3	21.5	48.4	12.6	7.4	32.1	17.0	3.9	10.0	30.1	25.7	62.7	10.0	43.5	12	29.6	64.2	9.2	24.5	43.5	4.8	3.2	16.5	16.2	32.9
Did not continue full-time education when leaving high school but have had further training since beginning work	17.0	37.6	35.6	24.4	18.8	33.7	29.6	28.5	47.1	53.3	55.6	26.0	31.7	12.3	27.9	26.1	32	22.0	8.5	29.6	24.1	19.1	51.0	48.4	48.6	28.3	23.6
Continued full-time education when leaving high school and have had further training since employed (this item covers the two types of training numbered 1 and 2)	23.7	9.4	8.0	14.5	20.7	7.4	18.5	19.5	7.2	5.0	8.3	17.3	14.5	14.1	6.8	17.4	20	11.0	20.1	6.6	17.2	14.4	5.8	12.9	5.5	8.7	12.0
No further training since leaving high school	16.6	37.6	52.1	39.6	12.2	46.3	44.4	19.9	28.7	37.8	26.1	26.5	28.1	10.9	55.4	13.0	36	37.3	7.3	54.6	24.1	23.0	38.5	35.5	29.4	46.7	31.6
Number of persons represented	241	85	163	275	426	95	27	221	223	180	180	196	2,312	220	251	23	25	263	413	196	29	278	104	31	109	321	2,263

The second category includes those who did not continue their education on a full-time basis directly after leaving elementary or high school but who have had further education (either full-time or part-time) since beginning work. It is likely that most of these are individuals who are working and going to continuation or evening schools. The percentages of all groups and sexes combined who do this fall between 30 and 35 per cent. Among different types of schools the highest proportions in this category are from technical high schools. The lowest proportions taking training after beginning work are from comprehensive and general high schools and in the academic curriculum.

In the third group are those who had full-time training directly after leaving high school and also have had further training since beginning work. The highest proportions following this program are those for the academic groups in the comprehensive and general schools. About a seventh of the boys and an eighth of the girls are in this group.

In the fourth group are those for whom high-school training on a full-time basis is the last formal education they received. These percentages are 28.1 per cent for boys and 31.6 per cent for girls. The highest proportions in this group are from the technical and the general high schools. The highest proportions by curriculums are for commercial girls and industrial arts boys. The percentages are especially low for former pupils in academic curriculums.

An impressive proportion of these former pupils, about three-fourths, continued their education after leaving high school. Some of them go on to higher levels of education and others supplement their training by part-time study. The day high school does not serve generally to complete the education of its pupils. Instead, it is only a segment of their total educational program.

Experiences after leaving school.—In the preceding paragraphs data were presented which show the extent to which pupils continue to study after leaving the day high school. A more detailed analysis of these facts is shown in Tables 60 and 61.

TABLE 60.—*Percentages of boys who engaged in different forms of activity after leaving school*

Experience	Schools and curriculums in which pupils were enrolled when in high school												
	Comprehensive schools				General schools				Technical schools			Commercial schools	Total
	Academic	Commercial	Industrial arts	Others	Academic	Commercial	Industrial arts	Others	Academic	Industrial arts	Others		
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Went directly to work	30.2	67.9	84.5	59.0	25.9	75.0	67.9	43.3	67.5	84.4	74.9	77.7	56.5
Helped parents at home	1.3	....	1.3	1.1	1.0	2.1	....	.5	1.4	2.4	1.2	1.7	1.2
Traveled	....	1.3	.6	2.6	.5	1.0	7.1	.9	.5	....	2.4	2.8	1.1
Took vacation (more than 3 months)	.4	2.6	1.9	1.1	2.9	2.1	....	1.4	3.8	4.2	1.8	2.8	2.2
High school (post-graduate)	.9	1.3	1.3	1.1	2.2	3.1	....	2.3	1.4	....	.6	1.1	1.4
College preparatory school	2.6	....	1.3	.7	3.4	....	....	1.9	1.9	.6	.6	1.1	1.6
Private business or commercial school	1.3	7.7	.6	1.9	3.3	4.2	....	3.7	.9	.6	1.2	5.1	2.5
Private industrial or trade school	.4	....	1.9	1.1	1.2	1.0	7.1	1.4	1.9	4.2	.6	1.7	1.4
Normal school	....	....	.6	.4	1.0	....	7.1	2.8	....	....	.6	....	.7
College or university	59.6	14.1	3.2	26.9	55.0	8.3	3.6	36.3	19.3	.6	10.8	4.6	27.6
Agricultural school	1.3	....	....	....	....	....	....	....	.5	....	....	....	.2
Trade school	....	....	....	1.1	.2	....	3.6	.5	.5	3.0	.6	....	.6
Other	2.1	5.1	2.6	3.0	3.4	3.1	3.6	5.1	.5	....	4.8	1.1	2.8
Number of persons represented	235	78	155	268	416	96	28	215	212	167	167	245	2,282

More than 50 per cent of all boys went directly to work. This proportion ranges from 25 per cent and 30 per cent of those in the academic curriculums to as high as 84.5 per cent in the industrial arts curriculum. More than half of those in the curriculums in the comprehensive and general schools went to college or the university. The percentages are much lower for the other curriculums and schools. Only a fifth of those in the academic curriculums in the technical schools entered college. The proportions who check the other items are too small to merit separate mention.

Of the girls, 39.6 per cent went directly to work. The proportion ranges from 9.1 per cent of those in the academic curriculum in general high schools to 66.1 per cent of those in commercial work in the same schools. The next highest item for all girls is "college or university." This ranges from none

of the girls in commercial work in technical high schools to 55 per cent of girls in academic work in comprehensive high schools.

TABLE 61.—*Percentages of girls who engaged in different forms of activity after leaving school*

Experience	Schools and curriculums in which pupils were enrolled when in high school												Total
	Comprehensive schools				General schools				Technical schools			Commercial schools	
	Academic	Commercial	Household arts	Other	Academic	Commercial	Household arts	Other	Commercial	Household arts	Other		
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Went directly to work	15.0	62.5	36.4	35.7	9.1	66.1	14.3	26.5	58.0	50.0	53.4	72.6	39.6
Helped parents at home	4.0	9.7	13.6	7.2	2.5	10.4	21.4	6.0	18.2	10.7	13.6	7.8	7.4
Became housewife	.9	2.2	13.6	6.5	1.0	1.6	7.1	2.6	1.1	10.7	3.9	3.3	2.9
Traveled	.4	.4	----	1.1	.2	----	----	.7	1.1	----	----	----	.4
Took vacation (more than 3 months)	2.7	4.8	----	5.8	2.0	4.4	3.6	2.6	8.0	7.1	2.9	5.4	4.0
High school (post-graduate)	.4	3.1	----	1.4	3.7	.5	----	3.7	1.1	----	5.8	1.7	2.3
College preparatory school	3.2	----	4.5	.7	3.7	----	----	1.1	----	----	----	----	1.5
Private business or commercial school	10.4	10.1	4.5	8.3	9.1	9.8	7.1	16.0	3.4	7.1	9.7	4.3	9.2
Private industrial or trade school	----	1.3	4.5	----	.2	----	----	.4	2.3	3.6	----	----	.4
Normal school	2.7	----	----	2.2	15.4	1.1	3.6	10.8	----	----	1.9	.3	5.1
Home-economics school	.4	----	4.5	----	----	----	7.1	1.1	----	----	----	.3	.4
Agricultural school	----	----	----	.4	----	----	----	----	----	----	----	.3	.1
College or university	55.0	4.0	9.1	24.9	46.3	2.7	28.6	17.9	----	3.6	2.9	1.0	21.1
Trade school	.4	.4	4.5	----	1.0	1.1	----	.4	5.7	3.6	1.0	----	.8
Other	4.9	.9	4.5	5.8	5.9	2.2	7.1	10.1	1.1	3.6	4.9	2.4	4.6
Number of persons represented	220	227	22	277	408	183	28	268	88	28	103	389	2,191

Method of obtaining first position.—Reference was made earlier in the present chapter to the importance of the placement of pupils in occupations for which they have been trained. It is a common practice to release in June of each year, through graduation or completion of the year's work, large numbers of candidates for positions, many more than the employment market can absorb at any one time. Some schools provide employment service to help pupils obtain proper placement. In other schools, pupils are left entirely to their own resources. The procedures reported by 2,241 boys and 1,774 girls in obtaining their first positions are recorded in Table 62.

TABLE 62.—*Percentages of boys and girls who were helped in various ways to obtain first positions after leaving school*

Nature of help	Boys														Girls												
	School and curriculum in which pupil was enrolled when in high school														School and curriculum in which pupil was enrolled when in high school												
	Comprehensive schools				General schools				Technical schools			Commercial schools	Trade schools	All types combined	Comprehensive schools				General schools				Technical schools			Commercial schools	Trade schools	All types combined
	Academic	Commercial	Industrial arts	Other	Academic	Commercial	Industrial arts	Other	Academic	Industrial arts	Other				Academic	Commercial	Household arts	Other	Academic	Commercial	Household arts	Other	Commercial	Household arts	Other			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
Persons worked for before leaving school	14.6	16.7	12.3	20.1	8.3	16.9	19.2	16.8	12.3	6.0	8.7	6.0	5.0	11.1	4.7	7.3	11.8	9.3	6.9	4.4	7.7	5.1	3.8	4.5	3.6	4.3	1.8	5.6
Advertisement by self in paper	....	....	.6	.9	.8	....	....	....	....	....	....	.5	.3	.3	....	.9	....	.5	....	....	....	.5	1.3	....	....	1.3	.9	.6
Employment agency	3.3	5.1	....	4.3	3.1	5.6	....	2.2	2.1	3.6	5.3	1.1	1.6	2.8	5.6	10.4	11.8	8.4	7.8	4.4	....	5.1	12.7	4.5	6.0	8.6	1.8	7.3
Located in family business	9.3	3.8	3.2	5.6	8.7	7.9	11.5	7.0	4.3	1.8	8.7	6.0	4.2	5.8	.9	1.7	5.9	2.8	.5	2.7	....	4.1	2.5	....	6.0	2.3	2.8	2.4
Personal friends	25.2	24.4	27.7	25.6	27.1	21.3	23.1	22.7	20.9	26.9	22.7	24.7	22.5	24.3	27.1	22.9	17.6	25.1	21.2	24.7	23.1	28.1	31.6	18.2	16.7	21.1	29.4	24.1
Former pupils of school	2.6	....	1.3	.9	....	1.1	....	1.1	1.6	.6	....	....	1.3	.9	.9	1.3	....	....	.9	1.6	....	.5	1.3	....	....	.7	.9	.8
Teacher or placement bureau of school	8.6	10.3	12.9	4.3	3.5	7.9	3.8	2.7	12.8	10.2	8.0	21.4	12.8	9.5	2.8	17.7	17.6	6.5	5.1	19.8	....	6.6	8.9	18.2	17.9	32.7	4.6	14.1
Teacher or placement bureau of private school	2.0	2.6	.6	1.3	3.5	1.1	....	1.1	....	1.8	.7	.5	4.7	2.0	14.0	6.5	....	5.1	9.2	3.8	7.7	9.7	2.5	4.5	8.3	2.0	2.8	6.0
Personal search for a job	28.5	34.6	36.1	33.3	35.4	33.7	34.6	43.2	42.8	43.7	40.0	34.6	42.0	38.0	32.7	26.8	29.4	36.3	31.8	31.3	61.5	30.1	30.4	40.9	38.1	24.1	40.4	31.3
Other means	6.0	2.6	5.2	3.8	9.4	4.5	7.7	3.2	3.2	5.4	6.0	4.9	5.7	5.3	11.2	3.9	5.9	6.0	16.1	7.1	....	10.2	5.1	9.1	8.6	3.0	14.6	7.8
Number of persons represented	151	78	155	234	254	89	26	185	187	167	150	182	383	2,241	107	230	17	215	217	182	13	196	79	22	84	303	109	1,774

The method most frequently mentioned is that of personal search or just "looking for a job." Almost 40 per cent of the boys and almost a third of the girls check this item. The next highest is "through personal friends" mentioned by about one-fourth of both sexes. These two responses are rather uniformly checked in all types of schools and curriculums. The third highest for boys, checked by 11.1 per cent, is "persons worked for before graduation," and this is closely followed by "teachers or placement bureau of high school" with 9.5 per cent. For the girls, the third highest is the one just mentioned, checked by 14.1 per cent, and the fourth is "other means" not specified but checked by 7.8 per cent. The remainder of both sexes are scattered among the other responses, the lowest being "advertisement by self in paper" and "former pupils of school." Boys appear to go into the family's business more often than girls. The picture is, on the whole, quite consistent. According to these reports, the school plays a minor part in the placement of these pupils. A larger proportion of former pupils of commercial and industrial arts curriculums report having received aid from the school in locating their first positions than was reported for other curriculums.

