

**The Carnegie Unit:
Its Origin,
Status, and Trends**

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Foreword

MORE THAN ever before teachers, principals, and superintendents are joining with parents and citizens of the community in examining and appraising what the schools are trying to do and how their work can be adequately supported. One of the topics that comes up for frequent discussion in the high school field is the Carnegie Unit.

It has been our experience that very few people in or out of high schools know the story of the Carnegie Unit. Any discussion of it, therefore, is likely to culminate in expression of opinions for which there may be little basis in fact. Ask questions such as the following to find out how true the previous statement is: What is the Carnegie Unit? Why did it originate? Who sponsored it? How did it develop? Is it today a help or hindrance to good education? If it is a hindrance, why is it so? What alternate educational procedures can replace it?

The purpose of this report is to answer such questions as objectively as possible. Inasmuch as no comprehensive treatment of the topic exists, the authors went back to the original sources and examined many thousands of pages of annual reports, research findings, and commission studies extending from 1873 to the present. This bulletin sets forth briefly the salient features of extensive inquiry. To provide a comprehensive treatment of the topic would take many volumes.

A further word: the question of the continued use or the abandonment of the Carnegie Unit is examined in relation to current educational problems. This publication is not concerned with theories of education. It is concerned with practical considerations of the

topic and the extent to which these considerations affect favorably the fundamentals of good secondary education.

We believe that both the educational profession and citizens interested in education will find much enlightenment in this report. We hope that it will stimulate further interest and research.

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CHAPTER I

Introduction and Purpose of the Study

Introduction

THE CARNEGIE UNIT, unique to the American system of secondary education, is being reexamined. Is it outmoded? Do the far-reaching changes occurring in the objectives of secondary education, in the number and types of pupils attending, in the high school-college relationships—to name only a few—call for new methods and instruments of pupil evaluation and accounting? Has the time come when the Carnegie Unit and its use must be either radically reconstructed or abandoned? Assuming that these questions are answered in the affirmative, serious thought must obviously be given to the problem of what is to take the place of the Carnegie Unit and how desired change can be effected.

For 45 years the basic means of measuring the progress of pupils from high-school entrance to graduation has been the Carnegie Unit. To most people this has meant that during the years of high-school attendance the pupil must earn a certain number of credits—usually 16 in a 4-year high school—to be graduated. More specifically, the Carnegie Unit has been responsible for developing in the high schools the concept that a given subject should be pursued by each pupil for a minimum number of minutes per day, days per week, and weeks per year. The assumption is that a pupil must attend classes in each subject for a minimum of 120 clock hours per school year, or the equivalent, to earn one Carnegie Unit (or 60 clock hours to earn a half unit), and must carry a program of four subjects for each of the years to be graduated.

Those urging the reexamination of the Carnegie Unit as a useful means of measuring pupil progress point out that these time allotments reduce high-school graduation to a question of covering certain bodies of subject matter regarded as approximately equal one to another, and suggest that each pupil achieve in each a similar degree of mastery. Followed blindly, as it often is, they say that this concept (1) asks few questions about a pupil's ability to master the required bodies of knowledge, (2) pays too little attention to what he already knows, (3) forgets conveniently that some learn the same facts or skills in a fraction of the time required by others, (4) fails to reconcile wide variations in teaching skill and efficiency, and (5) ignores the many other facts about teaching, learning, testing, and marking which do not in fact conform to such a simple, quantitative for-

mula as the Carnegie Unit. At its worst, the Carnegie Unit is accused of being a road-block to the building of modern high-school curricula, to needed reconstruction in the schedules of instruction, to sound evaluation of pupil progress, and to the improvement of high school-college relationships.

The deep entrenchment of the Carnegie Unit in the practices of secondary education in the United States has become evident to everyone who has probed its status or sought to challenge its sway. Two points seem abundantly clear if intelligent efforts are to be made to change or supplement the use of this Unit: first, its origin, status, and trends must be more fully understood; and, second, proposed changes must be educationally sound and administratively workable.

The Purpose of This Study

The purpose of this report is to bring together significant facts and describe developments which will help educational leaders to take a critical look at the Carnegie Unit. To achieve this objective the report will reexamine the role of the Carnegie Unit in the various programs and activities of the high school today, and in the administrative practices and policies which have grown out of its use or which are associated with it. The report will show that the use of the Carnegie Unit has much broader implications than are often recognized. It has significance for curriculum planning and schedule making, for determining required and elective subjects, for improving methods of teaching, for modernizing the marking and recording of pupil progress, for setting up graduation goals, and, finally, for issuing diplomas. Indeed, it will be seen that the role of the Carnegie Unit is not confined to the internal programs and operations of any given high school, but that its influences follow the youth into his post-high-school education, as well as into his social and economic life.

To understand the role of the Carnegie Unit in our secondary schools today it is important to know how this unit came into being, why it was created, what forces established its present powerful position in the educational system, what beneficial contributions it has made; and what values and disvalues it contributes to secondary education at the present time. To help toward these understandings, the origin and history of the Carnegie Unit will be carefully reviewed and the findings of those studying the problems involved will be examined. It will be shown that like so many developments in the American school system, the Carnegie Unit was created to serve a specialized need existing chiefly outside of the school level in which it now functions, that it served a number of highly useful purposes during the rapid growth of our public secondary schools, that even today it continues to have certain positive but limited values, and that its unquestioned use now tends to impose restraints which impede desired improvements in the high school.

This report hopes to do more than to show how the Carnegie Unit came into being or to examine its positive and negative values. A major purpose of the authors will be to set forth ways and means whereby this quantitative unit might increasingly be replaced by policies, procedures, and instruments more qualitative in nature. It will call attention to experiments that eventually might prove to be better than the Carnegie Unit; it will review proposals for change made by educational leaders; and it will report cooperative research and experimentation under way in which more suitable procedures are being developed by secondary schools.

CHAPTER II

The History of the Carnegie Unit

THE CARNEGIE UNIT is a device for measuring high-school work in terms of credits based on time spent in the classroom. This device was imposed on the high schools by efforts of the colleges and universities to standardize admission procedures:

Its historical setting divides into three chronological parts. The first, extending from 1873 to 1908, may be characterized as a period of growing dissatisfaction with college admission practices and numerous attempts to formulate and implement a solution to acknowledged and acute problems of high school-college articulation.

The second part, 1908 to 1910, deals with the proposal of a standard high-school unit and its introduction to actual day-to-day educational procedure. The third period, from 1910 to the present, includes the development of the Carnegie Unit, its widespread growth, its effect on secondary and higher education, and the slowly evolving evaluation of its effect.

This chapter does not present the historical background of the Carnegie Unit as outlined above, because that would require a greater number of pages than the entire report. Therefore, the history of the Carnegie Unit begins first with certain essential definitions and facts, and then proceeds to analyses of influences and conditions.

Some First Questions

What is the Carnegie Unit?

It is a unit representing a year's study in any major subject in a secondary school, constituting approximately a quarter of a full year's work. Under ordinary circumstances, it assumes that a satisfactory year's work in any major subject cannot be accomplished in less than *120 sixty-minute hours*, or their equivalent.

What was its original purpose?

To afford a standard of measurement for the work done in secondary schools and thereby to facilitate transfer of credits between schools and colleges. It took the 4-year high school as a basis and assumed (1) that the length of the school year was from 36 to 40 weeks, (2) that a period was from 40 to 60 minutes long, and (3) that a subject was studied for 4 or 5 periods a week.

What was its original function?

To recognize a well-ordered high-school course and to provide a means for calculating college-entrance requirements quantitatively.

When and by whom was it first stated?

In 1909 by the Carnegie Foundation for the Advancement of Teaching. It was approved by the College Entrance Examination Board in November 1909.

Is that why it is called the Carnegie Unit?

Yes, but the term was never officially adopted or approved. Both the Carnegie Foundation and the College Entrance Examination Board described it only as a "standard unit." The term "Carnegie Unit" arose because of popular usage, and is no more than an easily understood label.

Was the Carnegie Unit a forward step in education in 1909?

Yes, to overcome at least 7 sources of confusion existing prior to 1909:

(1) Confusion regarding *admission requirements to college*.—The general practice was for each college or university to establish its own requirements without regard to those established by other institutions. This was true of specific subject requirements and total requirements.

(2) Confusion regarding *the time allotment of subject-matter fields in secondary schools*.—Frequently, one subject would be offered 5 days a week in one high school and the same subject offered 2 days a week in another school, yet many colleges would recognize the work as equal in weight.

(3) Confusion concerning *the function and scope of the high school*.—A great many colleges maintained high-school departments as part of their organization. Other colleges taught high-school subjects along with college subjects. High-school youth were often admitted to college before they had completed high school.

(4) Confusion regarding *preparation of students for college*.—To prepare students for particular colleges, high schools had to offer a wider variety of subjects than they could justifiably defend. For example, one college required a study of Sallust, another Livy not Sallust, and another neither Sallust nor Livy but Roman and Greek history not required by the first two colleges.

(5) Confusion concerning *competition for students*.—In the latter half of the 19th century, American colleges, both established and newly started, began to compete keenly for students and place great emphasis on size of student body. The best institution was often regarded as synonymous with the largest one. In this quest for students, many new colleges came into being. For example, in 1907, 85 colleges had yearly incomes ranging from \$1,000 to \$10,000; and 144 others had incomes

ranging from \$10,000 to \$25,000. Furthermore, paid advertising by colleges was common practice: Harvard initiated this practice in February 1870 when it bought a page in the *Atlantic Monthly*. More important, however, was the effect of competition for students on relaxation of entrance standards.