Reasons for choosing first job.—In view of the facts just presented, one might predict with fair accuracy the reasons (Table 63) for choosing the first positions.

TABLE 63.—*Percentages of former pupils who reported different reasons as the most important in the choice of their first positions*

Most important reason	Boys (2,241)	Girls (1,774)
Had been trained for it in school	15.4	28.7
Had special ability for it	4.1	4.4
Had special interest in it	16.4	17.6
Had belief that the work would be enjoyable	9.4	10.8
Had good beginning pay	4.5	2.5
Had good prospects for future	13.4	6.1
Had good opportunity for travel	.8	----
Was unable to find any other position	25.2	19.5
Was near home	1.0	2.0
Was in harmony with parents' desire	3.8	2.7
Other reasons	6.0	5.8

NOTE.—The numbers in parentheses indicate the number of boys and girls reporting.

The most frequently mentioned reason for boys is "unable to find any other job," checked by 25.2 per cent. The second highest percentage of boys checked "had special interest in this type of work" followed closely by "trained for this work in school." There is a large difference in the percentages indicating "trained for this work in school" between boys in the industrial arts in comprehensive (11.7) and general (15.4) schools and those in the same work in technical (28.6) and vocational (22.9) schools. Almost twice as many in this curriculum in the latter two types of schools check this reason as in the former, although no such differences occur between types of schools or curriculums for the reason of "special interest." There is here some indication that boys trained in industrial arts in technical and trade schools enter an occupation in the same field as their training in larger proportions than boys similarly trained in comprehensive and general high schools. Data presented later will support this observation for the trade schools but not for the technical schools.

The most common reasons given by girls, checked by more than a fourth, is "trained for this work" in school. The proportions are considerably higher for the girls in commercial curriculums than for those in other curriculums. The girls in household arts check this reason much less often, except in the trade-school groups. The next most frequently mentioned reason for girls is that most often checked by boys, namely "unable to find any other job." This is followed quite closely by "special interest in this type of work."

Relatively more boys than girls took a job because of "prospects for the future" while girls more often than boys checked "thought you might like this type of work."

The high proportions of both sexes indicating that they took their first job because they had no alternative agrees with the facts on methods of obtaining these jobs. The implications are not favorable either to the successful functioning of guidance and placement organizations or to the efficacy of the training received by these students.

Number of positions held.—In the data presented thus far no distinction has been made between the 1920 and the 1925

groups. In following sections the facts will be shown in most instances separately for the two classes. The first item is the number of different jobs held since leaving school. (See Table 64.)

TABLE 64.—*Numbers of boys and girls holding various numbers of jobs since leaving the school from which their records were obtained*

Number of jobs	1920		1925	
	Boys (773)	Girls (626)	Boys (1,571)	Girls (1,189)
	2	3	4	5
0	5	----	2	1
1	239	255	611	618
2	186	173	373	286
3	127	114	270	160
4	83	41	163	71
5	60	20	75	31
6	29	12	41	10
7	18	8	24	4
8	21	2	8	4
9	4	1	4	3
10 or more	1	----	----	1
Median	2.77	2.34	2.46	1.96
First quartile	1.79	1.61	1.64	1.48
Third quartile	4.27	3.36	3.71	2.95

NOTE.—The numbers in parentheses indicate the number of boys and girls reporting.

In all groups, more than 50 per cent have held two jobs or fewer and, except for the 1920 boys, more than three-fourths have had three jobs or fewer. Two facts may be inferred from these data. First, a relatively small number of occupational shifts have been made by these persons. It will be seen in the monograph on part-time secondary schools that pupils in part-time schools shift somewhat oftener. The second fact is the small difference between the 1920 and the 1925 groups, even though the former has been out of school more than twice as long as the latter. A possible explanation of this is that these pupils do most of the changing of jobs during the first few years after leaving school.

Present salary.—One index of the success of pupils in occupations is the salary. We have no picture here of the salary changes which these persons have experienced, but as a group their salaries probably reflect to some extent the efficiency of their preparation for the job. These data are presented in Table 65.

TABLE 65.—*Median weekly salary of persons who entered the different types of secondary schools in 1920 and 1925*

Type of school and curriculum	Boys		Girls	
	1920 (619)	1925 (1,298)	1920 (511)	1925 (1,017)
1	2	3	4	5
Comprehensive school:				
Academic curriculum	$35.71	$20.83	$25.75	$18.13
Commercial curriculum	38.25	21.67	25.21	18.69
Industrial arts curriculum	35.50	21.42		
Household arts curriculum				18.67
Other curriculums	34.00	21.67	25.23	17.94
General school:				
Academic curriculum	34.50	20.33	28.86	16.56
Commercial curriculum	34.50	18.69	25.93	16.56
Industrial arts curriculum	25.00	20.63		
Household arts curriculum			21.50	16.00
Other curriculums	35.69	20.91	25.68	16.13
Technical school:				
Academic curriculum	38.33	20.70		
Commercial curriculum			20.67	15.17
Industrial arts curriculum	39.00	22.29		
Household arts curriculum			17.00	14.83
Other curriculums	35.50	20.65	19.27	23.50
Commercial school	25.88	19.73	25.36	17.77
Trade school	31.50	22.31	18.13	18.63
All groups combined	35.17	20.83	25.33	16.95

NOTE.—The numbers in parentheses indicate the number of boys and girls reporting.

Although in some instances the number of cases is small, the trends are fairly clear. The median salary for boys in the 1920 group is about $35 per week. The highest salaries are obtained by those who attended technical schools followed closely by former pupils of comprehensive organizations. The boys in industrial arts in these two types of schools have achieved higher salaries than those who attended trade schools. The median for technical high school pupils of this type is slightly above the third quartile for trade schools. This may be due largely or entirely to selection of pupils. Over three-fourths of all these pupils earn less than $45 per week. They have been out of these schools about nine years on the average.

The median salary of girls is about $25 except for those who attended technical and trade schools, where it is a little less than $20. Seventy-five per cent of the girls earn $30.36 or less per week. The household arts students earn less than the others. Here, again, selection probably has affected the salary received.

The salaries of boys in the 1925 group are very uniform. The median for all is $20.83 and no curriculum or type of school varies much from this level. This median is about $15 less than the median for the 1920 group. Since they have been out of school 5 years longer, the 1920 group have gained, on the average, about $3 per week for each year. The seventy-fifth percentile for this group is $25.97 and the highest seventy-fifth percentile of any division is $30.15 for the trade-school students.

The median salary of the 1925 girls is $16.95 per week. The lowest median is that of girls in household arts and the highest that of girls in "other" courses, both groups being from technical high schools. The others are all fairly close to the median for the entire group. This median is about $9 less than that of the 1920 group and represents an increase of about $1.80 per week for each year longer out of school. This is about one-half the increase for the boys. The salaries of boys and girls in the 1925 group are very similar but those of the 1920 group have become more widely separated.

Degree of satisfaction with present position.—Satisfaction with one's work is an important index of vocational adjustment. A vocational training program aims to train and to place pupils in occupations in which they will succeed and in which they will be happy. Wide contrasts in the degree of satisfaction of pupils who have taken different lines of training would be significant in giving some indication of their relative effectiveness.

Former pupils of different types of schools reported whether they were (1) very much, (2) quite well, (3) only fairly well, (4) not so well, (5) not at all satisfied with their present positions. The first two responses, "very much" and "quite well," were considered as satisfactory and the figures presented in Table 66 are totals of the percentages of persons giving these two responses.

These comparisons do not show consistent differences between former pupils of different types of courses and schools. On the average, pupils who took the commercial curriculums report larger satisfaction in their work than the students who took the academic courses, except for the general high school, where the reactions of the two groups are about similar. There

is practically no difference between responses of boys who were enrolled in commercial and industrial arts curriculums. Large proportions of all groups indicate that they are well satisfied with their positions.

TABLE 66.—*Percentages of persons entering different types of schools in 1920 and 1925 who report satisfaction with their present positions*

Type of school and curriculum	Boys		Girls	
	1920 (743)	1925 (1,520)	1920 (594)	1925 (1,139)
1	2	3	4	5
Comprehensive school:				
Academic curriculum	62.7	42.3	76.9	69.9
Commercial curriculum	75.0	60.0	88.9	78.1
Industrial arts curriculum	60.4	61.3		
Household arts curriculum				76.5
Other curriculums	67.4	52.2	79.5	72.4
General school:				
Academic curriculum	62.5	51.3	86.2	74.0
Commercial curriculum	66.6	47.3	89.8	71.3
Industrial arts curriculum	55.5	68.8		
Household arts curriculum			100.0	62.5
Other curriculums	68.5	61.2	88.3	73.3
Technical school:				
Academic curriculum	63.1	52.2		
Commercial curriculum	66.2		100.0	76.1
Industrial arts curriculum	59.6	64.3		
Household arts curriculum			100.0	85.7
Other curriculums	59.6	56.7	88.2	68.6
Commercial school	68.4	55.2	83.2	75.5
Trade school	75.4	57.8	75.0	76.2
All groups combined	65.6	55.7	85.5	74.3

NOTE.—The numbers in parentheses indicate the number of boys and girls reporting.

More detailed analyses of these data, some not reported in Table 66, are justified. About two-thirds of the 1920 boys are "very much" or "quite well" satisfied, about 15 per cent are only fairly well satisfied, and 18 per cent reported that they were dissatisfied. Of the 1920 group of boys, the highest percentages among those well satisfied occur for commercial boys in comprehensive schools and boys from the trade schools, the latter percentage being 75.4 per cent. The largest proportions of 1920 boys reporting they were dissatisfied occur for the academic groups in general and technical schools. It may be that the academic pupils of these groups include those who took a college preparatory course because of the social approval which was given to it, or because of improper or inadequate guidance, and then find themselves without a liking for the positions they obtain without vocational preparation.

Among the girls of the 1920 group, about 85 per cent are well satisfied. The lowest percentages are found in the academic curriculum in comprehensive schools and in trade schools. The other groups are uniformly high. Only about 9 per cent of all girls reported "only fair" in their report of satisfaction with their positions and about 5 per cent reported definite dissatisfaction.

About 55 per cent of the 1925 boys are well satisfied; the highest proportions are those who had industrial arts in general, technical, and comprehensive schools. About 20 per cent reported "only fair" and about one-fourth are definitely dissatisfied with their positions. This is a contrast to the results for the boys in the 1920 group; it fits in well with what has been found in preceding tables regarding first jobs, occupational changes, etc.

The girls in the 1925 group present a similar contrast with those in 1920. About 75 per cent are well satisfied; about 12 per cent reported "only fair" satisfaction; and about 13 per cent reported that they were dissatisfied. Greatest satisfaction was reported by those in the commercial and household arts curriculums in comprehensive schools, commercial curriculums in technical and commercial schools, and by those who attended trade schools.

TABLE 67.—*Percentages of boys entering different types of schools in 1920 and 1925 who report plans to remain in their present line of work*

Type of school and curriculum	1920 (818 cases)			1925 (1,942 cases)		
	Yes	No	Not sure	Yes	No	Not sure
1	2	3	4	5	6	7
Comprehensive school:						
Academic curriculum	52.7	23.0	24.3	23.2	53.6	23.2
Commercial curriculum	64.3	17.9	17.9	36.2	19.1	44.7
Industrial arts curriculum	45.8	12.5	41.7	41.3	24.0	34.6
Other curriculums	56.3	14.6	29.1	29.7	43.0	27.3
General school:						
Academic curriculum	60.0	22.1	17.9	34.7	40.1	25.2
Commercial curriculum	50.0	10.0	40.0	44.2	21.2	34.6
Industrial arts curriculum	55.6	22.2	22.2	37.5	12.5	50.0
Other curriculums	59.3	16.5	24.2	37.2	34.6	28.2
Technical school:						
Academic curriculum	50.9	31.6	17.5	27.6	41.7	30.7
Industrial arts curriculum	52.5	19.7	27.9	35.2	29.6	35.2
Other curriculums	53.3	11.7	35.0	37.9	36.8	25.3
Commercial school	63.2	26.3	10.5	37.7	29.6	32.7
Trade school	53.4	19.0	27.6	45.7	26.8	27.4
All schools combined	55.1	18.7	26.2	37.1	33.0	29.9

Satisfaction with present occupation is further shown by plans to remain or not to remain in their present line of work. The data reported in Tables 67 and 68 show that large proportions of all groups of students would prefer some other line of work.

TABLE 68.—*Percentages of girls entering different types of schools in 1920 and 1925 who report plans to remain in their present line of work*

Type of school and curriculum	1920 (496 cases)			1925 (1,067 cases)		
	Yes	No	Not sure	Yes	No	Not sure
1	2	3	4	5	6	7
Comprehensive school:						
Academic curriculum	54.5	18.2	27.3	45.6	35.6	19.8
Commercial curriculum	64.8	9.2	25.9	57.9	16.4	25.6
Household arts curriculum	.....	.....	.....	50.0	25.0	25.0
Other curriculums	67.5	16.9	15.6	50.5	20.9	28.6
General school:						
Academic curriculum	65.0	18.4	16.5	60.6	17.2	22.2
Commercial curriculum	74.4	5.1	20.5	56.9	12.2	30.9
Household arts curriculum	100.0	.....	.....	37.5	25.0	37.5
Other curriculums	72.3	13.8	13.8	53.1	21.4	25.5
Technical school:						
Commercial curriculum	53.3	20.0	26.7	48.4	21.0	30.6
Household arts curriculum	66.7	16.7	16.7	41.7	25.0	33.3
Other curriculums	48.0	16.0	36.0	48.0	26.0	26.0
Commercial school	69.0	8.6	22.4	58.9	16.8	24.3
Trade school	52.9	11.8	35.3	60.2	12.0	27.7
All schools combined	65.5	13.9	20.6	55.1	18.6	26.2

About half of the boys entering in 1920 have found the work they like, about one-fifth have not, and about one-fourth are uncertain. The highest proportions who plan to stay in their present line of work are those who had commercial training in comprehensive and commercial high schools. The highest proportions planning to change took academic work in technical schools. The highest percentages who are uncertain followed industrial arts in comprehensive schools and commercial work in general schools.

Of the girls in the 1920 group, about two-thirds plan to continue in their present line of work, about one-seventh plan to change, and about one-fifth are not certain. The highest proportions of those planning to continue are among those who took commercial and household arts training in general high schools. The girls who took commercial work in technical high schools plan most frequently to change. The

greatest proportions who are uncertain are among those who took "other" curriculums in technical schools and those who attended trade schools.

In the group of boys who were in the 1925 group, about one-third are in each of the three categories. The highest percentages planning to continue in their present line of work are among those who had industrial arts in comprehensive and in trade schools and among the commercial students in general high schools. The highest proportions planning to change are among those who followed the academic curriculum in comprehensive, general, and technical high schools and those who followed the "other" curriculums in comprehensive high schools. The largest proportions who are uncertain followed the commercial curriculum in comprehensive schools and the industrial arts curriculum in general schools. The contrast between the 1925 and the 1920 groups is again quite marked here. Much larger proportions of the 1920 group than of the 1925 group, as would be expected seem to have found the work they prefer.

Among the girls in the 1925 group, more than one-half plan to continue in the present line of work, about one-fifth plan to change, and about one-fourth are uncertain. These results agree closely with those for boys in the 1920 group. The results for the various curriculums are rather consistent, although there are some differences between the groups. The percentage planning to continue in their present line of work is slightly higher for the academic group in general schools and the group from trade schools. A rather high percentage of those who took academic work in comprehensive high schools plan to change, and the highest proportions who are uncertain are among those who took household arts in general and technical schools.

3. INTENSIVE ANALYSIS OF THE VOCATIONAL ACTIVITIES OF 2,663 FORMER PUPILS

General scope of study.—In order to study more carefully the relationship of vocational training received in secondary schools to success in occupations, a more detailed analysis was made of certain types of data obtained in the follow-up

study. This analysis consisted essentially of tabulation of the vocational training, the occupational histories, and related information for a number of the persons who filled out and returned the check list. These tabulations had to be done by hand and required considerable time and labor. Consequently only a limited number could be completed. It was therefore necessary to select schools or city systems which were believed to be representative of the different types of organization under consideration. The limited scope of this section should be recognized by the reader. It is distinctly not a national investigation but a canvass of certain of the schools included in this part of the Survey.

Twelve secondary schools in five cities were selected for this part of the study. In three of the cities the comprehensive type of organization predominates; in one, there are several general high schools and one highly specialized school; in the fifth city the schools are all distinctly specialized with the exception of one, whose chief though not exclusive function is preparation for college.

The 12 schools classified as to type are as follows: Comprehensive, 3; general, 5; technical, 1; commercial, 1; trade, 2. It will be seen that there is included at least one of each of the common types.

From former students of these schools, 2,663 returns were received of 6,319 sent out. This is a return of 42.1 per cent and, allowing for those not reached because of wrong or insufficient address and those returns that were not usable, corresponds to the figures given in the preceding section for all schools approached. There is no indication that these cities differed from the others so far as selection of returns is concerned. One of the two schools from which the returns represented a particularly selected population with respect to average scholarship, as mentioned in the first section of this chapter, is included in this group. The other one of this type mentioned is not. The five cities were not chosen on any other basis than the one already stated and the returns of the schools in these cities are probably typical of all the follow-up returns. They include about one third of the follow-up study in number of cities, schools, pupils approached, and returns.

The data on numbers of check lists sent out and numbers returned in each group or type of school are presented in Table 69. The largest returns are in the first two groups because there are more schools in these groups and because the schools are larger. The percentage of forms returned is larger for the 1925 than for the 1920 pupils.

TABLE 69.—*Number of forms sent to former pupils of different types of schools and the number of responses*

Type of school	1920		1925	
	Number of forms sent	Number of forms received	Number of forms sent	Number of forms received
1	2	3	4	5
Comprehensive	1,057	364	1,432	546
General	765	268	1,213	669
Technical	200	96	205	168
Commercial	210	75	281	187
Trade	370	85	586	205
Total	2,602	888	3,717	1,775
Percentage number returned is of number sent	----------	34.1	----------	47.8

Amount of further training.—From the total return of 2,663 check lists certain ones were eliminated. The largest single group eliminated were those who went to college or university, and those who attended college preparatory, normal, home economics, or agricultural schools above the secondary level. In addition, all those who had never had a job for pay since leaving high or trade school and all those returns which were not usable were eliminated. This left 1,496 returns from students who had either had no further training of any sort since leaving secondary school or who had taken such training on the secondary level as postgraduate work in high school, or in business, trade, continuation, or evening schools. The proportion of this group of 1,496 who had no further training or who had further training on the secondary level as indicated are shown in Table 70. Although results for 1920 and 1925 are not presented separately they were calculated and the proportions in the various categories for the two classes are almost identical.

TABLE 70.—*Numbers and percentages of former pupils who report no training or different types of training after leaving high school*

[Those who went to college are not included here]

Curriculum and school groups	Number with no further training		Training directly after leaving high school		Training after going to work		Number with both types of training		Total number reporting
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent	
1	2	3	4	5	6	7	8	9	10
GENERAL GROUP									
Central High School, Bridgeport, Conn.	38	39.6	11	11.5	40	41.7	7	7.3	96
Warren Harding High School, Bridgeport, Conn.	56	45.9	7	5.7	51	41.8	8	6.6	122
Central High School, Springfield, Mass.	12	18.5	10	15.4	34	52.3	9	13.8	65
R. J. Reynolds High School, Winston-Salem, N.C.	71	88.8	5	6.3	4	5.0	.....	.....	80
Shortridge High School, Indianapolis, Ind.	16	40.0	9	22.5	14	35.0	1	2.5	40
Total for general group	193	47.9	42	10.4	143	35.5	25	6.2	403
COMPREHENSIVE GROUP									
Arsenal Technical High School, Indianapolis, Ind.	102	52.0	13	6.6	73	37.2	8	4.1	196
Emmerich Manual Training High School, Indianapolis, Ind.	83	58.9	9	6.4	46	32.6	3	2.1	141
Joliet Township High School, Joliet, Ill.	88	49.2	7	3.9	78	43.6	6	3.4	179
Total for comprehensive group	273	52.9	29	5.6	197	38.2	17	3.3	516
TRADE GROUP									
Bridgeport State Trade School, Bridgeport, Conn.	72	61.0	.....	.....	44	37.3	2	1.7	118
Trade School, Springfield, Mass.	64	53.8	.....	.....	55	46.2	.....	.....	119
Total for trade group	136	57.4	.....	.....	99	41.8	2	.8	237
TECHNICAL GROUP									
Technical High School, Springfield, Mass.	69	46.6	4	2.7	70	47.3	5	3.4	148
COMMERCIAL GROUP									
Commercial High School, Springfield, Mass.	94	49.0	3	1.6	89	46.4	6	3.1	192
Grand total	765	51.1	78	5.2	598	40.0	55	3.7	1,496

It may be seen that more than half secured no further school training of any sort; about 5 per cent continued full-time training on the secondary level after leaving the particular school from which their records for the present study were obtained; 40 per cent continued secondary education on a part-time basis after beginning work; and 3.7 per cent

took some full-time and some part-time training of this type. The group with which the analyses of occupational histories are concerned is the first mentioned, namely, those whose sole training for vocations was obtained in one of the 12 schools of the five cities included in this part of the study. There is one type of exception to this. A student may have attended some other school in which he received vocational training before entering one of the 12. The greatest number of transfers were found in the trade schools where a small number had had some high-school training before transferring to trade school. It is not likely that the time spent in high school had much vocational value because these transfers seldom stayed there more than a year and the proportion who attended at all is not very large. Although no definite data on this factor in the situation are available, it is improbable that it complicates or affects the results to any appreciable extent. Most cases are not transfers and most of those that are transfers have made the change in order to obtain, in some other school, the type of training they could not get in the school previously attended. Also, data presented in an earlier chapter on transfer of students show that most students in trade schools have not gone beyond the eighth grade.

Proportion of former pupils entering occupations for which they were trained in the secondary school.—It is common knowledge that not all pupils enter the occupations for which they receive training when in the secondary school. Since much of the vocational training is specific in its applications, time spent by pupils in acquiring skills and understandings needed in some occupations may represent largely a waste of time for them if they do not use the training in the occupation to which it is related. Many factors may contribute to failure of pupils to continue in the occupation for which they receive training. They may lose interest in it; they may find that they do not have ability to succeed in it; they may not be able to secure a placement in it and thereby be diverted to some other line of work. Whatever the cause of failure to use directly the vocational training received in the secondary school, careful students of secondary education will be vitally interested in such data.

Pupils may be included in this study though even they have continued their education after leaving the secondary school. The chief concern here is whether they continued in the same field of work. If pupils secured additional training before entering the occupation, the training obtained in the high school provided the foundation for more advanced training. Such pupils would not be considered to have used the high-school training, however, unless they later entered the occupation. Consequently, a comparison of the occupations followed after leaving school and the courses taken in school will show the extent to which former pupils have made direct use of training received in secondary schools.

Proportion of commercial pupils entering commercial occupations.—Difficulty was experienced in relating commercial training to particular jobs in the commercial field. Many of the commercial subjects are directly helpful in a number of types of work and the titles of commercial positions do not define the limits of the duties of the persons filling the positions. The clerk may do some typing and in some cases he may do some stenographic work. Consequently, it was decided to consider entry into any commercial position as satisfactory for indicating use of commercial training. The number of units of training to be reported included the units earned in all commercial subjects. Pupils were not included in the study unless they had at least one unit of credit in commercial subjects. Some of the commercial courses may not have been used, but there can be no doubt that some of the training was of value to the pupil in the commercial position which he held. The nature of the data given by these former pupils did not make it possible to differentiate between sales positions and clerical positions since both types of functions are carried by some workers and the title "clerk" is used to refer to both types of work.

A very large proportion of the commercial pupils have been employed in a commercial occupation for at least part of the time since they left high school. (See upper half of Figure 9.) As many as 84.2 per cent of the 597 former pupils here canvassed were so employed. The proportion is even higher, 90.1 per cent, for the small group who entered high

than one field, and entered one of the fields, he was credited with having entered an occupation trained for with indication of the number of units of training he had for the field he entered. If he entered none of the fields for which he had training, he was entered as not having entered the field in which he had the largest number of units of training. It seemed better not to enter an individual more than once. To have entered the pupil with training for three occupations three times, one occupation entered and two not entered, would necessarily have lowered the extent of use of the training. One can hardly expect a pupil to follow all three occupations if he happens to have trained for three; it was considered satisfactory here if he entered one of the occupations for which he had trained.

The proportion of the industrial pupils entering the occupation for which they trained in secondary schools is lower than those just reported for the commercial pupils. (See Figure 9.) The percentage for the total group of 470 pupils is 45.3. There is little difference between the proportions for the 1920 and the 1925 groups. There is also not a large difference for the pupils with different amounts of industrial training. The contrasts for groups with different amounts of training are larger for the comprehensive and trade schools. A small proportion of the technical pupils entered the occupation trained for, and those with most training entered in smaller proportions. About half of the pupils from the comprehensive schools with one or more units entered the occupation trained for but only a third of those with less training did so.

Large differences are noted between the different types of schools. The percentages are much higher for the trade than for the other types of schools. While the percentage is as high as 75 for the trade schools, it is only 39.3 for the comprehensive school, 25.7 for the general school, and 23 for the technical school. The differences between schools are large both for the groups with a considerable amount of training and for the groups with a small amount of training. Reference to Figure 9 will show larger variation among schools for the industrial than for the commercial field. In the proportion of pupils who enter the occupation field after leaving school the trade school excels the other types of schools more

than the commercial school excels the other schools in commercial training. The data for the trade schools are almost as favorable as the data for the different schools for commercial training.