(6) Confusion about *waiving college admission requirements* to attract the admission of a greater number of freshmen.—Some colleges had no entrance requirements; others had extremely limited entrance requirements; still others announced formal requirements but allowed alternative methods of admission. Many colleges maintained their own preparatory schools—not as preparatory schools, but as part of the higher institution. Very few colleges announced high entrance requirements and lived up to them. For example, Harvard, Princeton, and Yale in September 1908 admitted the following percentage of conditioned (i. e., deficient in preparation) students to the freshmen class: 49 percent, 53 percent, and 58 percent, respectively.

(7) Confusion regarding *lack of sensible continuity in the educational system*.—Elementary schools and universities were established institutions before the public high school was developed, with the result that an orderly articulation between the three parts of the educational system was for many years if not impossible at least unknown. Colleges tended, therefore, to conduct their own institutions as separate units rather than as factors in a general system of education.

Did the Carnegie Unit succeed in resolving some of these confusions?

Yes, for (1), (2), (3), (4); partially, for (5); no, for (6) and (7). The Carnegie Foundation for the Advancement of Teaching played a major role in obtaining consensus and compliance among colleges and secondary schools on the use of their standard unit measure of high-school work. It did so in an amazingly short time. The definition of the amount of preparation which colleges ought to demand of entering students was widely accepted both by colleges and high schools shortly after it was stated by the Foundation and endorsed by the College Entrance Examination Board in 1909.

Did other commissions and organizations also play a major role?

A large role, but not necessarily a major one. From 1873 to 1909 numerous inquiries into school-college articulation called attention to the serious problems involved in improving college-admission policies, for example, Harvard Faculty Discussions (1873-1887); the Report of the Committee of Ten (1891-94); the Report of the NEA Committee on College Entrance Requirements (1895-99); the annual reports of the College Entrance Examination Board (1900-1910); and the reports published by regional, State, and university accrediting agencies. In

general, the effect of these reports was to alert the education profession to the complexity of the problems in college admissions requirements. But since their recommendations and resolutions were addressed to the profession generally, they failed of significant implementation.

How did the Carnegie Foundation achieve agreement among colleges so quickly?

In brief, it was a case of "money talks." Andrew Carnegie in 1905 gave \$10,000,000 to the trustees of the Carnegie Foundation for the Advancement of Teaching, the income from which was to provide retiring allowances for college professors in the United States, Canada, and Newfoundland. The trustees decided that these retiring allowances, or pensions, should be paid to the institution rather than to the person. In order to tell whether an institution could qualify to receive funds for their professors, the trustees had to define "a college," and in doing this, they found it necessary to define "a high school." Thus, from its beginning, the Carnegie Foundation for the Advancement of Teaching, whose function was the dispensing of pensions to college professors, acquired an equally important function of determining, and in a sense, compelling acceptance of "educational standards." It announced that if a college could not qualify as a "college" according to the definition provided by the Carnegie Foundation, it could not receive retiring allowances for its professors. Since few colleges by 1905 had their own pensions or annuity funds, it was financially imperative for many of them to qualify to receive the income of the Carnegie fund for their retired and retiring professors.

Did the Carnegie Foundation define a high school and college?

Yes, in both cases. It proposed that 14 units constitute the minimum amount of preparation to be interpreted as "4 years of academic or high-school preparation." (A unit here was defined as a college-entrance subject studied 5 periods weekly for the school year.) Also, the Carnegie Foundation defined a high school as a 4-year preparatory institution not connected with, or part of, a college or university.

It proposed that an institution be ranked as a college if it (1) had at least 6 professors giving their entire time to college and university work, (2) had a course of 4 full years in liberal arts and sciences, and (3) required for admission not less than the usual 4 years of academic or high-school preparation, in addition to the pre-academic or grammar school studies.

In commenting on these definitions, the Carnegie Foundation's First Report (1905) stated,

The terms college and university have as yet no fixed meaning on this continent. It is not uncommon to find flourishing high schools which bear one or another of these titles. To recognize institutions of learning without some regard for this fact would be to throw away whatsoever opportunity the Foundation has for the exertion of educational influence.

Was the Carnegie Foundation mainly responsible for the establishment of the Carnegie Unit in high schools?

Yes, largely so. There were two phases of its influence. (1) In the period from 1905 to 1908, the Foundation acted persistently to separate preparatory or high-school departments from the college program, and to gain professional acceptance of the 4-year high school as the standard high school. (2) The definition and adoption of the (Carnegie) Unit as a measure of high-school work occurred in 1909; it had an almost immediate effect on education at both college and high-school levels. Within a short time after 1909, practically all high schools measured their work in terms of the Unit defined by the Carnegie Foundation and approved by the College Entrance Examination Board. The action of regional accrediting associations in approving the Unit encouraged its wide adoption.

Was there any compulsion in the wide acceptance of the Carnegie Unit?

Not forcible compulsion; but to receive income from the Carnegie Foundation, colleges had to comply with the rules as established by the trustees of the Foundation. The President of the Foundation, Henry S. Pritchett, made it clear that he would permit no relaxation of regulations. To that extent, therefore, the Carnegie Foundation "compelled" colleges either to alter their policies and procedures or fail to gain and retain status. And the colleges "compelled" the high schools. However, a college was under no compulsion to apply for Carnegie Foundation retiring allowances. The fact is that a great many institutions did so. Consequently, the Carnegie Foundation became an accrediting educational agency.

A statement in the Second Annual Report of the Carnegie Foundation (1906) (2a) stated:

The true task of this Board is not to pass upon the merits of individuals but of colleges; to decide upon such educational standards as seem fair and wise, and then to proceed to admit to the system of retiring allowances such institutions as, complying with these standards, come within the provisions of the charter and the deed of gifts. In a word the Carnegie Foundation for the Advancement of Teaching must be first an educational agency before it can act wisely in awarding retiring allowances.

Who were some of the trustees of the Carnegie Foundation?

The first board appointed by Mr. Carnegie consisted of 25 members, 22 of whom were college presidents and 3 bankers. Among the first group were Woodrow Wilson, Charles W. Eliot, Arthur T. Hadley, Nicholas Murray Butler, David Starr Jordan, Jacob Gould Schurman, William Rainey Harper, and Henry S. Pritchett. As the years passed, the Board of Trustees continued to attract an equally distinguished group of leaders. This fact in itself was a persuasive influence.

Why did the Carnegie Foundation originally specify completion of the 4-year high school as the common basis for college entrance?

Because it was the prevailing type of high-school organization at the time. Practically all of the 10,213 public secondary schools reporting enrollments to the Office of Education in 1909-10 were of the 4-year type. In the Report for 1906, the Carnegie Foundation had adopted the definition of a college patterned after the one stated in the revised ordinances of the State of New York:

An institution to be ranked as a college must have at least six professors giving their entire time to college and university work, a course of 4 full years in liberal arts and sciences, and should require for admission not less than the usual 4 years of academic or high school preparation, or its equivalent, in addition to the pre-academic or grammar school studies.

In the Sixth Annual Report (1911) (2b), the Foundation stated: "The movement for the colleges to relate more directly to 4-year high schools and articulate with them is a mark of educational progress."

Although the Committee of Ten (1893) suggested that high schools should be 6-year institutions—grades 7-12—the recommendation was not widely accepted at the time. And the initial stage of development of the junior high school occurred after 1910. (The first junior high schools, incorporated in a 6-3-3 organization, were developed at Berkeley, Calif. and Columbus, Ohio, in 1909.) In passing, the number of secondary schools of the 4-year type increased from about 2,526 in 1890 to 6,005 in 1900 and thence to 10,213 in 1910. Thus the reason for the specification of the 4-year high school by the Carnegie Foundation appears to have been the fact that it was the customary type of secondary school organization in the first decade of this century.

Did the Carnegie Foundation expect that the unit recommended in 1909 would be widely adopted by colleges and secondary schools?

Probably so. The Foundation had worked closely with colleges, the College Entrance Examination Board, and other professional groups; it had reason to believe that with the endorsement of these agencies and their leaders the unit of work recommended would be widely adopted. For example, in the Third Annual Report (1907) (2a) President Pritchett reported:

The time has now come when the efforts which have been made independently in various parts of the country may be crystallized into one standard which shall be national in scope. We have passed through an experimental epoch out of which we should seek principles and conclusions which shall be practical and national.

And in the Fourth Annual Report (2a), he stated:

A large percentage of the colleges and universities in all parts of the country have now stated their requirements for admission in terms of such units. The College Entrance Examination Board in April of the present year (1909) adopted

the Foundation's numerical valuation of each of the subjects in which the board holds examinations. Similarly, the Association of Colleges and Preparatory Schools of the Southern States voted at its meeting (1909) in Chattanooga to adopt the unit as defined by the Foundation.

Why did the Carnegie Foundation set the standard of 14 total units for a completed 4-year high-school course?

It based this minimum standard on accepted practice in high schools recognized for their preparation of college-bound students.

In the Second Annual Report (1907) (2a)—

"The better high schools require pupils to recite on the average 4 studies daily 5 times a week. Assuming a study pursued for 1 year with recitations 5 times weekly as a unit, the ordinary high school would furnish in 4 years 16 such units. . . . Taking into consideration the need for reviews, for possibility of changes of study and other conditions likely to arise, 14 such units seem a fair measure of the work of the high school, and this is the standard which the board of trustees of this Foundation has adopted in its definition of a college. If a college requires 14 units for admission, it is maintaining the proper distinction between the work of the college and the work of the high school.

The element of time is not the sole criterion of the value of the unit. Each subject is valued at a certain specific number of units if the proper time has been devoted to its preparation, but its value cannot rise above that number of units no matter how much time the student has given to it. For example, no amount of time spent on plane geometry in excess of 1 year will give to that subject a higher standard than one unit.

The principle of measurement rested upon the fact that during each of 4 years in high school a student could pursue steadily 3 or 4 years' studies at one time, and would accumulate on the average 14 such units during a 4-year course. The chief advantage of using 14 units at the time lay in the fact that after their acceptance by the various colleges, they formed a common means of estimating the high-school curriculum. It was a common measure for comparing work done in one high school with the work done in another.

Influences and Criticisms

Did the Carnegie Foundation recognize the responsibility of the college to strengthen the high school?

The Foundation early called the attention of colleges to their rightful responsibility toward the high schools but chiefly with reference to fitting youth for college.

A section of the Fifth Annual Report (1910) (2b) is given to a consideration of this matter:

. . . the college has an enormous influence upon the development of the secondary school and may contribute markedly to its improvement by wise action . . . the hope for the college for the future lies in this improvement. In no other country of the world do the higher institutions of learning expend such prodigious effort on material not yet ready for their teaching as in America.

The report goes on to say that there are three practical steps for colleges to take in strengthening secondary schools—

1. They can try to articulate better with the high schools in the State and region in which they are located. "Articulation with the secondary school system of the State is so evidently the duty of the college that it would seem unnecessary to argue it."
2. They can extend to the secondary school a larger measure of freedom. "The college must . . . accept the judgment of the secondary school as to what is best for the girl or boy to study. The real question in which a college is interested is not, What prescribed studies are taught? but rather, Is the school a place where boys learn to think?"
3. They can substitute for the present highly varied and technical admission requirements simple tests which touch the knowledge of fundamental subjects and the possession of intellectual power, and then live up to these tests. "Hitherto entrance requirements have tended to promote . . . a cramming process hurtful alike to secondary school and college. What sort of test can be devised which will try the student's general knowledge of fundamental subjects and his ability to use his mind? . . . Students entering Oxford or Cambridge undergo no such detailed examinations as are exacted of students entering Harvard, Princeton, or Columbia. Their examinations are of such a sort that they cannot be met by a few months of cramming. . . . The practical question arises in the choice of fundamental studies, and in framing an examination that will test the mastery of a subject and not the efficiency of the coaching process. If the college wishes to secure this result, it must find some test of high school performance other than mere acceptance of a certificate or the passing of detailed examinations in which a large proportion of conditions is allowed."

Did the Carnegie Foundation make any early pronouncements regarding subject-matter content in the high school?

No. At the time the Carnegie Foundation proposed the Unit measure, it made no substantial comment on the content of subjects offered for college preparation. However, agreement with the subject-outlines of the College Entrance Examination Board was indicated. The two great educational committee reports in the 1890's made detailed recommendations on the scope and content of these major subjects offered in secondary schools:

Latin	Modern Language	Natural History
Greek	Mathematics	History and Government
English	Science	Geography

These recommendations are contained in the Reports of the NEA Committee of Ten (1893) and the NEA Committee on College Entrance Requirements (1899).

Is it true that the Carnegie Foundation was more concerned with higher education than secondary schools?

Directly, yes. Twenty-two of the 25 original trustees of the Carnegie Foundation for the Advancement of Teaching were college presidents. The endowment of the Foundation was intended to be used to provide retiring allowances for professors in colleges and universities. And on the whole the educational interest of the Foundation was first and primarily

concerned with higher education. But in defining what a college was, the trustees found it necessary to define first what a high school was. Also, in discussing college-high school articulation, they frequently expressed salient points of view regarding the function and the program of the high school. Indirectly, therefore, the Foundation dealt with many aspects of secondary school development, although the primary interest to which it addressed itself was higher education. The fact that college presidents are so highly regarded by American educators gave their ideas and suggestions great weight.

Have the Carnegie Foundation's recommendations affected higher education more than secondary education?

Probably the reverse is true when one considers the educational influences of the Foundation for the period from 1906 to the present. In the early part of that period, the Foundation's impact on colleges and universities was great. But college administration has through the years been free to make alterations in admission requirements because the colleges attracted leaders who were willing and able to assert their freedom, while secondary school administration has not had so high a degree of freedom. In the four and a half decades since 1909 there has been little change in the high-school's use of the Unit measure. From the high-school's point of view, therefore, even today the influence upon secondary education of the Carnegie Unit is far from weak.

Did the Carnegie Foundation recognize the potentially restrictive influence of the Unit it recommended?

The evidence is that it did so on several counts. It realized that it might be accused of dictating to the colleges, of standardizing educational procedures, of imposing a standard unit on secondary education. The following excerpts from annual reports of the Carnegie Foundation indicate that the trustees recognized the danger and how they felt toward potential criticisms:

- (1) The question now is whether without sacrifice of elasticity we can bring into orderly communication the several parts into which our (educational) system is broken up. Must an endowed university like Harvard or Vanderbilt, for example, look to special fitting schools, or employ special methods to get its clientele, or can it become part of an organization making towards a common end without surrender of individuality? . . . To establish such unity, we require a simple language which will convey a few fundamental facts. The unit used by the Carnegie Foundation aims to be such a symbol as between colleges, whether State or endowed institutions, and high schools, private or public. It is not mere mechanical standardization. It involves no limitation upon the freedom of the secondary school or the college. It is simply the effort to find a "counter." . . . The only part the Foundation has had in this effort has been to express in concrete form the actual usages of the colleges themselves together with the admirable results of the College Entrance Examination Board in unifying these usages. (*Third Annual Report, 1908*) (2a)

(2) It is clear that the use of some such unit or counter is an almost inevitable consequence of the acceptance of the 4-year high school as a basis of preparation for college. . . . In whatever way it is approached, the fact remains that the basis of the college preparation rests upon some 15 units of study which the high school can hope to furnish, and that any rigidity or mechanical standardization which ensues will arise not out of this fundamental fact, but out of the requirements of the colleges with respect to prescribed subjects for admission. (*Third Annual Report, 1908*) (2a)

(3) The practical question, therefore, is to choose such a unit as will fairly represent the secondary school work whether the school be in one section of the country or another. Such a unit enables the colleges to compare secondary schools, but it in no way hampers either the college or the secondary school. Its use will simply express uniformly and correctly that which is now expressed under many notations, a fact which renders difficult the comparison of one secondary school with another. (*Third Annual Report, 1908*) (2a)

(4) Such a unit being once accepted, the process of calculating in its terms college entrance requirements is natural and easy and, once more, involves no artificial restrictions upon the subjects chosen or the manner of their study. The number of units indicates clearly and at once the relation of the college to the high school, and the numerical value of each indicates its relation to the total high school scheme. (*Third Annual Report, 1908*) (2a)

(5) Of various agencies now endeavoring . . . to coordinate, strengthen, and differentiate our educational institutions, the Carnegie Foundation is only one. It is important that such agencies should be open to frank criticism. They are capable of harm as well as good. Large sums of money may be unwisely used; excessive centralization may bring evils quite as serious as excessive dispersion.

There is no present reason to be apprehensive. . . . The funds of the Carnegie Foundation represent only about 3 percent of the collected endowments of the colleges and universities in the United States. The only financial advantage which a college can receive is in the form of retiring allowances for its professors.

Something has been said of the standardizing value of such an agency. The word is not a happy one. There is a vast difference between standardizing and standard making. The Carnegie Foundation has not undertaken to furnish standards to the colleges—that would be standardizing. What it has done is to make clear the standards of the colleges themselves and to throw light on the deviations from the standards they themselves have set up. In the present educational confusion the danger that some subtle standardizing process will take the place of the colleges as standard makers and bring about a level of mediocrity is an extremely remote danger.

There is equally little danger of undue centralization. The Foundation has no direct coercive power. Its influence depends primarily upon rational persuasion. The trustees perceive that heretofore educational forces have been almost wholly centrifugal and individualistic. There is a distinct need at this juncture for an agency interested in organization, in coordination, in differentiation of parts, and in the definition of true standards. (*Fourth Annual Report, 1909*) (2a)

(6) In the effort to deal with these problems (college entrance requirements), the Foundation adopted the 4-year high school as the only common basis upon which colleges were likely to unite as a means for preparing for college, and it introduced a simple method (units) of estimating the contents of the high-school curriculum. . . .

The units have now served their main purpose. *They were never intended to constitute a rigid form of college admission, but merely a means of comparison.* Already the process in this matter has been so satisfactory that the general conception of college admission no longer contemplates a certain number of units, but the completion of a satisfactory 4-year high-school course. (*Seventh Annual Report, 1913*) (26)

(7) With the actual choice or enforcement of college standards, the Carnegie Foundation has little to do. These standards are set up and administered by the college faculties . . . The Foundation has never attempted to dictate to any college what its standards of admission ought to be. It has not hesitated, however, to call attention to the wide discrepancy which existed between standards of admission in the catalog and those enforced in practice.

The public in one way or another has come to believe that the Foundation has laid down certain arbitrary standards which it is seeking to force upon the colleges of the country. Mr. Carnegie has been sharply attacked for inventing the Carnegie Units, which with a diabolical ingenuity and clever use of money he is urging upon the universities. A committee of the NEA on normal schools at its last meeting "viewed with alarm" the efforts of the Foundation to control the educational standards of the country.

The setting up of objective standards lies wholly—or almost wholly—in the hands of school and college faculties. It is impossible to conduct schools and colleges without them . . . As for the word "standardizers," let us drop it from our educational discussion. Uniformity sometimes makes for freedom, sometimes not. But nobody in American education is in the standardizing business, and no educational trust is seeking to control education in the United States. (*Seventh Annual Report, 1913*) (26)

Was the Carnegie Unit criticized in the early years, 1909-1914?