It should be recognized that some pupils in the general and comprehensive schools take shop courses without intent of using them vocationally. All pupils who had as much as one unit of training were included regardless of whether or not they planned at the time to enter industrial occupations. These data show the extent these pupils actually did use the training vocationally. The reader should be cautioned against excessive generalization from the limited data presented from a small number of schools. It should be indicated, however, that the data reported for trade schools are in harmony with a more extensive canvass of students in trade courses by agents of the Federal Board for Vocational Education. The data secured from a 4-year canvass of 13 States of the Northeastern region showed that 69.9 per cent of the graduates of trade schools entered the occupations for which they received training.

Proportion of pupils in household arts courses entering occupations related to household arts.—Very small proportions of the pupils who took household arts courses in secondary schools entered occupations in which such training would be directly helpful. Of 125 such pupils in comprehensive schools, only 15 entered an occupation in which such training would be serviceable. The percentage is only 10.3 for the general high schools and 8.8 for the technical school. Most of these pupils took less than three units, but those who took larger amounts of training did not enter related occupations in larger proportions. It will be admitted by many that this training has its chief justification in its contributions to homemaking and not in the preparation for remunerative occupations. In reporting the foregoing data there is no intention to discredit the program in household arts by calling attention to the small extent of its use vocationally. Neither is it intended to suggest that larger stress should be given to the vocational aspects. An attempt has been made to canvass the extent to which courses of various types with vocational possibilities are used vocationally. It is sufficient here to

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point out that few of the pupils who enrolled in household arts courses made use of it in an occupation which they entered after leaving school.

Proportion of pupils in fine arts courses entering occupations related to fine arts.—The proportion of pupils enrolled in fine arts courses in secondary schools entering occupations related to fine arts after leaving school is about the same as that for household arts. About a tenth of the 112 pupils responding to the inquiry form reported having spent some time in an occupation in which the courses in the fine arts would have been serviceable. As for the household arts, the courses in fine arts have their justification on bases other than the vocational. That is, pupils take these courses because of their interest in such work or because they desire to improve their appreciation of form, color, etc. A few of them, however, do find such training helpful vocationally.

Percentage of time spent in occupations for which training was secured.—It should not be assumed that the pupils entering the occupation for which they secured training have spent all their time since leaving school in that occupation. Some of them have spent only a small fraction of the time in it, having spent most of the time in some other occupation. On the average, however, former pupils who entered the occupation for which they received training have spent a large fraction of their time in that occupation.

Proportion of former pupils employed at the time of the investigation in an occupation for which they were trained in the secondary school.—The foregoing discussion has been concerned with the proportion of former pupils who spent some of the time since they left school in an occupation for which they were trained when in the secondary school. An analysis of the postschool careers of 92 pupils who entered industrial occupations for which they were trained in the secondary schools showed that, on the average, they spent 70.7 per cent of the time since they left school in an occupation for which they were trained. Some of them spent all the time since they left school in an occupation trained for and others who entered an occupation trained for spent only a small fraction of their time in it.

The proportions of the former pupils who were at the time of this investigation employed in an occupation for which they received training in the secondary school are reported in Figure 10. These percentages are lower than those reported in Figure 9, but the differences are not so large as might be expected. Seventy-seven per cent of the former 597 commercial pupils were employed in commercial positions

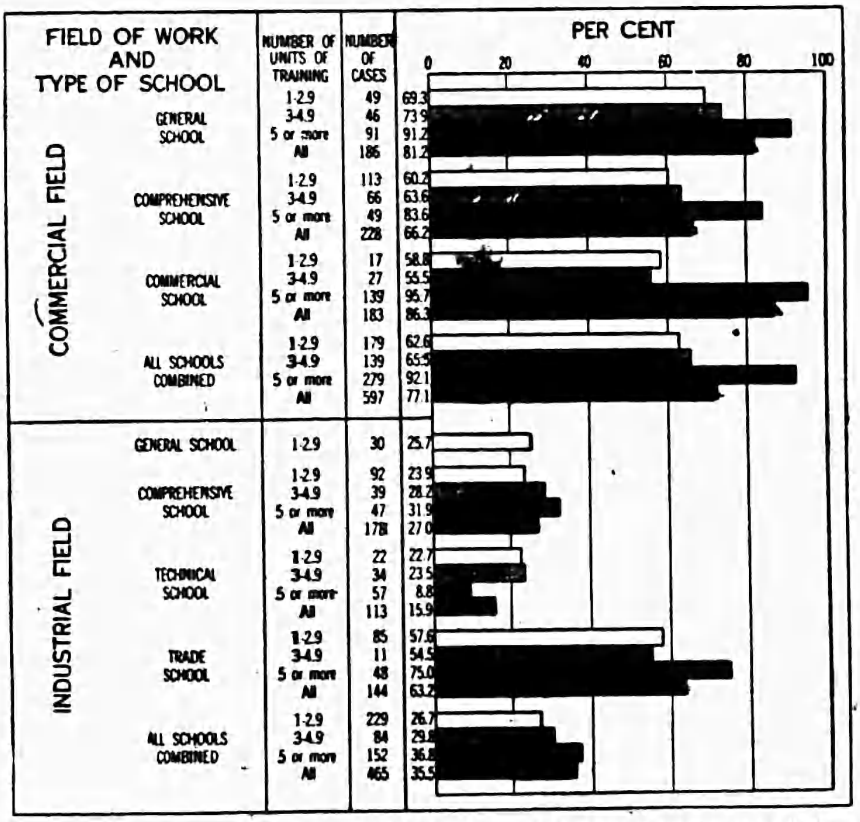

FIGURE 10.— Percentages of former pupils in the commercial and industrial arts curriculums in various schools employed, at the time of this investigation, in the occupations for which they were trained

and 35.5 per cent of the 465 former industrial pupils were employed at the type of industrial work for which they were trained. The percentages for the different types of schools bear about the same relationships to each other as in Figure 9. There is not a great difference between the different types of schools for the commercial pupils; for the industrial pupils, the percentages for the trade-school group are much higher than those for the industrial pupils in other types of schools.

4. GENERALIZATIONS SUPPORTED BY FOLLOW-UP DATA

Selective nature of data.—The data presented in this chapter can not be considered to be applicable to all secondary schools. The cities included in this study were chosen because of the excellence of their vocational programs as judged by the staff of the State departments of education. They can probably be characterized as being among the schools maintaining more successful programs of vocational education in schools of the various types. Also, data presented in Section 1 of this chapter showed that the persons who returned the follow-up inquiry forms were somewhat more competent in their school work than those for whom data were not obtained. Consequently, the data probably depict a more favorable situation than would be found in schools with less well-developed programs or would have been disclosed if complete data could have been obtained.

Reasons for leaving school.—The most common reason reported for leaving school prior to graduation is an economic one. Need of help in supporting the family, need of help with the work at home, or desire to be earning money are reasons checked more frequently than all others combined. The next most common reason is lack of interest in school work. The schools have it in their power to do something about developing a program which has a strong appeal to students. Correction for the interference of the economic factor in the education of young people has not been generally accepted as a responsibility of the school. However, equalization of opportunity for education can not be said to exist so long as large numbers are deprived of the opportunity for a secondary education because of the economic status of their parents.

Educational activities after leaving full-time secondary school.—Approximately a third of the girls and a half of the boys go directly to work after leaving the full-time secondary school. A majority of those leaving early continue their education on a part-time basis while working, and a few go back to school for further full-time training. Approximately 40 per cent continued their education on a full-time basis after leaving secondary schools. About half of these went

to a college or university. Until the time they returned the check lists, only about a fifth failed to continue their education in some way after leaving the secondary schools. The full-time secondary school closes the formal education of only a small proportion of the pupils.

The first positions held after leaving full-time secondary school.—The first positions are most frequently obtained through personal search or through friends. Less than a sixth of the girls and a tenth of the boys secured their first jobs through teachers or placement bureau of the school last attended. The former pupils were not conscious of help from the school in getting started in an occupation. For the most part, the first job which is located is accepted. The girls more frequently indicated that they had special training for the first positions they filled.

Number of positions held since leaving full-time secondary school.—The number of different positions held by former pupils since leaving school is in most cases three or less. There is very little difference between the 1920 and the 1925 groups in this respect, the median number of positions for both groups being between two and three. It would appear, that most of the shifts take place during the first few years of employment.

Salary at time of investigation.—Considerable variation is noted in the salaries of the different groups. The salaries of boys are higher than those for girls and the salaries of the 1920 group are higher than those for the 1925 group. The approximate median salary for boys in the 1920 group is $35 per week; for girls it is $25 per week; for boys in the 1925 group it is $20 per week; for girls it is $18 per week.

Satisfaction with present position.—A large proportion of all groups reported satisfaction with their present positions. The reports of girls are more favorable than those of boys. Also, pupils of the 1920 group report satisfaction in larger proportions than the 1925 group. The percentage reporting satisfaction varies somewhat among the different groups, although the percentages are high for all groups.

Relationship of training in commercial and industrial fields to kind of occupation entered.—A large proportion of the 597

commercial pupils from nine schools later enter commercial positions. This percentage is high even for the pupils with a small amount of commercial training. That these pupils tend to remain in commercial work is evidenced by the large percentage engaged in such work at the time the data were obtained. A much more extended canvass is needed to furnish the basis for generalization, but these data suggest large use of training.

The proportion of 470 industrial pupils from six schools entering the industrial field for which they were trained is not so large as for the commercial pupils. The percentage for the trade schools approaches the percentages for the commercial pupils. The differences between the percentages for pupils with the different forms of training might be accounted for in part by the fact that the industrial training was related to the field of work trained for and the commercial pupils were considered to have entered the occupation trained for if they entered any type of commercial position. The difference might be explained in part, also, by the greater tendency to consider the shop courses as part of general education. Thus, some pupils enroll in industrial courses without any intent of using such training vocationally. It should be noted, however, that a considerable proportion of the pupils in general schools who took industrial courses later engaged in industrial occupations, despite the fact that these courses were considered not to be vocational in nature. The general agreement of this limited canvass with other more extended studies has been noted.

Differences among types of schools in proportion of former pupils entering occupations related to the training received.— The proportion of former pupils in commercial courses who later entered an occupation related to those courses did not vary significantly with type of school. Those who attended the specialized commercial school entered a commercial occupation in larger proportions than is true for the other schools, but the differences are slight.

Larger contrasts between types of schools are noted for the industrial field. The percentage entering the occupation for which training was secured is considerably larger for the trade

school than for the other types of institutions. The percentage is smallest for the technical school. While about a third of the pupils in industrial courses in the comprehensive schools later entered the occupations for which they secured training, the percentage for the trade school is 75. Many of the pupils in general and comprehensive schools enrolled in industrial courses without intention of using the training for vocational purposes. Consequently, the percentage actually using the training vocationally would naturally be smaller. However, it is significant to note that a considerable proportion of the members of all groups, even though they did not obtain extended training, entered the occupations for which they had been trained while in school.

CHAPTER IX. CORRESPONDENCE COURSES IN PUBLIC SECONDARY SCHOOLS

I. AN EXTENSION OF THE OFFERING TO SERVE INDIVIDUAL NEEDS

Only a small number of pupils desire certain subjects.—It is not possible to recognize the interests and needs of all pupils because not infrequently only a small number, in some cases only one, desire a certain line of training. Such a condition is especially existent in the small schools where the regular offering of the school is necessarily limited and the number of pupils desiring the various types of training is small. Because of the smaller number of pupils, the number with a desire for any one course is frequently too small to justify the employment of a specialist and the provision of necessary equipment. Even in the larger schools, these special interests are often ignored because the number of pupils with such interests is not large enough to justify providing for them.

Great variety of courses available by correspondence.—The great demand for training in almost every vocational and academic field by persons who have left school has led to the development of private correspondence schools and correspondence departments in the extension divisions of colleges and universities. The total offering of the most comprehensive of the secondary schools is made available by these agencies, and many forms of vocational training not available in secondary schools can be obtained. If all the agencies offering correspondence courses could be drawn upon, practically every line of study desired could be provided.

Correspondence courses used extensively in other countries.—Correspondence courses have been used more widely in certain other countries, notably Canada and Australia, than in the United States. The departments of education in certain Canadian provinces, especially Ontario and British Columbia, have developed an extensive series of courses in high-school subjects which are made available to boys and girls in all parts of these provinces. These lessons are sent directly to the pupil and returned by him to the Department of Education for correction. This service is well organized

and is used by thousands of persons every year. The International Federation of Home and School in a press release under date of December, 1931, quotes as follows from the Ontario (Canada) Home and School Review:

> By the correspondence courses provided by the Ontario Department of Education, over 12,000 children were taught during 1930–31. The courses are provided for isolated rural districts where schools are not available; complete sets of lessons are carefully prepared for each grade. These courses are for persons of school age who live remote from any school; for those who can not attend school in winter by reason of road conditions or school being closed; and for those who are physically unable to attend school and for whom no other means of education can be provided.

2. EXTENT OF USE IN THE UNITED STATES

Source of list of schools with correspondence study.—A systematic attempt was made in connection with the National Survey of Secondary Education to locate all schools using the correspondence type of instruction. Names of schools were obtained from State departments of education, and private correspondence schools generously provided lists of schools now using their courses or which formerly used them. In addition, a request was presented through the columns of the *Journal of the National Education Association* for schools with correspondence study to communicate with the United States Office of Education. By these methods, the names of 183 schools were obtained. A check list was sent to all these schools. Ninety-six replies were received, and of these only 42 stated that they now use correspondence courses, and 4 stated that they had used them in the past. It is probably reasonable to infer that most of the 87 schools that did not return the questionnaire do not use correspondence courses.

The 46 schools reporting use of correspondence courses are distributed to 16 States. Nebraska, the only State in which the practice is at all widespread, has 16 of the schools. In that State, correspondence study has received generous encouragement by the University of Nebraska and the State department of education as a means of extending the offering of the large number of small high schools in the State. Six of the schools reporting are located in Michigan, 5 in Massachusetts, 4 in Wisconsin, 2 each in Illinois, Kansas, and

Pennsylvania, and 1 each in Indiana, Iowa, Minnesota, Mississippi, Missouri, Montana, Washington, West Virginia, and Wyoming.

Types of schools with correspondence courses.—The correspondence courses have been adopted most frequently by small schools. The median enrollment of the group of schools is 200, 36.5 per cent have enrollments of fewer than 300 pupils, and 86.9 per cent have enrollments of fewer than 900. Only four of the schools have enrollments more than 1,000.

Since most of the small schools are general or comprehensive in nature, it is to be expected that schools of this type would have most of the correspondence study. Forty of the 46 schools are either general or comprehensive. Of the remainder, 3 are vocational, 1 is agricultural, 1 is a continuation school, and 1 an evening school.

Subjects offered by correspondence.—Many of the subjects offered in the secondary school are provided by correspondence in one or more of the 46 schools included in this report of practice. The subjects appearing in four or more schools are listed in Table 71. Mathematics and English have the highest frequencies. The only other nonvocational subject, United States history, appeared in only four schools. The other subjects are vocational subjects frequently offered in secondary schools. They include commercial, shop, and agricultural subjects. Among other courses, offered in fewer schools than the subjects presented in the table, are typewriting, commercial law, civil service, mail clerk, Latin, French, civics, natural science, surveying, tool making, and watch and clock repair. Many other subjects appear in a single school only.

TABLE 71.—*Numbers of schools offering various subjects by correspondence*

Subject	Number of schools	Subject	Number of schools
Mathematics (arithmetic, algebra, and geometry	15	Drafting and mechanical drawing	8
English and journalism	14	Bookkeeping and accounting	8
Electricity and electrical engineering	12	Agriculture	7
Automobile mechanics	9	Aviation and airplane engines	6
Commercial art and drawing	9	Salesmanship	5
		Shorthand	4
		United States history	4

Enrollment in correspondence courses.—The number of pupils in a school enrolled in correspondence courses varies greatly. The number is as low as 1 in some schools; the highest number for the schools here canvassed was 70. The median was 2.9. These small enrollments indicate that in most schools correspondence courses are being used to provide for an occasional pupil who has a strong desire or need for a course that can not be provided in the regular way.

3. THE ADMINISTRATION OF CORRESPONDENCE STUDY

Number of courses permitted at any one time.—The procedures followed in the use of correspondence courses have been listed in Table 72 with the number of schools reporting the use of each. The totals for any one practice do not always equal 46 because some of the respondents failed to furnish information on some of the items. The relative frequency for the various practices will show the relative extent of their use.

Reference has already been made to the use of correspondence courses to supplement the regular offering of the school. In many of the schools, pupils are permitted to enroll in only one course at a time. Others permit two or more than two courses and no limits have been set in some of the schools. Certain correspondence courses carry with them a group of subjects which together constitute training for some occupation. Other courses, especially those of an academic nature, comprehend only a field of study so that a pupil might enroll in several courses at one time. These schools continue to consider the regular class work as the core of the program of the school with the correspondence courses used to supplement it when the needs of some pupil are not adequately served by the regular offering.

TABLE 72.—*Numbers of schools which follow various administrative practices in offering correspondence courses*

Practice	Number of schools
A. Number of courses permitted at any one time:	
1. One	24
2. Two	9
3. Three	1
4. Four	1
5. No limit	1
6. No definite ruling	5

TABLE 72.—*Numbers of schools which follow various administrative practices in offering correspondence courses*—Continued

Practice	Number of schools
B. Number of units allowed towards graduation:	
1. One unit	6
2. Two units	9
3. Four units	7
4. No limit set or no reply to question	22
5. Exceptional cases full requirement allowed	5
C. Place of study:	
1. Home	20
2. Study hall	17
3. Classroom of related subject teacher	14
4. School library	5
5. Separate correspondence-study department	4
D. Arrangement for time for study:	
1. Time set aside during school hours	37
2. One period per day per course assigned	11
3. Half hour per day per course assigned	3
4. Two periods per day per course	10
E. Bases of credits and marks:	
1. Examination given by local school	4
2. Examination given by correspondence school	32
3. Examination by local and correspondence school	2
F. Title of person responsible for supervision of correspondence study:	
1. Superintendent of schools	6
2. Principal of school	6
3. Head of department	6
4. Instructor	10
5. Director of correspondence study	2
6. Combination of persons	6
G. Participation of local staff in handling correspondence lessons:	
1. Supervisors work individually with pupils	36
2. Supervisors assist pupils when they encounter difficulties	37
3. Completed lessons corrected by local staff	9
4. Completed lessons returned to correspondence school without attention from local staff	36
H. Financing correspondence courses:	
1. Tuition paid by board of education	22
2. Tuition paid by pupils	18
3. Textbook and supplies paid for by board of education	17
4. Textbook and supplies paid for by pupils	21
5. Whole course paid for in advance	18
6. Payments made as units are completed	7
7. Payments made monthly for units completed	8

Number of units allowed towards graduation.—That much caution is being exercised in introducing correspondence study is shown by the regulation in some schools limiting the number of correspondence units allowed towards graduation from high school. (Table 72, Item B.) Six schools allow only one unit. Others set the limit at two and at four units. The number reporting some limit is the same as the number reporting no limit or failing to report. This failure to report probably indicates that no limit has been set. As many as five schools report that in exceptional cases, all work might be taken by correspondence. Reference is here made to pupils who for reasons of health or for other reasons are unable to attend school.

Place and time of study of correspondence courses.—The study of correspondence courses is carried on in much the same way as study of the regular courses. Some of the study is done at home and some is done at school. The two dominant school locations are the study hall and the classroom of teacher of related subject. Only four of the schools report a separate correspondence-study department. Such arrangements are naturally not made unless a considerable number of pupils are participating in such a program of training. An effort is made in most schools to have pupils plan their programs of study. As many as 37 of the schools report that time is set aside during the regular school day for such study. Schools vary in the amount of time pupils are asked to give to this work. More significant than the amount of time is the requirement that pupils systematically give attention to these courses and that there is some supervision given to their work.

Bases of credit for correspondence study.—The assignment of marks and credits for correspondence work is somewhat complicated by the fact that the papers are marked by persons not connected with the local school. In only nine schools is there indication that members of the local staff participate in the correction of lessons. Most of the schools report that the completed lessons are returned to the correspondence school without attention from the local staff. (See Table 72, Item G.) Examinations are prepared and scored almost exclusively by the staff of the correspondence

school. In two schools, report is made that examination is given both by the correspondence school and by the staff of the local school.

Supervision of correspondence study.—Correspondence courses are supervised by a variety of functionaries in the school. In the small communities, they are sometimes supervised by the superintendents of schools. It should be stated, however, that in these smaller communities the superintendents carry many of the functions that fall to the principals in the larger schools. These courses are most frequently handled by some member of the staff of the high school. This person may be the principal, the head of the department related to the course taken by the pupil, or an instructor. In two schools a director of correspondence study is reported. As is true for the handling of other functions of the school, it is not unusual to find a combination of persons responsible for the supervision of correspondence study.

The supervision of correspondence study may need to be somewhat different from the supervised study in connection with the regular class work. In the regular class work, the teacher directing the supervised study is a specialist in the field being studied and has defined the problems which pupils are studying. In correspondence work, the person in charge may not know much about the field of study. However, schools report that persons supervising this study often work individually with pupils and that they assist them when they encounter difficulties. Such assistance could be given very easily when the course is within the scope of preparation of some member of the staff of the school, as is true when the correspondence work is an advanced course with few pupils electing it and the elementary course in the same field is offered in the regular program of the school.

Financing correspondence courses.—It is not unusual for new developments in education to be financed by private philanthropy or by the recipients of the training which is provided. The cost of the correspondence courses is not infrequently carried by the pupil. (Table 72, Item H.) In a still larger number of schools, the pupils carry the cost of textbooks and supplies. However, in as many as 22 of the

schools, the tuition is paid by the board of education, while the board of education provides the textbooks and supplies in 17 of the schools.

That large proportions of correspondence students never finish the correspondence courses which they begin is common knowledge. However, persons taking correspondence courses are usually compelled to pay the fee for the complete course at the time of registration and they consequently receive only part of the service for which they have contracted. Some of the plans for the use of correspondence study in public schools have modified this arrangement so that only the portions completed are paid for. However, as many as 18 of the schools report that the tuition is paid in full in advance. Other schools pay for units as they are completed, and in some cases monthly bills are submitted for the units completed during the month. While the exercising of care in the approval of pupil registrations in correspondence courses and the supervision of their study will doubtless reduce the percentage not completing the courses, a plan of financing which pays only for the service rendered or for the sections completed would seem to be the better policy for public schools.

TABLE 73.—*Per capita cost of instruction under regular class teaching and correspondence study in the Benton Harbor (Mich.) high school* [1]

Subject	Per capita cost [2]	Subject	Per capita cost [2]
Agriculture	$37.50	Music	$14.55
Mechanical drawing	23.40	Woodworking	14.45
Pattern making	21.23	Latin	13.62
Home economics	21.07	Biology	13.56
Mathematics	20.50	Shorthand	13.43
French	18.47	Commercial geography	12.73
Physics	18.23	Commercial law	12.07
Chemistry	18.22	English	11.92
History	16.17	Economics	11.40
Bookkeeping	15.67	Sociology	10.70
Spanish	15.56	Art	10.05
German	14.73	Hygiene	9.89
CORRESPONDENCE STUDY	14.68	Typewriting	8.10
		Physical training	7.09

[1] From an unpublished study by Sidney C. Mitchell, Supt. of Schools, Benton Harbor, Mich.

[2] Per capita cost of instruction is secured by dividing the teacher's salary plus additional instructional expense by the product of the number of periods of work per day and the enrollment in the class or group.

The cost of instruction by correspondence is reported to be not greater than for the regular instruction in the different subjects of the high-school offering. Superintendent Mitchell of Benton Harbor, Mich., compared the per capita cost of instruction in 26 subjects with the cost of the correspondence courses. He calculated the per capita cost by dividing salary and other costs of instruction by the number of pupil-periods of instruction per week. The costs for the various subjects and for correspondence instruction are given in Table 73. It will be noted that the cost of correspondence instruction is near the median for regular subjects.

4. THE EFFECTIVENESS OF CORRESPONDENCE COURSES

Objective measures not yet available.—The attempt to use correspondence courses to supplement the regular program of the secondary school is so recent that no attempts at measuring their effectiveness objectively have yet been reported. The program has been developed sufficiently in some sections to make such evaluation possible. Such a study is now under way in Nebraska. Achievement of pupils in correspondence courses can be compared with that for pupils who take the same courses under conditions of regular class instruction.

Judgments of effectiveness.—It was possible here to obtain only judgments of persons who have had experience with correspondence courses concerning their effectiveness. (See Table 74.) As many as 36 of the respondents expressed the belief that the results they have obtained warrant trial of such courses by other schools. Only three responses were negative. Most of the respondents are well enough satisfied with the results to plan to continue the programs in the future and some plan to extend the programs. Six of the respondents indicated that they will discontinue the work in the future. The consensus is that opposition is not developed toward these courses and that the achievement in such courses compares favorably with achievement in the regular courses. In fact, a small number, seven, report a belief that the achievement is better. Colleges have generally accepted the credits earned for admission and most schools have not experienced difficulty in getting pupils to enroll in correspondence courses.

A small number of schools make a negative report on each of the items mentioned; that achievement is less, that colleges are unwilling to accept credits, and that pupils avoid the courses. However, the reaction is largely favorable to the attempts that have been made in these 46 schools to extend the offering of the schools and to serve better the needs of individual pupils by means of correspondence instruction.