There was a moderate amount of adverse criticism during these years because of a feeling that the Foundation was seeking to exert control over college and high-school standards. For example, President Jacob Gould Schurman of Cornell speaking before the National Association of State Universities in 1909 said:

An irresponsible, self-perpetuating board, whose business is to dispense money, necessarily tends to look at every question from the pecuniary point of view; it wants its money's worth; it demands immediate and tangible results. Will not its large powers and enormous influence . . . tend to develop in it an attitude of patronage and meddling? I make no exception of the Carnegie Foundation for the Advancement of Teaching . . . and speak with no prejudice, as I regard that endowment as the best thing any benefactor has ever done for higher education in America, and I have the honor of being one of the trustees. But I look with concern and anxiety on the influence of such corporations on the free and independent life of our institutions of learning and research. (8)

The authors have not been able to find evidence that any criticism came from representatives of secondary education during the early period.

Do most high schools and colleges still use the Carnegie Unit?

Data presented in *IMPROVING TRANSITION FROM SCHOOL TO COLLEGE* (9), a recent survey of college admission practices, indi-

cate that the majority of high schools and colleges still subscribe to the provisions of the Carnegie Unit as defined in 1909 by the Carnegie Foundation for the Advancement of Teaching.

Further, they indicate that approximately 60 percent of the colleges and 63 percent of the high schools still use the Unit method of evaluating pupils' work in high school. About half of the secondary schools enter no objection to a continuation of the Carnegie Unit. And about a third of the colleges report that they have actually abandoned its use.

There are geographical differences reported in the use of the Carnegie Unit. "In the East and South, 70 percent or more of the high schools find most colleges requiring the Carnegie Unit descriptions." In the North Central and Northwest regions, half and less than half of the high schools, respectively, find that they are required by the colleges to use the Carnegie Unit method.

On the whole, there is more opposition toward the use of Carnegie Unit on the part of high schools than there is on the part of colleges. But as yet, no large proportion of high schools is pressing for some type of credit counting other than the Carnegie Unit.

Comments of a college admissions officer, quoted by Traxler and Townsend: "We prefer this method, as convenient and in wide usage but with no notion that mere accumulation of units indicates adequate preparation." And comments by a dean of students in a preparatory school for boys, "The system (Carnegie Unit), convenient to the colleges though it may be in the mass production situation, is for our purposes far less desirable than one which accepts the school's judgment as to the pupil's readiness to do work at the level required by the individual college."

Why do so many high schools and colleges still use the Carnegie Unit?

One of the main reasons is that a satisfactory substitute has not been clearly defined and agreed on. Another is that the Carnegie Unit has been administratively convenient and therefore easy to operate. Many teachers and administrators believe that certain kinds of objective measures of achievement will eventually replace "the concept of serving time in the classroom," which is an essential feature of the Carnegie Unit. The practical problems faced in implementing this belief cannot be solved theoretically. The development of satisfactory tests and suitable norms to indicate pupil progress toward major educational objectives is by no means easy, and it cannot be assumed that such tests are likely to be accepted by parents, pupils, and community without question, even when their development is farther along than now.

Tests that measure broad abilities of individual pupils in reading speed and comprehension, language use, problem-solving, spatial relations, and so forth, have been in process of development for many years. They do

not have to be developed from scratch. But the difficulty is that many of these tests have been used experimentally or as a supplement to more traditional marking policies, and they have not gained widespread acceptance as criteria for judging the effectiveness of a pupil's high-school education.

Another reason is the confusion resulting from misunderstanding the function of the Carnegie Unit. It is and always has been a quantitative, not a qualitative, measure. It is entirely possible that immediate removal of the Carnegie Unit from educational practice would help very little toward establishing qualitative measures of a high-school education. As a matter of fact, no school now using the Unit is prevented from developing better qualitative measures of student progress. To claim that such measures cannot be developed until the Carnegie Unit is done away with completely is not reasonable. This is not to say that the Carnegie Unit aids in the development of qualitative criteria; it does not—and more will be said about this in part IV—but there is little logic to the point of view that the Carnegie Unit is a scapegoat. It does not prevent qualitative measures from being developed.

Still another reason is the lack of compelling force demanding a change. In 1909 the Carnegie Foundation, by its adoption of the Unit measure, buttressed as it was by disbursements for retiring allowances to college professors, actually galvanized schools and colleges to action. Today no such force is at work. There is no special motivation offered for agreement on a substitute for the Unit and for adoption of that substitute. The regional accrediting associations have produced no consistent leadership to effect a recasting of the role of the Carnegie Unit. Individual State and regional leaders have suggested improvements and there has been considerable discussion of the problems involved, but no action programs have been launched. Therefore, progress toward a substitute involves the slowest sort of approach—that of seeking common areas of agreement regarding a substitute for the Unit on the part of colleges and secondary schools accustomed to unilateral action.

Does the rapid increase of high-school enrollment since 1909 seem to argue against the continuing use of the Carnegie Unit?

Logically one might believe so. Actually it is doubtful if increasing enrollments alone have caused any great change in the continuing use of the Carnegie Unit by high schools. It is probable that other factors operate to outweigh the factor of enrollment growth.

The proportion of youth going to public high school (grades VII-XII) has increased from about 915,000 in 1910 to over 7,500,000 in 1952, while the total population 14-17 years of age has increased from 7 million to only 8 million during the same period. In 1910 high schools reported to

the Office of Education offerings in 20 major subjects or subject areas, while in 1949 they reported 52 such subjects or subject areas.

Diversification of subject offerings, like the tremendous growth and changes in enrollment, would appear to urge a reconsideration of the role of the Carnegie Unit by American high schools. To a slight extent some reexamination and reconsideration have occurred, but the Unit pattern persists strongly even in the face of marked educational change.

What means supplementary to the Carnegie Unit have been used by colleges in assessing candidates for entrance?

Traditionally there have been two—(1) entrance by examination and (2) entrance by certificate (high-school diploma). In 1910 the College Entrance Examination Board conducted a study on 2,000 students who took its examinations. Findings showed that more than half of these applicants were not able to be rated as high as 50 percent and that one-fifth failed to the extent of about 1 year of high-school work. Of course, through the years the College Entrance Examinations have been revised to meet new conditions. In the early days students were examined in a large number of individual subjects. Later on a new plan for reducing the number of subject fields was devised so that a candidate for college entrance might take four comprehensive examinations instead of 16 or 17 separate subject examinations. In the 1940's this plan was replaced by a combination of objective achievement and aptitude tests, which represent current practice today. (See ch. IV.)

Entrance by certificate: Data prepared by the Carnegie Foundation in 1909 revealed that a large percentage of students admitted to college by certificate had failed to fulfill the requirements set forth by institutions of higher learning. Under this system the efficiency or inefficiency of the student's preparation for college is not tested with exactness, the reports of the Foundation say.

State-supported colleges and universities increasingly have supported the plan of admission by certificate of high-school completion. However, they often managed to maintain certain controls by seeing to it that high schools within the State offered specified subjects in their college-preparatory curriculum. Such high schools would then be approved by the State institution of higher education or State department of education. Furthermore, candidates having subject-matter deficiencies might be admitted, but would have to make up their deficiencies after admission. Although State institutions have found it frequently necessary to admit all graduates of accredited high schools within the State, they have not generally been required to keep the students if they cannot do the college work satisfactorily. Thus a rigorous selection procedure commonly occurred during the freshman year.

—United States Bureau of Education, *College Entrance Examinations*, 1910

Admission of students to college by examination and by certificate did not avoid use of the Carnegie Unit for subjects completed in the high-school course, but these procedures were frequently used as supplementary to the Unit measure. This topic will be dealt with in more detail in Chapter IV.

Current comment on and criticism of the Carnegie Unit

There is today a great deal of comment on and criticism of the Carnegie Unit, mainly by representatives of secondary education. They point out that the effect of this Unit has been to restrict and hinder the development of a functional high-school program. Though complaints against the use of the Carnegie Unit have been made by educational writers and associations with increasing frequency, few of them have described the type of substitute that would work. An example of the criticism found in one textbook on secondary education declares:

There is ground for disturbance in the fact that a means for standardizing colleges (vis, the Carnegie Unit) should have come to be so significant in the organization of the curriculum in the schools below and in some ways a cramping influence on it. This cramping influence is found partly in the necessity of administering the curriculum in counters of equal magnitude as measured by the time expended. The hindrance involved did not become so apparent while education was thought of as merely subject matter to be learned; but school workers have grown increasingly aware of it as they have endeavored to administer instruction in terms of the needs of life and living, which we may be sure will not . . . break conveniently into units of equal magnitude. The hindrance extends also to efforts to effect a satisfactory and desirable integration of experiences, which often calls for disruption of conventional subject-matter boundaries. It is certain that the inflexible Carnegie Unit must give way to some method of measuring progress more in harmony with emerging concepts and practices. (5)

Examination of the practices based upon the Carnegie Unit reveals certain fallacies. For example, 16 Units earned at a given high school are generally looked upon as representing much the same scholastic achievements as those earned at another high school. It is obvious that the level of achievement represented by diplomas earned in different schools or by different students in the same school on a quantitative basis cannot be qualitatively comparable.