TABLE 74.—*Number of respondents giving various responses regarding the effectiveness of correspondence study*

Reaction	Number of respondents
1. Results obtained warrant trial by others	36
2. Results obtained do not warrant trial by others	3
3. Uncertain whether results warrant trial by others	3
4. Plan to discontinue their use in future	6
5. Plan to expand program in future	13
6. Plan to continue as at present	19
7. Have never encountered any opposition	39
8. Have encountered opposition	5
9. Believe achievement greater than in regular courses	5
10. Believe achievement same as in regular courses	25
11. Believe achievement less than in regular courses	7
12. Have found colleges willing to accept credit for entrance	23
13. Have found colleges unwilling to accept credit for entrance	3
14. Have not experienced any difficulty in getting pupils to enroll in courses	31
15. Have experienced some difficulty in getting pupils to enroll in courses	9

5. THE BENTON HARBOR PLAN

Development of the plan.—Since the Benton Harbor plan of instruction by correspondence was the first systematic school development, it is appropriate to give a brief description of it. The program was first carried on by Sidney C. Mitchell, then principal of the high school, as a private venture outside of school hours. The pupils paid for their courses and did their studying at home. In 1924–25 it was taken over as a public-school project and a part-time teacher was put in charge of the 40 pupils taking work on that basis. In 1925–26 a full-time teacher was employed as Director of Correspondence Study to supervise the work of approximately 100 pupils. Many of the courses were taken by only 1 pupil so it would

have been impossible to make the courses available in the school on any other basis than by correspondence.

Characteristics of the program.—Correspondence instruction in Benton Harbor does not take the place of the regular program of instruction but it supplements the regular courses. Units of courses similar to regular subjects of the school are not taken by correspondence but in the regular classes. These subjects are credited both by the correspondence school and by the high school. High-school credit is given for the units completed by correspondence and they are applied also toward a diploma from the correspondence school. Only completed units are paid for. No payment is made for sections of the courses that are not completed. The cost of text materials and supplies are paid by the pupil and the correction service (tuition) given by the correspondence school is paid by the board of education.

Pupils enrolled in correspondence courses are required to put in at least one and a half hours each day on the correspondence work. This study is done under the direct supervision of the Director of Correspondence Study. As each assignment is completed, it is turned in to the director, who mails it to the correspondence school for correction and criticism. Pupils enrolled in correspondence courses retain their connections with other pupils of the school in courses not taken by correspondence. Experience with correspondence instruction since 1922–23 has made Superintendent Mitchell highly enthusiastic about the values of such instruction.

CHAPTER X: THE SUMMER HIGH SCHOOLS

1. DEVELOPMENT OF THE SUMMER HIGH SCHOOL

The regular school year reduced in length.—The first schools in the early years of the American colonies were open for only a short period of time. The length of the term was increased until it extended over nearly the entire year. There is an erroneous impression extant that the school year has continued to increase in length. In some cities, the school year is now considerably shorter than it was a half century ago. Wicks [1] reported a comparison of the length of the school year in 1841–42 and 1927–28. These data are presented in Table 75. The figures for 1841–42 were drawn from a bulletin of the United States Office of Education.[2] In every case, there is a large reduction. Exact comparisons can not be made for all cities because the data are not available in comparable terms.

The length of the school day has also been reduced. In Cincinnati in 1830, the daily sessions were from 8 to 12 and 2 to 5 in the summer months and from 9 to 12 and 1 to 4 in winter. In 1911, the daily hours were from 8.45 to 12 and from 1.20 to 3.20. "It appears, therefore, that in this typical city the actual reduction in school time per year has been from 233 to 192 days, and from 1,348 to 960 hours." [3]

TABLE 75.—*Length of the school year in certain cities for the years 1841–42 and 1927–28* [a]

City	1841–42	1927–28
Baltimore	11 months	38 weeks.
Boston	224 days	Do.
Chicago	48 weeks	40 weeks.
Cincinnati	11 months	Do.
Cleveland	43 weeks	38 weeks.
Detroit	259 days	40 weeks.
New York City	49 weeks	Do.

[a] Wicks, Arthur F. Summer High School in the Larger Cities. Unpublished master's thesis, Stanford University, 1932, p. 6.

[1] Wicks, Arthur F., Summer High Schools in the Larger Cities. Unpublished master's thesis, Stanford University, 1932, p. 6.

[2] Deffenbaugh, W. S., Summer Sessions of City Schools. U. S. Bureau of Education (now Office of Education) Bulletin, 1917, No. 45, p. 8.

[3] Ibid., p. 8.

The beginnings of the summer high school.—The first summer high school is reported for Providence, R. I., in 1871 to provide a more favorable environment for the children than the streets of the city. The new type of school was not generally accepted until much later. The second summer school reported was for Newark, N. J., and was opened in 1885. Deffenbaugh reported that the purpose of the school in Newark was to keep the children off the streets. "To enable backward pupils to make up deficiencies, to help bright ones to 'skip' a grade, and to keep others profitably employed were in the beginning secondary motives." [4]

The growth of the summer high school.—Summer schools now exist in most of the larger communities. The increase in numbers of schools and in numbers of pupils enrolled has been rapid in recent years. The increase in enrollment from 1922 to 1924 was 26.7 per cent. The number of schools increased from 231 to 346. The number of cities with summer schools increased to 392 in 1926 and to 447 in 1928. The increase in enrollment from 1924 to 1926 was 18.7 per cent and that for 1926 to 1928 was 8.1 per cent. In 1928, there were 456,099 pupils enrolled in the summer schools of 447 cities making report to the Federal Office of Education. About 4 per cent of the pupils enrolled in summer schools were in cities with fewer than 10,000 population. Separate data are not available for the high-school grades.[5] The data reported indicate the general acceptance of the provision of educational facilities during the summer months as a responsibility of the public school.

Cities with summer high schools do not have large proportions of high-school pupils enrolled in the summer school. Hoffman reported a comparison of the number of pupils in the summer high school with the number in high school during the regular school year. The percentages which the numbers in the summer school are of the numbers in the regular high school vary from 3.4 in Boston to 33.8 in Reading. The mean percentage for 27 cities for which data are presented is 14.3.[6]

[4] Ibid., pp. 9–10.

[5] These data were taken from the Biennial Survey of Education, 1926–28, U. S. Office of Education Bulletin, 1930, No. 16, pp. 497–498.

[6] Hoffman, David M. Status of Summer High Schools in Cities of More Than 100,000 Population. School Review, 33:109, February, 1925.

Date of organization of summer high schools.—As part of the National Survey of Secondary Education, data were obtained concerning the summer high school. A blank of inquiry was sent to all summer high schools that could be located. Two hundred and thirty-nine schools furnished the data requested. In addition to the information obtained from the investigation made in the Survey, data obtained by other investigators will be reported.

The date of organization of 203 of the summer high schools for which this item of information was reported is given in Table 76. More than a third of them have been organized since 1925 and about two-thirds have been organized since 1920. A negligible proportion have been in existence as long as 25 years. These data support the statement made above that the summer high school is a relatively recent development, even though the first schools were organized approximately 60 years ago.

TABLE 76.—*Distribution of summer high schools according to year of organization*

Year of organization	Number	Per cent	Year of organization	Number	Per cent
1930–1931	1	0.5	1905–1909	7	3.4
1925–1929	78	38.4	1900–1904	5	2.5
1920–1924	56	27.6	Before 1900	1	.5
1915–1919	33	16.3			
1910–1914	22	10.8	Total	203	100.0

Enrollments in summer high schools included in investigation.—Some of the summer high schools are very small and others have large numbers of pupils enrolled. The data presented in Table 77 show 24 schools with fewer than 50 pupils and 38 with 1,000 pupils and more. The median enrollment for the entire group is 271.9; a fourth of them have enrollments smaller than 102.3, and the largest fourth have enrollments of more than 666.7.

The number of girls enrolled in the summer high schools is slightly larger than the number of boys. The median number of boys is 101.5 and the median for girls is 123.4. These data may indicate that girls find fewer interesting out-of-school activities available for them in the community. The numbers of pupils in the different grades do not differ

greatly, except that the number for the twelfth grade is smaller than for the other grades.

Schools that have been in existence for a number of years have experienced a steady growth. (See Table 78.) Ninety-seven of the schools reported enrollments for 1924, 1926, 1928, and 1930. The same schools are represented in all four groups of the table. The medians have increased steadily, although not strikingly.

TABLE 77.—*Enrollments in summer schools of 1930*

Number of pupils	Number of schools with various enrollments						
	Boys	Girls	Grade 9	Grade 10	Grade 11	Grade 12	Total
1	2	3	4	5	6	7	8
1,000 or more	8	8	2	2	2	2	38
900-999	3	3					2
800-899	2	2					8
700-799	5	2		1		1	4
600-699	5	6		1	3		12
500-599	6	10				1	10
400-499	7	11	2	4	3	1	10
300-399	7	10		3	6	5	19
250-299	11	7	4	4	5	3	16
200-249	2	9	6	13	9	6	13
150-199	15	14	10	5	7	7	20
100-149	22	23	11	9	14	10	17
50-99	36	27	22	23	18	18	31
Fewer than 50	54	48	35	35	35	35	24
Median	101.5	123.4	75.0	81.8	77.0	52.0	271.9
First quartile	45.6	47.0	30.0	29.2	24.5	22.3	102.3
Third quartile	258.5	370.0	158.3	211.5	213.9	168.8	666.7

TABLE 78.—*Enrollments of 97 summer high schools in 1924, 1926, 1928, and 1930*

Number of pupils	Number of schools with various enrollments			
	1924	1926	1928	1930
1	2	3	4	5
1,000 and more	14	17	17	22
900-999	1	2	3	2
800-899	4	2	3	5
700-799	2	5	4	3
600-699	5	5	6	8
500-599	7	3	4	5
400-499	6	4	6	2
300-399	7	15	14	13
200-299	12	14	16	15
100-199	23	16	11	8
Fewer than 100	16	14	13	14
Median	275.0	325.0	354.2	353.5
First quartile	131.3	151.0	201.4	222.5
Third quartile	635.0	735.0	768.8	895.0

3. *PURPOSES OF SUMMER HIGH SCHOOLS*

The reasons for the development of summer high schools can not be determined with certainty; one can only obtain the statements of persons now in positions of responsibility. Reference has already been made to the desire in the organization of the first summer schools to keep the children off the streets. It is doubtlessly true that present-day opinion is in accord with this early judgment that the summer school provides a more favorable environment for the growth and development of the child than the out-of-school summer environment in the typical American city. However, only a fourth of the respondents included in Table 79 checked item 4, which covers the item just mentioned. However, "to provide for pupils who have no other summer employment" may not have carried to the respondents the same meaning as "the provision of a more favorable environment than the streets."

TABLE 79.—*Purposes of 239 summer high schools as indicated by persons in positions of responsibility*

Purpose	Number expressing each purpose	Per cent
1. To give pupils an opportunity to make up subjects failed during the regular school year	237	99.2
2. To enable more capable pupils to complete courses earlier	194	81.2
3. To utilize school plant during summer months	56	23.4
4. To provide for pupils who have no other summer employment	58	24.3

The first two purposes listed in Table 79 are the dominant ones expressed by the heads of these schools. A large proportion of pupils go to summer school to make up work in which they failed during the previous school year in order that they may continue with their regular class. Practically all respondents indicated this to be one of the purposes of the school. A somewhat smaller proportion reported that they aim to enable the more capable pupils to complete courses earlier. That is, prevention of retardation appears to have motivated the development of the summer high schools more than the acceleration of brighter pupils. The third item, "To utilize school plant during summer months," is

sometimes given as a defense of the summer school. While it may not appear to be a wise policy to invest large sums of money in school buildings and have them lie idle for a fourth of the year, one could hardly justify using the school buildings merely to have them in use. The justification would be in the improvement of the opportunities for children which is made possible by such use.

3. THE PROGRAM OF THE SUMMER HIGH SCHOOL

Some of regular high-school subjects not included.—Investigations by Bush and Wicks showed that many of the schools omit some of the regular high-school subjects from the offerings of the summer high school. Bush reported that of 79 summer high schools "52 do not offer stenography and typewriting; 66 per cent do not offer physics or chemistry; 31 per cent do not offer foreign language; 72 per cent do not offer home economics; and 71 per cent offer no shop courses."[7] Wicks reported the percentages of 56 summer high schools that did not offer different subjects. The percentage for foreign language was 16.1; history, 7.1; physics, 53; chemistry, 39; biology, 27; stenography, 34; typewriting, 34; manual training, 64; mechanical drawing, 54; household art, 68; fine art, 66; geometry, 2. The reason given most frequently, by 79 per cent of the schools, for not offering these subjects, as reported by Wicks, is the lack of demand for them. Lack of time in the summer session was mentioned by 13.4 per cent of the schools.[8]

Subjects offered in summer high schools.—Practically all subjects in the regular offering of the high school appears in one or more of these summer high schools. (See Table 80.) Some subjects appear much more frequently than others. However, the practices in the schools show that all these subjects may be offered under the conditions of summer instruction if facilities are available and if pupils elect them.

[7] Bush, Ralph H. Current Practices in Summer School. School Review 32:144, February 1924.

[8] Wicks, Arthur F. Op. cit., pp. 80–81.

One might make the generalization that the academic subjects appear in a larger proportion of the schools than the shop subjects. The largest frequency for the industrial arts group (27 schools) is for mechanical drawing. Printing and woodworking appear in only 10 schools. The vocational subjects in the commercial field are very commonly offered, the number being especially high for typing. A considerable number of the schools offer the different courses in science which involve laboratory work. The extensive scope of the offerings of this group of summer high schools can best be appreciated by the reader from a canvass of the list of subjects reported in Table 80.

The data on the enrollment in the different subjects have been presented to show the extent to which pupils elect each. While in some schools the enrollments are relatively small, it is clearly the policy to offer in the summer only the subjects desired by enough pupils to furnish a class of reasonable size. The enrollments are largest for the regular required subjects of the high school, such as English and mathematics, and for the commercial subjects.

Some of the subjects are taken largely by pupils enrolled in certain grades. Respondents were asked to indicate the grade which was the dominant classification of the pupils in each subject. In some cases, several grades were checked since pupils enrolled in the subject came in equal proportions from several grades; in other cases no response was given to this part of the inquiry. These data are reported in column 4–7 of Table 80. The purpose of this inquiry was to determine what grade levels were being served by the various subjects. For the most part, subjects normally offered for some grade level during the regular school year are reported as serving mostly pupils on the same grade level during the summer.

TABLE 80.—*Number of 239 summer high schools offering various subjects and data on enrollment*

Subject	Number of schools offering subject	Median enrollment in subject	Number of schools reporting each grade as dominant classification of pupils in the subject			
			9	10	11	12
1	2	3	4	5	6	7
COMMERCE						
Accounting	13	50	2	3	2	1
Advertising	1					
Bookkeeping	70	33	8	29	26	7
Business economics	1					
Business relations	1					
Business spelling	1					
Business training	35	32	12	1	4	2
Commerce	1					
Commerce and industry	1					
Commercial arithmetic	80	29	30	22	3	2
Commercial art	3					
Commercial correspondence	10	25				1
Commercial English	15	29	1	1	6	5
Commercial geography	40	32	2	10	7	4
Commercial law	48	30			17	17
Commercial organization	1					
Comptometry	1					
Elements of business	1					
Filing	10	50	1	1		1
Merchandising	1					
Office appliance	7	38		1		2
Office production	1					
Penmanship	10	30	3	3		
Secretarial training	1					
Stenography	86	35		20	41	20
Stenotypy	5	175				
Sales and advertising	2					
Sales cooperation	1					
Salesmanship	12	25			1	4
Typing	101	45	9	31	43	25
ENGLISH						
Applied English	6	25			1	1
Composition	8	42	3	3	4	5
English [1]	218	96	121	131	132	107
Oral English	1					
Reading	1					
English essay	3	25				
Grammar	8	25	1		1	
Journalism	2					
Literature	16	46	3	4	5	7
Speech	8	25			1	
Spelling	1					
FOREIGN LANGUAGES						
French	99	42	25	51	42	16
German	34	38	1	11	7	3
Italian	2					
Latin	159	41	76	82	43	18
Modern languages	1					
Spanish	79	36	21	27	23	9
HISTORY						
American	83	41		5	28	36
Ancient	42	32	13	21	5	
English	4	25		1	5	1
European	13	45	2	7	3	
Early European	7					
Modern European	10					

[1] The phase of the subject not indicated.

TABLE 80.—*Number of 239 summer high schools offering various subjects and data on enrollment*—Continued

Subject	Number of schools offering subject	Median enrollment in subject	Number of schools reporting each grade as dominant classification of pupils in the subject			
			9	10	11	12
1	2	3	4	5	6	7
HISTORY—Continued						
History [1]	96	52	18	34	32	32
Ancient and medieval	1					
Early civilization	1					
Early progress	1					
History and problems, A. D	1					
History of civilization	2					
History of mankind	1					
History problems	1					
Industrial	7	30		1	2	
Latin American history	1					
Medieval	6	50	1	6	2	1
Medieval and modern	7					
Modern	35	32	3	17	24	1
Oklahoma history	1					
Pacific Coast history	1					
Rocky Mountain history	1					
Roman	2	25	1			
United States	17	47			11	9
World	31	35	4	14	5	1
INDUSTRIAL ARTS						
Aircraft design	1					
Architectural drawing	2					
Auto mechanics	7	25	1		3	4
Basketry	1					
Cabinet making	4					
Electricity	6	63			2	1
Direct and alternating current	1					
Forge	3					
Foundry	1					
Machine	1					
Machine shop	6	50		2		
Mechanical drawing	27	33	2	3	5	3
Machine drawing	2					
Pattern	1					
Pottery	1					
Printing	10	33	1	3	2	
Sheet metal	1	25			1	
Shop	2					
Shop machinery	1					
Textile training	1					
Woodworking	10	19		3	1	2
MATHEMATICS						
Algebra	176	42	5	4	3	3
Arithmetic	24	31	5	4	3	3
Calculus	1	25				1
Industrial mathematics	3					
Mathematics [1]	45	83	15	12	10	8
Plane geometry	161	35		89	36	2
Solid geometry	57	25			14	25
Trigonometry	29	27			2	17
MUSIC, ARTS, AND CRAFTS						
Art	10					
Band	8					
Cooking	3					
Costume design	1					
Dramatic art	1					
Freehand drawing	5	25			1	

[1] The phase of the subject not indicated.

TABLE 80.—*Number of 239 summer high schools offering various subjects and data on enrollment*—Continued

Subject	Number of schools offering subject	Median enrollment in subject	Number of schools reporting each grade as dominant classification of pupils in the subject			
			9	10	11	12
1	2	3	4	5	6	7
MUSIC, ARTS, AND CRAFTS—Contd.						
Group music	2	25				1
Harmony	1					
Home economics	1					
Household arts [1]	1					
Instruction in music	3					
Music [1]	5	30				1
Orchestra	5					
Sewing	9	58		1		1
Stage craft	1					
SCIENCE						
Astronomy	1	25				1
Biology	87	34	21	36	5	1
Botany	16	27		5	2	3
Chemistry	76	32		3	27	25
General science	43	29	31	3		
Geography	12	33	2	11	3	1
Geology	1	25			1	
Physical geography	21	38	3	4	2	3
Physics	68	38		1	27	26
Physiology	10	25			4	3
Science [1]	34	38	13	5	2	
Zoology	5	25				
SOCIAL STUDIES (other than history)						
Civics	92	36	31	5	14	21
Civics and democracy	1					
Civics and vocations	1					
Current history	1					
Economics	55	34	1	1	13	30
Economic geography	8					
Personal efficiency	10					
Problems of democracy	12	38			3	6
Social science [1]	36	38	4		6	13
United States Constitution	2					
SPECIALS OR OTHERS						
Agriculture	2		1		1	
Automatic telegraphy	1					
Automobile drivers	1					
Beauty culture	1					
Camp cooking	1					
Janitorial engineering	1					
Law	1					
Physical education	6					
Psychology	1	25				2
Representation	1	25			1	
Surveying	1					
Vocational guidance	1					
Waiting table	1					

[1] The phase of the subject not indicated.

Extracurriculum activities in the summer high school.—Extracurriculum activities have not been generally incorporated in the program of the summer high school. Wicks reports that as many as 88 per cent of 57 cities canvassed

had no extracurriculum activities. Only 5.3 per cent reported the existence of an advisory organization. The percentages of schools with various activities were 1.8 for baseball, 5.3 for swimming, 3.5 for tennis, 3.5 for school paper, 5.3 for assembly, 5.3 for excursions, and 1.8 for clubs.[9] Pupils come to the summer high school for class instruction and the supplementary learning activities provided in the regular high school are usually lacking.

4. THE ADMINISTRATION OF THE SUMMER HIGH SCHOOL

Length of summer session.—The length of the summer session varies considerably. (Table 81.) The great majority of them are either 6, 7, or 8 weeks in length, with about three-eighths running for 8 weeks, three-eighths running for 6 weeks, and another eighth running for 7 weeks. A few extend over a period of 12 weeks and a small number run for only 5 weeks. These data are similar to those obtained by Wicks from his canvass of 69 schools. He found 45 per cent 6 weeks in length, 16 per cent 7 weeks, 32 per cent 8 weeks, and 7.3 per cent 9 weeks.[10]

TABLE 81.—*Distribution of summer high schools according to the numbers of weeks in the session*

Number of weeks	Number	Per cent	Number of weeks	Number	Per cent
12	3	1.3	7	33	13.9
11			6	91	38.2
10	6	2.5	5	3	1.3
9	13	5.5			
8	89	37.4	Total	238	100.1

Number of courses permitted.—There is considerable agreement in the number of courses pupils are permitted to take during the summer term. (See Table 82.) As many as 77.6 per cent report that two courses are permitted. A much smaller proportion, 11 per cent, indicated that three courses are allowed. Four schools stated that only one course could be taken. Some of the schools qualified the answer to this question, indicating that the number permitted varied with the educational needs of the pupil. The number of courses permitted affects the amount of time the pupil can give to each course.

[9] Wicks, Arthur F. Op. cit., p. 86.
[10] Ibid., p. 88.

TABLE 82.—*Numerical and percentage distribution of summer high schools according to the number of courses pupils are permitted to take*

Number of courses	Number of schools allowing each number	Per cent
More than 4	17	7.5
4	5	2.2
3	25	11.0
2	177	77.6
1	4	1.8
Number of schools	228	100.1

Length of the class period.—There is wide variation in the length of the class period. Wicks [11] reported a range of from 30 to 138 minutes. The 60-minute period, the one most commonly used, was reported by 26 per cent of the schools. Twelve per cent of the schools reported a 45-minute period. Some of the schools have a period 2 hours in length and one school reported a 3-hour period. The hour period was used by about 50 per cent of the schools canvassed by Bush [12] in 1923. The 2-hour period was most frequently used for the laboratory subjects. It is probable that the same length of period is used in the summer school as in the regular high school with the exception that in some schools a lengthened period is used in the summer school.

Tuition charge for summer school.—The summer high school is not open to all pupils as a free public school in some communities. Instead, a tuition charge is often made. Of a total of 175 schools reporting on this item in the inquiry made in the survey, 102 had a charge and 73 had no charge. The size of the fee varies from less than $6 to more than $30 for a full program. (See Table 83.) The median charge in the 102 schools was $10.84. The figures given refer to pupils who reside in the district supporting the school. Some schools make a higher charge for nonresident pupils. The charge for nonresident pupils is somewhat larger in the schools that make a charge for resident pupils than in schools that do not have a charge for those residing in the district. In more than half of the communities the summer high school has

[11] Ibid., p. 41.
[12] Bush, Ralph H. Op. cit., pp. 143–144.

not yet been entirely accepted as part of the free public program of education.

TABLE 83.—*Distribution of summer high schools according to the amount of special tuition charged for attendance*

Amount of tuition charge for a full program	Schools charging tuition to resident pupils	Schools charging tuition to non-resident pupils		
		In schools with a smaller charge to resident pupils	In schools without a charge to resident pupils	All schools
1	2	3	4	5
$31 or more	2		1	1
$26–$30	1	2	2	4
$21–$25	5		4	4
$16–$20	18	4	3	7
$11–$15	24	4	11	15
$6–$10	33	3	6	9
$1–$5	19		4	4
No charge	73			
Total number of schools	175	13	31	44
Median charge [1]	$10.84	$15.38	$13.50	$14

[1] Only schools making some charge were included in calculating these medians.

The staff of the summer high school.—The principalship of the summer high school is filled in about half of the cases by the principal of the regular high school and in a sixth of the schools by the vice principal of the high school. (Table 84.) It is sometimes filled by a junior high school principal, an elementary school principal, the head of a department in the high school, or a teacher in the high school. In most situations, there is continuity in the administration of the regular school and the summer high school.

TABLE 84.—*Position during regular school year of person who serves as principal of the summer high school*

Position	Number	Per cent
High-school principal	117	55.7
Assistant principal of high school	34	16.2
Junior high school principal	8	3.8
Elementary-school principal	10	4.8
Head of department in high school	19	9.0
Teacher in high school	22	10.5
Total	210	100.0

Wicks [13] made some analyses of the teaching load and salary. On the average, 4 hours of classroom teaching is required of the summer teacher. For half of the schools, there are no additional responsibilities, and the teacher is not required to be at the school building more than the 4 hours given to teaching. Some schools require the teachers to be on duty for some time in addition to the time given to teaching. About half of the schools require the teacher to be on duty 5 hours a day. The salary of the teachers ranges from $4 to $16 a day. The median pay is $7.50.