Increasingly the diploma means only that a pupil has attended high school for 4 years, and that classes have met a certain number of minutes per day, periods per week, and days per year. The course content is likely to be different, the quality of instruction depends largely on the individual teachers, and the achievements of the various pupils vary with their scholastic abilities and personal qualities. The actual work covered and the scholastic achievements represented by the same time allotments vary greatly. All this casts grave doubts upon the high-

school diploma and the Carnegie Units upon which it is based. Without other specific and supplementary information, neither the colleges or employers of a high-school graduate can know what he has learned or what his competencies are merely by inspecting his diploma or rank in class.

The trouble with the Carnegie Unit, therefore, is that it interferes with good education. Some of the ways that it adversely affects secondary education are indicated briefly:

- (1) It lends prestige to those subjects acceptable to colleges in terms of entrance Units, and discriminates against other subjects excellent in their own right but as yet unacceptable for Unit measure.
- (2) It considers of equal magnitude all subjects for which classes meet an equal number of minutes per semester, provided outside pupil preparation is required. Five periods of English is equal to 5 periods of mathematics, etc.
- (3) It tends to make inflexible the daily and weekly time schedules of the school, for the Carnegie Unit nourishes the idea that a class should meet one period a day five times a week.
- (4) It restricts the development of a more functional curriculum based upon students' abilities, interests, and life-needs, because it has been difficult for the high school to obtain units of credit acceptable to the colleges in certain more functional subjects.
- (5) It measures quantitatively experiences in different subjects and in different schools and counts them as similar in outcome.
- (6) It ranks pupils in graduating class despite the fact that few of them ever have exactly the same program of studies and despite the fact that seldom are all the years in school counted in the ranking of the pupil.
- (7) It measures a high-school education (and diploma) in terms of time served and credits earned by the pupil.

Many educational leaders are alert to the restrictive influences of the Carnegie Unit. They are aware of the difficult problems growing out of widespread use of the Unit today. They recognize that the influence of the Carnegie Unit has resulted in a devotion to *quantitative* measurement of high-school work, with less attention to *qualitative* appraisal. As a consequence, the role of qualitative evaluation in assessing high-school work will have to be given much more emphasis and adequate time will have to be devoted to its implementation.

Certain high schools have found and are discovering ways to circumvent in part the rigid time requirements of the Carnegie Unit and to place the educational development of pupils *above* the quantitative requirements of time serving. Some of these promising practices will be reviewed and assessed in Chapter IV. The procedures to be described will be supplemented by a variety of suggestions for action based upon the findings of research, outcomes of experimentation, and experience and study of the authors.

CHAPTER III

The Present Role of the Carnegie Unit In Secondary Education

A Case In Point and Comments

ALMOST EVERY HIGH SCHOOL in the country states in units its subject offerings and its graduation requirements. Somewhere in the pages of a pupil's handbook, curriculum bulletin, or program of studies there will be a statement, such as the following excerpt from an attractive bulletin issued by a large high school in the Midwest (13):

Definition of Terms

CREDIT—One credit is given for completing a subject which meets five times a week (per semester) and requires preparation outside the classroom.

UNIT—Two credits.

SOLIDS—Subjects in which the class meets five times a week, requires preparation in addition to the class hour and grants a full credit.

NUMBERING SYSTEM—Number indicates the semester the subject is usually taken; e. g., English III, first semester of the sophomore year.

Notes on College-Preparatory Course

The admission requirements of different colleges vary. Therefore, if possible, a student should choose his college early in his high school course. He can then, with the assistance of the class counselor, map out a plan of high school subjects to meet the requirements of the college he plans to attend.

Students who plan to enter an engineering profession should complete three units of mathematics and two units of science.

Both physics and chemistry are recommended for students who expect to follow an occupation in the science field.

Requirements for Graduation in the College-Preparatory Course

Subjects	Units
English.....	1 3/4
Social Studies.....	3
Mathematics.....	1 2/4
Science.....	1 1/2
Foreign Language.....	2
Physical Education.....	1
Elective.....	2 1/4
Total.....	16

¹ One-half unit may be omitted by passing exemption test. Fifteen units must be solids; that is, subjects granting full credit.

Requirements for Graduation in the General Course

<i>Subject</i>	<i>Units</i>
English.....	3½
Social Studies.....	3
Mathematics.....	1½
Science.....	1½
Commercial.....	1
Physical Education.....	1
Electives.....	4½
Total.....	16

¹ One-half unit may be omitted by passing exemption test. Majors and minors: Subjects to make a total of 33 credits are required for graduation. English and Social Studies provide the two required majors. Electives must be chosen in such a way as to make two minors in subjects other than English and Social Studies. A minor consists of four credits taken in any of the following subject fields: mathematics, foreign language, science, commerce, home economics, art, or printing. (13)

The bulletin from which these statements were taken is, in the judgment of the writers, a well-prepared brochure ranking above the average issued by the high schools in various parts of the country. In stating its graduation requirements in terms of credits and units, it is typical of hundreds of handbooks the authors have examined. When they first enter school, American high-school pupils are notified that to satisfy graduation requirements a certain minimum number of units or credits must be attained, and that this total is accomplished by adding together the particular units or credits stated beside each subject offered in the curriculum pattern.

Though many subjects have been added to the high-school curriculum, and curriculums have been renamed since 1909, it is abundantly clear that the emphasis upon units and the schematic arrangement of credits for subjects required for graduation have changed little if at all since then. While handbooks emphasize that pupils should demonstrate competence in subject fields, they make the acquisition of a certain number of credits a necessary condition for graduation. Administratively, the quantity of work takes precedence over the quality in every instance. Credit-chasing thus becomes serious business for the pupils; when they garner sufficient units they can be graduated from high school. What they learn in subject fields or their ability to use the knowledge gained seems actually less important. Is it any wonder that students come to think of units and credits as being the major purpose of high school?

The assignment of credits and units to high-school subjects and to graduation requirements has been in vogue since the establishment of the Carnegie Unit in 1909. Are these credits effective or ineffective in helping high-school youth develop educational competence? That is the basic question with which this bulletin is concerned.

There is no question as to the educational respectability of the Carnegie Unit. But there is serious question as to its influence on the quality of education. Before the adoption of the Carnegie Unit, the dominant purpose of high-school education was acknowledged to be the development of demonstrable competence on the part of the students. And though that purpose is still regarded with respect and support, the widespread use of the Carnegie Unit has had the effect of compelling a quantitative rather than qualitative concept of secondary education. A student applying for admission to many colleges does not necessarily have to demonstrate his ability to read, write, reason, and substantiate assumptions. But he *must* acquire a certain number of units in his high-school course, the sum and distribution of which will be acceptable to the college he wishes to enter. Credit-chasing is not confined to the high school only; it extends to the collegiate program as well, but the habit is developed in the high school.

There is no evidence in research or historical analysis to support the notion that the Carnegie Unit, and the system of credits associated with it, has emphasized the development of fundamental skills and competencies on the part of high-school pupils. It is evident from a review of educational conditions both before and after the establishment of the Carnegie Unit that the credit system now used widely operates to place *less* emphasis on a student's gaining demonstrable educational competence. The restrictive influence of the credit system on education was admitted without question by President Henry Pritchett, the first executive officer of the Carnegie Foundation for the Advancement of Teaching, who agreed that quality not quantity of education is the only justification for education at all. Thus, the argument that the credit system is the traditional means for the achievement of educational competence and fundamentals does *not* appear valid. To facilitate a major purpose of education—the development of competence in learning—it may be necessary to *supplement or supplant* the credit system as a basic measure of high-school work.

Findings of a Recent Study

In furthering its service to schools and colleges in the fields of testing, guidance, and cumulative records, the Educational Records Bureau, in 1949, sent questionnaires to about 1,100 colleges and to 2,000 representative public and independent high schools having graduation classes of 25 or more in 1946. Replies were received from 55 percent of the colleges, 55 percent of the public high schools, and 62 percent of the independent schools. The questionnaires inquired pointedly into the use of the Carnegie Unit; the extent, type, and prevalence of subject requirements; and the years of high-school work required for college entrance. The findings were tabulated and analyzed in the report issued. (9)

It is not possible to discuss these findings in detail. Briefly, the replies to the questionnaires showed that—

Whatever restrictive and controlling influence colleges have over secondary schools is exercised largely by means of unit and course prescriptions. So long as a large proportion of American colleges make definite prescriptions for approximately two-thirds of the units of high school study for college-preparatory pupils . . . the high schools are going to be under a good deal of control from above. This control is not, in the main, irksome to high schools . . . for it automatically settles many of their problems in regard to the organization of instruction. But, at best, it fails to encourage progress in the development of better methods in the educational programs of numerous high schools.¹

The report goes on to state that educational practices frequently persist after the conditions which originally produced them have changed, and after better procedures have been evolved. It found that outmoded practices continue on because of custom, inertia, and resistance to change.

The (Carnegie) unit system of recording was never intended to be more than a rough index of what the pupil learned. As time went on, and as tests and other evaluative procedures were developed, there was no longer any real need for counting units. As many educators pointed out and as this committee (of the Educational Records Bureau) itself urged, by the early 1930's the unit system of course accounting could well have been superseded by more modern and more valid procedures. Nevertheless, educational institutions the country over still think largely in terms of units and still order a considerable segment of the educational life of each student around this concept.

The report recommended that the use of the Carnegie Unit be discontinued, but admits that it cannot be discarded until a satisfactory substitute is agreed on. One of the weaknesses of the Carnegie Unit is its acceptance of the idea that education is achieved by "bits and pieces."

The question is whether the concept of serving time in the classroom, which is inherent in the Carnegie Unit, might better be replaced with a more meaningful concept based on objective measurement of achievement. If satisfactory tests of the major educational objectives can be devised and used with suitable norms, then appraisal of student preparation may appropriately be based, to a considerable extent, on measured achievement.

Such tests should not deal with facts only but should aim to appraise broad abilities such as the use of language, reading ability, quantitative thinking, and logical reasoning.

The report then goes on to give attention to subject-matter requirements. It states that many high schools gear their college preparation of students to satisfy the most conservative college requirements. This means that high schools tend to be extremely cautious in making any

¹ Quotations reprinted by permission from *IMPROVING TRANSITION FROM SCHOOL TO COLLEGE* by Arthur E. Traylor and Agatha Townsend, New York, Harper & Brothers, 1933.

changes in the curriculum for college candidates. In regard to course names, it is evident that—

The pattern of college entrance requirements has changed very little since the grandparents of the current generation of students were in school, although the content and the methods used in those courses may have changed. Inertia and reluctance to do the hard work necessary to functionalize the curriculum are believed to be primary reasons for the maintenance of outmoded practices in secondary schools today.

A Review of Its Present Role

A review of the history of the Carnegie Unit and its present role in American secondary education has shown that this device grew out of the needs of the colleges for a standard means of measuring the progress of a youth's education from his entrance into high school to his graduation. It has also shown that the Carnegie Unit is so widely used as to be almost universal.

The evidence presented seems to indicate that the development of the Carnegie Unit served to create order in the American system of secondary and higher education. Originally the sole task of the high school was to prepare the youth for college. The transition from the secondary school to the college had been an indefinite one. Some colleges had depended primarily on written examinations of the type developed by the college-entrance examination board which began its operations with the beginning of the present century. The examinations based chiefly on the knowledge of certain facts were considered capricious and more or less unreliable as a means of gauging success in college. Another common process of admitting youth to college was a practice which began with the origin of the American colleges, namely, the interview with the student by the president of the college or by his tutorial staff.

The establishment of the Carnegie Unit reflected the basic philosophy that youth needed to give evidence that he had mastered certain selected bodies of knowledge prior to college entrance, and that these bodies of knowledge could, through a process of exposure to them for specific units of time, produce more or less uniform results. Despite the unwarranted assumptions involved, these time-serving units brought more order into the college-entrance requirements picture than had previously existed and served reasonably well to screen out youth who were deficient in entrance preparation.

The Carnegie Unit is now, however, under serious question for many reasons. The objectives of the high school have changed. College preparation is only a small part of the total purposes of the secondary schools. More and more generally, the task of the high school today is to prepare youth for the manifold facets of modern living. Youth is basically not graduated into the college, but into adult life. Moreover, recent psychological research has shown that units of subject matter are not of equal

difficulty, that youth enter high school with varying degrees of subject-matter mastery already achieved, that some youth learn the required subject matter much faster than others, and there are wide differences in one type of subject matter as compared to another. It appears, therefore, that the original assumptions upon which the Carnegie Unit was based have become invalid. It follows that the Carnegie Unit should be reexamined, that ways and means of supplementing it must be found or that its replacement may have to be seriously considered.

There are, of course, those who defend the status quo as constituting best practice. The process of dividing subject matter into nicely organized segments possesses a degree of definiteness which appeals to many as simple and desirable. To them the process is familiar because they have never known any other. It is easy to make a master schedule of periods, classrooms, and teachers when every unit is regarded as comparatively equal¹ one to another. Curriculum makers find this an easy basis upon which to plan subject matter; teachers find it simple to divide the textbook or other course materials into a given number of classroom minutes for a given number of days. Indeed many school administrators, curriculum-makers, and teachers have given little thought to the problem of organizing high-school instruction on any basis other than the Carnegie Unit. When the basic assumptions upon which the Carnegie Unit is based are questioned, they tend to come to the defense of the traditional device. If certain other weaknesses of the Carnegie Unit, such as credit-chasing are pointed out, they readily acknowledge their presence and express a pious hope that something better can be done. But since they have seldom considered the problem of devising better schemes they are content to carry on with what they have.

Yet even a superficial examination of the American system of education reveals that a counter for measuring educational progress similar to the Carnegie Unit has never been employed in the elementary schools. Here the grade is considered as the unit for measuring a year's work. To be sure, for many years the course content of a given grade—reading, writing, arithmetic, history, nature study—was considered to consist of more or less uniform quantities and with considerable emphasis upon equal mastery by all pupils with failure as the penalty for those who could not measure up. Extensive changes, however, have been made in this graded system. Evaluation and promotion are more and more based upon individual pupil capacities and rate of maturation. As a result, the chronological age implemented by infomation on other types of maturation has been given more weight in developing sound pupil-appraisal practices in the elementary schools. If these methods of gauging the learning progress of youth are successful in elementary schools without the aid of a counter such as the Carnegie Unit, similar instruments and devices can no doubt be developed for use in the secondary schools.

This approach to the problem should be given much more weight and attention than it has received thus far.

From the foregoing it is evident that this report must now concern itself with the ways and means proposed or under experiment whereby the American educational system can better gauge the progress of the educational development of youth from high-school entrance to high-school graduation. The next chapter will discuss and describe the purposes and instruments which have been devised as a supplement to, or substitute for, the Carnegie Unit, and will present data having implications for a better solution of the manifold problems and policies of pupil appraisal during the period of a secondary education.

CHAPTER IV

Efforts To Improve or Displace the Carnegie Unit

THE ORIGIN of the Carnegie Unit, and its role through the years, in measuring the progress of the pupil through the high school, have been reviewed in the foregoing chapters. It has been shown that the circumstances which gave rise to this time-serving conception of secondary education were not only concerned chiefly with the problem of fitting youth for college, but were based upon such repudiated concepts as mental discipline, transfer of training, and selectivity as to who shall be educated in these schools. Those creating the Carnegie Unit did not fully foresee that the high school would ever be concerned with preparing youth for life rather than for college or that it would involve the many rather than the few. This Unit has obviously not been able to adapt itself fully to the task of realistically measuring and recording the progress of youth in all of the manifold purposes of modern secondary education.

It is, of course, relatively easy to point out the defects in this time-honored and widely used device. But this report on the Carnegie Unit could scarcely be justified if it should limit itself to a review of its history and its far-reaching role in education past and present. Certain questions arise which must be answered. If the Carnegie Unit does not serve modern secondary education as fully as it should, what can be done about it? What newer ways and instruments are there which would better measure and record pupil progress through the high schools? Where may high schools concerned about shortcomings of the Carnegie Unit look for help? Have the substitute schemes proposed been tried out sufficiently and found workable? Can guidelines or principles be set forth to help high-school staffs to devise plans which will serve them and their charges better than the Carnegie Unit?

The remaining pages of this report will discuss how the use of the Carnegie Unit can be improved, supplemented, or replaced with something better. As was shown in the foregoing parts of this report, many aspects of secondary education will have to be involved. No single answer can be given. Instead, a number of developments will be described and examined for helpful ideas. Finally, certain arguments for and against the Carnegie Unit will be presented with a view to stimulating further discussion of this whole complex problem.

It is fully recognized that in the last analysis the answers to the various questions raised will need to be worked out in each school or system of education interested in the various issues involved. Local studies will have to be undertaken involving all levels of education as well as the general public. Partial replacement of the Carnegie Unit and various

means of supplementing it will probably have a better chance of effecting sound improvements than radical changes.

Promotion Methods in the Elementary Schools

One of the most logical approaches to the improvement of measuring learning progress in the secondary schools by means other than the Carnegie Unit is to study more closely the procedures used at the elementary level. Increasingly secondary education is now regarded as an integral part of the "common school" system. Its aim today is not only to enroll the children of high-school age but so to improve the program as to meet the needs of all. This means that secondary education is seeking to do more than prepare youth for college. It accepts as a "must" the task of continuing the educational development of every youth no matter how limited his talents. Like the elementary school it recognizes that it must take youth of given age groups as they are and further their education in the tool subjects, in health and safety, in home and family living, in civic and economic competence, in getting and holding a job, in moral and spiritual relationships, and in all the other needs of daily living.

It is significant to note, as pointed out above, that the Carnegie Unit was never employed in the elementary schools as a means of measuring learning progress. Originally these schools promoted pupils by "readers," that is, progress through the grades was basically geared to the development of reading skills. Next these schools promoted the pupils by grade levels; all essential subject matter and other learnings were considered together rather than as separate entities. With the wider recognition of individual differences, the promotion standards in these schools moved toward chronological, mental, and social maturation. These schools are now increasingly concerned with keeping together those of similar physical and social development and needs, and thus to reduce the risk of maladjustment resulting from excessive scholastic acceleration or retardation.

The processes for evaluating pupil progress through any given year or grade of the elementary school have always depended for their success chiefly upon the close and intimate relationships existing between the teachers and pupils. When a teacher lives and works with the same group of pupils all day for a year or more she comes to know them and their parents well. There is time to learn their individual capacities, interests, needs, aspirations, difficulties, and problems. Even such significant factors involved in their school progress as the home, parent, and community environment become familiar to the teachers of elementary children. All of this means that not only are these teachers in a better position to observe and judge the daily educational development, successes, and failures of the pupils in their charges, but such periodic examinations and similar types of objective evaluation as are used become a natural part of a normal, friendly pupil-teacher relationship. In this

setting such time-serving measures of educational progress and standardization as the Carnegie Unit never gained a foot-hold. More progress has also been made in the elementary school to overcome meaningless symbols of marking than in the secondary schools.

To be sure secondary education with its emphasis upon subject-matter departmentalization, its many teachers and its fragmentation of the school day and year, presents learning situations very different from those of the elementary school. But need these be so different? Are these trappings borrowed chiefly from the college level of education essential or desirable in modern secondary education? Some fundamental but tardy changes to effect closer pupil-teacher relationships are now taking place in the daily and the over-all programming of secondary school pupils—longer periods, core programs, more emphasis on homeroom programs and teachers, intensive study of one or two subjects at a time, and the like.