5. THE QUALITY OF THE WORK DONE IN THE SUMMER HIGH SCHOOL

Opinions concerning the quality of work done in summer high school.—Judgments of quality of work done in summer high schools have been favorable. Deffenbaugh quoted from the report of the Superintendent of Schools of Newark of 1914–15 as follows: "Many teachers reported that their classes in advanced subjects completed more work than the classes do regularly in 20 weeks." [14] Deffenbaugh also reported that an average of from 71 to 80 per cent of the pupils who have failed in one or more subjects in the regular term succeeded in making up those subjects and in gaining a promotion. Only a small proportion of the pupils, not more than 11 per cent, succeeded in gaining a half year by attending summer school in 24 of the 37 schools studied. The percentage was much higher for some of the schools.[15]

The report of the superintendent of schools in Los Angeles for 1913–14 strongly lauded the work of the summer schools:

> The percentage of failures in vacation work is less than that of regular work. . . . The percentage of pupils taking work for advanced credits was considerably higher than of those taking work for back credits. It has been the general concensus of opinion of both teachers and pupils that the summer school is more rational and a more interesting school than the regular school.

While one might wonder what it was that made this summer school more successful than the regular school, the statement can certainly be accepted as presenting a judgment not unfavorable to the summer school.

[13] Wicks, Arthur F. Op. cit., pp. 52–61.
[14] Deffenbaugh, W. S. Op. cit., p. 15.
[15] Ibid., p. 10.

Bush obtained responses favorable to the summer high school. Two-thirds of the respondents stated that they obtained as good results from the summer session as from the regular academic year. The other third gave negative responses.[16] Since supplementary information was not obtained, it is not possible to give the reasons for the negative reactions.

Measures of quality of work in summer schools.—The State examinations in New York have made possible some check on the work done in summer schools. "In this State during the year 1925–26, 808,374 of these papers were written. Of this number 617,171, or 76 per cent, received passing grades. In the following 1926 summer session, of 15,199 papers written, 66.6 per cent of them received passing grades." [17] This is only slightly lower than the averages for the State in the January and June examinations.

Reals made a careful comparison of the achievement in two summer high schools in New York City with achievement during the regular school year. The following quotation will summarize the results of the comparison:

> Five achievement tests were given during the summer high-school session in two schools in order to compare the quality of the work in the summer school with the quality of work during the regular academic year. Nonsummer groups and summer groups were equated on the basis of Terman test scores. In only two instances were there significant differences in favor of the nonsummer school group. Ten differences were not significant for either group. Seventeen differences were in favor of the summer group. It was concluded that the work of the summer high-school group was superior to that of the regular academic year.
>
> The success of summer high-school pupils who were promoted to advanced work was compared with that of nonsummer high-school pupils in the regular academic year. In no instance was there a significant difference in favor of summer high-school pupils. In five instances there were significant differences in favor of the nonsummer high-school group. The conclusion was drawn that nonsummer high-school pupils are superior in their ability to do advanced work. The fact that summer high-school pupils were superior in their achievement during the summer session, but inferior in their ability to do advanced work when compared with nonsummer high-school pupils, was ac-

[16] Bush, Ralph H. Op. cit., p. 145.

[17] Reals, Willis Howard. A Study of the Summer High School. Teachers College, Columbia University, Contributions to Education, No. 337, 1928, p. 23.

counted for as follows: In the study of the achievement during the summer session the groups were equated on the basis of their Terman scores, but in the study of the ability of summer high-school pupils to do advanced work, this equating of groups was impossible, because of the few cases and because of their being scattered in so many different high schools. It has already been shown that the Terman scores of the summer groups were much lower than for nonsummer groups taking the same achievement tests. A later chapter also showed that the Terman scores of the summer group were below the norms established by Terman for their respective grades. There is plenty of reason to believe, therefore, that had these groups been of equal initial ability these differences would probably have been different, and that the ability of summer school pupils to do advanced work might have been just as good as the ability of nonsummer high-school pupils in the same work.[18]

6. THE SUMMER HIGH SCHOOL AN EXTENSION OF EDUCATIONAL SERVICE

The summer high school not yet completely accepted.—The summer high school has not yet been completely accepted as an integral part of the school. Instead, it is commonly made available for those who are weak in certain subjects or for those who desire to advance more rapidly than the normal rate. A number of policies in the summer school differ from those followed in the regular high school. The charge of tuition for the summer school is an important violation of the principle of free public education. The restriction of the program of the summer school to course work involving a general lack of the extracurriculum or group life is a second important contrast with the program of the regular school year.

Recognition of need for new forms of educational service.—In many ways, educators have come to recognize responsibility for the welfare of youth beyond the time they are enrolled in the full-time day school. The continuation school and the evening high school represent extensions of service of the school. There is also a recognition that there is responsibility for providing a positive program of activities for youth during the summer months. The need for such service is especially pressing in the cities where the opportunities for desirable forms of activities are restricted. Idleness and unsupervised gang activity on the streets of

[18] Ibid., pp. 78-79.

the cities do not furnish a favorable condition for the growth and development of the child. The practices canvassed in this chapter indicate a recognition that the summer months might be used for educational purposes. A supervised program of activities in connection with the school is certainly more favorable to the development of the child than the unsupervised community activities of the city.

CHAPTER XI : THE EVIDENCE AND THE ISSUES

Different types of education for pupils of different needs and interests.—Decision concerning organization involves consideration of a number of issues. Different types of educational service have been provided in secondary schools for pupils of different needs and interests. Among the types of programs set up to serve these needs and interests are those aiming to provide vocational training. These vocational programs have been set up as specialized curriculums in some schools and in other cities special schools have been provided for the major vocational fields. The activities of the present project of the National Survey of Secondary Education have endeavored in part to define the issues involved in determining the form of organization, to describe somewhat the nature of the programs under different types of organization, and to secure some data on the manner of operation of the programs that have been set up. In this summary statement, some issues that have been raised (see Chapter I) concerning the form of organization will be restated and the information available concerning them will be reviewed. No attempt will be made here to summarize the programs of the different types of school; persons interested in such materials should refer to the chapters concerned.

What program of vocational education will best serve present-day needs?—Much more extended investigation is required to provide the answer to this question than was possible in the present Survey. Certain differences have been noted between the programs in different types of institutions. The teachers of vocational subjects in specialized schools reported more vocational experience than teachers of the same subjects in comprehensive schools; the latter group of teachers reported higher levels of education. This difference in training and experience reflects a difference of judgment as to what qualifications are desireable for vocational teachers. There is significant difference also in the extent to which the program of the school is dominated by the vocational objective. In some of the schools pupils are taken from the eighth

grade and the program is completely given over to the development of vocational competence, drawing from the different fields only as they serve the vocational objective. Other schools recognize the importance of vocational training, but adopt a policy which shows recognition of the need for a broader education. Some of the programs of the specialized vocational schools have already incorporated training elements other than the vocational into their programs, and some of the administrators of schools canvassed in the present Survey indicated recognition of the need of broader training, of desirability of delay in specialized training until the upper years of the secondary school, and of need of an enriched program, especially at the lower levels of the secondary school. The part-time cooperative training programs ordinarily provide intensive training experiences during the later years of the pupil's school life.

In which type of institution are conditions more favorable to the attainment of the vocational objective and other objectives of the secondary school?—This general question is closely related to the preceding one. The consideration of some of the issues to be raised later have some bearing on this question. It will be obvious to the thoughtful reader that a categorical answer is not possible. Teachers working in the different types of schools are not in agreement. There is some tendency for teachers in each type of school to consider the type in which they are employed more satisfactory. The industrial teachers are more disposed than the other groups of teachers to favor the specialized schools. The teachers were almost equally distributed among comprehensive school, vocational school, and cooperative type of training in their judgment of the type of vocational training that is most effective.

What importance is attached to vocational education in secondary schools?—Are teachers in comprehensive schools so negative towards vocational education as to make conditions unfavorable to the development of a successful program in these schools? All groups of teachers in all types of schools conceded vocational education a position of large importance. Some individual teachers reacted negatively; others indicated a very favorable judgment. On the average, teachers in comprehensive schools conceded this work a position of as

great importance as the teachers in the vocational schools.

Are there special guidance problems associated with the provision of specialized schools for different types of vocational training?—Data were not secured on the extent of the guidance problem under the different forms of organization other than to point out aspects of the problem of distribution of pupils under the specialized school organization that do not exist in the comprehensive school. A comparison of guidance programs in the different types of schools did not disclose larger stress on guidance in the specialized schools. If a more difficult guidance problem exists in systems with specialized schools, recognition is not given to it in the program of guidance provided in these schools.

Do pupils tend to attend schools located in community of residence regardless of type of training offered and to fail to travel greater distances to attend schools offering training along the lines of choice?—Pupils enrolled in specialized schools are drawn more largely from the section of the city in which the school is located. That fact might be explained, in part at least, by the location of these schools in the section of the city having the largest demand for the work. Canvass of distribution of residence of pupils in specialized schools in three cities shows that some pupils do travel long distances. Practically all pupils in the specialized vocational schools reported that they selected the school because of the vocational training possibilities; practically none admitted that they were there because the school happened to be convenient. The statements of pupils would suggest that few attend the more specialized schools because of proximity of residence.

What effect does the type of organization have on the characteristics of pupils attracted to vocational courses?—Pupils enrolled in commercial, industrial, and academic types of training display significant differences in intelligence, in economic status, and in other respects. However, from the comparisons made it would appear that the form of organization has little to do with the type of pupil who enters the various courses. That is, the percentages of commercial pupils from the different economic levels are the same for the pupils in the commercial curriculums in the comprehensive

school as for the pupils enrolled in the commercial schools. The same similarity exists for industrial pupils. The data for intelligence are in agreement with those for economic status. About the same type of pupil intellectually is attracted to the commercial and industrial curriculums, regardless of the type of school in which those curriculums are offered.

What are the effects of segregation or close association of industrial, commercial, and academic pupils?—Teachers in different types of schools believe that the form of organization affects the attitudes of pupils. On the average, teachers believe that vocational pupils are likely to participate in social activities slightly less when in a separate school than when in a comprehensive school. They believe, also, that vocational pupils do not associate so freely with academic pupils in out-of-school activities when they are enrolled in the same school. Separation of academic and vocational education is believed by teachers to make the group spirit and morale of vocational pupils slightly stronger than if they were enrolled in a comprehensive school, but they believe that segregation has some effect in creating and fostering feelings of social difference between the two groups. All groups indicated that organization has some effect on the attitudes of pupils.

The attempt at measurement of attitudes of pupils was not adequately fruitful as it was not possible to analyze the data for a large number of schools. Some differences were noted between the attitude test results for an Eastern city with specialized schools and a Midwestern city with a comprehensive school. Such small differences as were noted might be interpreted as being somewhat favorable to the comprehensive school, although the data are not adequate to establish advantage for either type of organization.

To what extent do pupils benefit vocationally from their vocational training in secondary schools?—The canvass made in the Survey was not adequate to provide the basis for generalization on this issue. The great majority of those with considerable vocational training make use of the training after leaving school. The proportion is much smaller for those with less training in the comprehensive schools. This

fact can be explained by the discovery by some that they did not like the work or did not succeed; others were taking courses not to equip themselves for vocational activities, but because of interest in the activities apart from their vocational applications. The percentages making use of vocational training were higher for the trade school than for other forms of industrial training. The vocational advancement of those who entered the various occupations with different types and amounts of training or without any training has not been studied adequately to show the extent of value to the pupil. Such a study would provide the most significant type of evaluative data. Some indication of value is shown in the allowance on the apprenticeship program which is given pupils with different amounts of training.

To what extent should the secondary-school program be limited to class instruction during the regular school year?— Various extensions in the program of secondary schools have been noted in the reports of the Survey. Reference has already been made to the practice in cooperative part-time training of utilizing the situations in occupations for practice to supplement the school training. Some schools have supplemented the school offering also by correspondence study, providing thereby greater variety of offering than would be possible under more regular conditions. This instruction is made available in both academic and vocational subjects. Such extension programs are considered successful by those in charge of schools where they are being used.

The advantages of the school are also made available in the summer months in most of the larger communities. These summer high schools are not yet put on the same basis as the regular school year either in offerings or in costs (tuition is frequently charged for summer attendance), but there is recognition both in theory and practice that the school should be concerned with providing a favorable environment for the development of youth throughout the year.

The horizontal organization of secondary education of larger importance with increase in variety of educational activities.— In the attempt to serve the differing educational needs of

the highly varied group of pupils, many types of educational activities have been developed. The coordination of these different offerings and of the agencies administering them becomes an important concern in the administration of public education. It is essential that the organization be such as to facilitate the use by pupils of the different types of educational activities. Systematic attempts to determine the effectiveness of the various features of the program are deserving of support. The data reported in this volume illustrate types of information that contribute to an understanding of the problems associated with the horizontal organization of secondary education. The limitations of the data reported have been noted in connection with their interpretation. More extended studies are needed and in some cases more refined techniques are required.