Any efforts to re-examine the use of the Carnegie Unit could profitably restudy the pupil appraisal and promotion practices employed in the elementary schools or, better yet, throughout the entire system of elementary and secondary education. Continuity of instruction and progress rather than segmentation should be the goal. The elementary schools are not only close at hand for study by the secondary school leaders, but in many cases these leaders and their staffs already have had experience in these schools. There would seem to be much promise for making desirable changes in the use of the Carnegie Unit through closer identification of the secondary schools with the elementary schools. This could do much to off-set the influences upon the high school of the fragmented, credit system borrowed from the colleges.

To be sure, there are those who advocate at the high-school level a radical break with the fundamental objectives and procedures used in the elementary school. They want the high schools to stress the academic, subject-centered type of program stressed in the colleges. They appear willing to emphasize drill, homework, and compulsion to bring all youth up to a common level of performance. If large numbers of pupils are unable to achieve this level of performance, or if they can profit little from the courses prescribed, they have the choice of repeated failures or dropping out of school. What happens to such youth then is of small concern to these advocates just so long as the preconceived standards of learning are maintained. Such a policy is obviously contrary to making secondary education available to all.

Qualitative Appraisal Through Examinations and Tests

The Role of Testing Elsewhere

The use of formal examinations and tests has both preceded and supplemented the Carnegie Unit as a means for measuring pupil progress through the secondary schools of the United States. In Europe and in other lands

where comparatively few youth are selected for this level of education, rigid examinations, both oral and written, are given when the pupil is chosen for such education at 10 to 12 years of age. Similar examinations recur from time to time as secondary education progresses. Since their purpose is to select the most capable boys and girls, and weed out those who for various reasons are not considered desirable candidates for higher education, the examination system is rigorous, impersonal, and final in character. It follows that where such examinations are emphasized that they too often come to be regarded as an ordeal to be feared and avoided, if possible. Moreover, such examinations tend to influence both the content of the courses taught and the methods of teaching employed. Indeed, they tend to cast over the entire system of education an authoritarian influence alien to American principles. Schools under such an influence usually teach what they test and live under the shadow of this influence.

Because the secondary schools of the United States have borrowed freely from Europe it is to be expected that the examinations and testing instruments and processes used there should significantly influence those used in secondary education here. Fortunately they have had more of a nuisance than real value. Secondary education here has never been so highly selective. The aim has increasingly been to serve all youth rather than squeeze them out of the high school. The tremendous variations in learning capacities and rates have long been recognized, and the idea of demanding of all the same mastery of subject-matter or skills has been regarded as inconsistent with the fundamental purposes of secondary education.

In the best high schools of the United States examinations and tests have not been regarded as "the court of last appeals." They have been used not to bar youth from entering high school or to cast them out, but to do a better job of teaching, to understand them, to note and guide their progress, and to discover their strengths and weaknesses. They have also been used to supplement the use of the Carnegie Unit in determining qualifications to enter college.

Examinations and tests in the United States

There have always been leaders in American secondary education who have insisted that greater use should be made of comprehensive examinations and tests and less emphasis given to such arbitrary and quantitative measures as the Carnegie Unit. These leaders have contended that it is possible to devise and use tests in such a way as to measure learning progress more objectively and to do this without creating the arbitrary conditions prevailing where subject-matter tests are used exclusively. The benevolent use of objective tests and scales has a long history in the United States. This development is too well known to need elaboration here. The citing of some highlights may, however, be helpful.

For many years the secondary schools have used examinations along with the Carnegie Unit to gauge the pupils' progress toward graduation.

In most States (32), since near the beginning of the public-school system, such examinations have been used both to evaluate the effectiveness of the schools and to gauge pupil progress. For pupils attending the smaller nonaccredited high schools, or studying by themselves, the State departments of education developed and operated examination programs to create credits in the major fields of subject-matter. These credits were then used in lieu of Carnegie units. Such examinations were also used near the time of high-school graduation to aid the local schools in awarding credits and to validate their work. The New York Regents examination and the Iowa Every Pupil Test are well-known examples.

Another development which weakened the position of the Carnegie Unit in the support long given it by the several regional accrediting associations, was the "Evaluative Criteria" devised and published in 1940 by the Cooperative Study of Secondary-School Standards (22). These were improved and revised in a report published 10 years later. These reports placed greater responsibility than before upon studying locally the progress of youth through the high schools and the effectiveness of the instructional program. Not only were the secondary schools urged to set up educational objectives for each high school, but more and more emphasis was given to the setting up of such objectives for each pupil in relation to his peculiar needs and his individual capacities.

Another far-reaching effort to supplement and improve the measuring of progress in the high school was the work of the College Entrance Examination Board (25). Through the years this Board has exerted a wholesome influence on the appraisal practices of schools of Eastern United States and the larger cities, especially with a view to college relations. The CEEB continues to provide leadership in the making of better high-school tests and in giving and scoring them.

Originally the CEEB grew out of the need to introduce a semblance of order into the confusion caused by lack of cooperation among colleges on admission policies. From 1869 when Charles W. Eliot became President of Harvard until 1900 when the CEEB was founded, he gave leadership to discussions on college-entrance procedures at national and regional conferences. Frequently these discussions became as bitter as they were frustrating to such men as Eliot and Nicholas Murray Butler, the two men who did most to create the CEEB.

The CEEB was composed of member colleges, not secondary schools, but its concern was primarily with the latter. It attempted to bring about uniformity in college-admission examinations as early as 1901 when separate essay-type, subject-matter examinations were offered in 9 different subjects to some 973 candidates. In 1901 the CEEB had a budget of about \$6,000; by 1954 it had grown to \$1,083,000.

Cooperation between the CEEB and the Carnegie Foundation for the Advancement of Teaching began early. Indeed, from 1906 to 1910 the president of the latter organization was invited to attend all CEEB

sessions. In 1909 the CEEB unanimously agreed to the standard defined by the Carnegie Unit and endorsed its immediate use by its member colleges. However, this organization adjusted its philosophy and its tests to the changing times. Up to 1916 it multiplied the number of its tests with the proliferation of subject-matter courses until as many as 18 separate examinations were offered. After this date it adopted a "New Plan" of comprehensive examinations as an alternate procedure. This plan continued the essay-type of examinations, but cut the number to four for any one candidate and gave a broader interpretation to any given field. The New Plan Comprehensive Examinations symbolized a shift in educational thought—"An evolution from rigidity to flexibility, from narrowness to breadth, from emphasis on content to emphasis on choice (25)." The new choice in subject-matter examinations gave less emphasis to memorization and more to intelligent reasoning and the ability to correlate materials in broad fields of study.

Other far-reaching improvements were made over the years by CEEB. In 1926 the Scholastic Aptitude Test was initiated to measure such neglected fields of learning as ethical behavior, mental alertness, functional use of foreign languages, and problem-solving. In 1934 this organization recommended "irradication" of the "obsolescent hard and fast" Carnegie Unit as representing exposure to a course for 120 clock hours rather than a measured amount of achievement. In 1942 the essay-type of question gave way to (a) Scholastic Aptitude tests and (b) other objective tests of selected common elements taught in the various high schools of the country. Such objective tests were prepared not only for candidates seeking college admission, but for the V-12 Navy program, for national scholarship contests, and in 1951 for draft deferment.

Several organizations other than the CEEB have also long been working on the problems involved in finding better procedures and instruments for gauging the pupil's progress through high school, his preparation for college work, and his selection for college entrance. It was a natural development, therefore, that efforts should be made to bring about closer understanding and cooperation among such agencies. In 1947 these efforts took tangible form in a merger of the testing activities of the American Council on Education, the Carnegie Foundation for the Advancement of Teaching, and the CEEB. A new organization resulted, known as the Educational Testing Service (21). While each of the cooperating organizations at the beginning reserved the right to withdraw from this joint effort on a year's notice, none of them has done so. Indeed, ETS has already made such significant contributions toward better, more exact, and comprehensive ways and means of appraising progress in learning that its continuance is assured. Developments already begun by ETS, and those projected, promise to overcome and finally replace entirely the faulty methods which have grown up around the Carnegie Unit.

Thus the CEEB and similar organizations, although primarily concerned with college admission problems at the beginning, have played a major role in developing comprehensive examinations which, when fully developed, will eventually diagnose accurately not only the individual high-school graduate's scholastic achievements but also his capacity to succeed both in college and in life. The universities and colleges are cooperating in these efforts. Insofar as these efforts succeed such examinations can supplement and largely displace the Carnegie Unit.

The direction of the emphasis in the several developments here reviewed has consistently been away from concern with the subject-matter fields as such, which were formerly regarded as constituting the essence of secondary education. More realistic efforts are now being made to develop measuring instruments which will more accurately evaluate all types of desirable learnings. The following major principles and objectives for more comprehensive evaluation programs in the high schools are inherent in many of the proposals of such leaders in this field as Diederich, Dressel, Lindquist, Segel, Smith, Traxler, Tyler, Wrightstone, and others:

1. The plan must reflect the basic educational philosophy of the school.
2. It must be focused on the local objectives and purposes of the school for which it is made.
3. It must involve as many of the staff as possible.
4. It must be continuously revised and kept up to date.
5. It must use the best measuring techniques available.
6. It must involve a variety of tests and other evidences of pupil growth and development.
7. It must be as closely as possible integrated with the elementary school and also be concerned with the pupil's educational future.
8. It must be carefully organized and must follow a definite schedule.
9. Results of all tests given must be recorded cumulatively in a centralized system and become available to all persons involved in the instructional program.
10. The pupils and the general public must come to know the plan and understand why it is needed and how it works.

High-School Credit for Nonclassroom Learnings and GED Tests

The problem of evaluating what youth already knows before beginning a given course of instruction has always been of concern to good teachers in both high schools and colleges. They have not only wanted to know where and how the unknown could best be tied to the knowledge the individual learner already possessed when a course of instruction is begun, but they have sought to avoid spending time on useless pursuits. Repetition of study projects or the assignment of work which has already been mastered by individual pupils has been recognized by them as likely to have outcomes worse than just a waste of time. They know that such a process destroys interest, encourages bad work habits, and tends to breed mischief.

Teachers have long tried to do something about the knowledges and skills already possessed by individual pupils by excusing them in part or in whole from certain courses. Pre-tests have been given by good teachers to help both them and their pupils to know where they stood from the beginning. But the granting of a credit or a Carnegie Unit for what had already been learned is still widely regarded by some as a radical innovation, if not as a reprehensible practice. To allow such credit for information or skills acquired without devoting to them certain periods of classroom time is thought of as lowering the standards, or giving something for nothing. This situation is an obvious outcome of the emphasis upon the quantitative rather than the qualitative evaluation of pupil progress. When evidence of time served is confused with the acquisition of knowledges or skills, learnings acquired outside of the school or classroom are discounted.

The following recent statement by Galen Jones (45) in the foreword to a study by David Segal shows the pertinence to this study of the various schemes proposed for evaluating and granting advanced standing or credits on evidence of non-classroom learnings:

The whole concept of the Carnegie Unit in secondary education, at least for adults, is involved. Although many of the new regulations and recommendations for equivalency of high-school credit noted in this bulletin are primarily intended for veterans, there is growing out of this experience a realization that for those who have passed secondary school age there must be set up means for evaluating educational experiences and training which have not come about through attendance for 120 clock hours in a classroom. The problem is how to liberalize the basis for granting credit and still make certain that credit is granted only for equivalent competency. It is not a matter of replacing the Carnegie Unit, but rather of finding defensible alternatives for it.

While this statement, and the bulletin to which it refers, limit to adults and to "equivalent competencies" the idea of evaluating and granting high-school credit through examinations for certain out-of-school learnings, they recognize the need "to liberalize" the evaluation processes and to find a "defensible alternative" to the Carnegie Unit.

While the major concern of the high schools is to evaluate the learnings acquired in the classroom, they cannot continue to disregard significant learnings acquired elsewhere. Granting credit for nothing, unwarranted acceleration of the pupil's progress through the high school, and other similar outcomes which are feared by many, are not of basic concern here. Any undesirable outcomes resulting from the granting of credit for certain out-of-school learnings, for example, can always be offset by such safeguards as guiding the pupils involved toward important learnings other than those which they already possess. To put it differently, if it is desirable at all cost for pupils in given age groups to spend 4 years in the high school, the time available should be devoted to the learnings having the greatest usefulness to each pupil rather than to require the repetition of work already covered or obtained elsewhere.

The emergence toward the end of World War II of the General Education Development Test as an equivalency examination for the high-school diploma can have great significance in supplementing the use of the Carnegie Unit as a means of measuring the progress of youth through high school. Most of the States have since 1945 recommended the use of these tests to evaluate the learnings, experiences, and skills acquired by the young men in the Armed Forces. Many of the Servicemen had left high school before graduating, creating not only gaps in the progress of their formal education, but leaving them without certificates of high-school attendance or college entrance. It was recognized that these young people had learned a great deal while in the service through special courses of instruction given on military posts, through correspondence courses, through travel, and through many other maturing experiences.

In December 1945 the American Council on Education organized a Commission on Accreditation of Service Experiences. This Commission was formed at the request of the Advisory Committee of the U. S. Armed Forces Institute and the Joint Army-Navy Committee on Welfare and Recreation. It was financed by a substantial grant by the Carnegie Corporation. The purposes of this Commission were (1) to act as a coordinating agency among the educational institutions, the regional accrediting associations, State departments of education, and similar agencies concerned with evaluating Service experiences; (2) to maintain liaison with USAFI and other educational programs of the military services; and (3) to gather and disseminate information concerned with the policies of the high school and the colleges for accepting such evaluations.

The making of these evaluative instruments was undertaken by such outstanding leaders (15) in this field as E. F. Lindquist, R. W. Tyler, and E. G. Williamson. The instruments devised came to be known as General Educational Development Tests (GED Tests for short). These tests were devised not only to measure learnings of the regular school subjects, but as stated in the manual,

The extent to which all of the past educational experiences of the individual tested—including the experiences gained in the military services—have contributed to his educational development, or to his ability to carry on successfully in a program of general education of the type which the academic high school and the first 2 years of the liberal arts college aim to provide. (23)

The Commission developed two distinct batteries of tests, one for use in the high school and the other at the college level. The high-school level battery consisted of five examinations relating to the major high-school course groupings—English composition, social studies, natural science, mathematics, and literature.

Since their first appearance the GED Tests have gained wide popularity.

The high-school section has been used not only to determine where the returning veterans should be placed in the high-school program, but to issue equivalency certificates for high-school graduation. Many reports relating to the nature and use of these tests have been published by such agencies as the American Council on Education, the National Association of Secondary-School Principals, and the Office of Education (15, 15a, 20, 43, 45). These provide far-reaching evidence to show the reliability of these examinations, their correlation with high-school work, their usefulness for determining ability to do college work and the like. The reports also show that during recent years these examinations have been increasingly used in connection with the educational achievements of adults other than veterans especially in relation to high-school credits and equivalency certificates.

Most of the States and Territories have developed definite policies concerned with how these tests may be officially used by the high schools and colleges within their borders. A recent report entitled, "Accreditation Policies of State Departments of Education for the Evaluation of Educational Experiences of Military Personnel," (15) provides the following summary:

A—Types of educational experiences recommended by the Chief State School Officers for granting high-school credits to servicemen:

USAFI courses: All the States and Territories, except Hawaii and Rhode Island, recommend that credit be granted for the successful completion of USAFI courses. While Rhode Island has made no recommendation concerning acceptance of USAFI courses, the report from that State indicates that many of the high schools actually grant such credit. Date of induction is a factor in the granting of credit for USAFI courses in Indiana, Maine, and Oklahoma. Limits on the amount of such credit have been established by South Carolina and Texas; and Virginia requires that a student shall have completed eight units of high-school work before induction in order to receive credit for USAFI courses.

USAFI subject examinations: Forty-three of the States and Territories recommend high-school credit for the successful completion of USAFI subject examinations. Rhode Island's policy on this item is the same as for USAFI courses. Induction date is a factor in Georgia, Indiana, and South Carolina. South Carolina, Texas, and Virginia have established other limiting conditions.

Courses offered through USAFI by civilian schools: Forty-eight of the 53 reports received indicate that credit is recommended for successful completion of courses offered through USAFI by cooperating civilian schools. In four of the States recommending such credit, induction date is a factor. Only Hawaii, Montana, and North Carolina do not recommend credit; Rhode Island makes no recommendation; and South Carolina, Texas, and Virginia have established additional limitations.

Basic training: The modal recommendation as reported by 25 States and Territories is to accept completion of basic or recruit training for men now in service in lieu of required high-school courses in health and physical education. Eleven of the departments of education recommend two units of credit and 12 others recommend no credit. Policies of 5 States were not reported.

Service school training: Credit for completion of service school training is recommended by 49 of the States and Territories. Induction date is a factor in Indiana, Maine, Oklahoma, South Carolina, Tennessee, and Texas. Limits to the amount of such credit have been established by California and South Carolina; and Virginia requires eight units of work prior to induction as a condition for granting credit for service school training. Rhode Island makes no recommendation on this item, but many high schools in that State grant such credit. Only Idaho, Hawaii, and Maryland do not recommend credit.

B—Evaluation through GED Tests:

Equivalency certificates: Forty-four States and Territories reported policies under which men now in service may qualify in whole or in part for an equivalency certificate or a diploma on the basis of the high-school level GED Tests.

Authority to issue certificates: The office issuing certificates of equivalency or diplomas on the basis of GED Test results differs among the States and Territories. Twenty-three States or Territories report that issue is by the State department of education only; the local high school is the issuing agency in 18 States, and in 9 States there is provision for issue by either the State department of education or by the local high school.

Non-service adults: In addition to their use in connection with the granting of high-school certificates or diplomas to servicemen and veterans, 27 States or Territories report that GED Tests are used as bases for issue of similar credentials to non-veteran or non-service adults. Two States did not reply to this question. Of the remaining States 15 reported no adult certification plan and 9 indicated that such a certificate is issued, but that the GED Test is not used in that connection.

Standards and Safeguards for Using GED Tests for Issuing High-School Credentials

Qualifying scores: Twenty-four States require a standard score of 35 or above on each of the five tests or an average standard score of 45 for the five tests; 10 States or Territories require a standard score of 35 or above on each test and an average standard score of 45; and 14 other States have established varying standards, all of which, however, represent somewhat higher standards. Thus, a total of 24 States are now requiring minimum scores higher than the minimum critical scores recommended by the American Council on Education. One State did not report its minimum acceptable score, and in Alaska a recommended qualifying score has not been established.

Minimum age: Of the 34 States and Territories which reported some age requirement, 14 have established a minimum age of 21; 5 a minimum age of 20; 5 a minimum age of 19; 3 a minimum age of 18 or 18½; and 7 require that the applicant's high-school class has graduated.

Attendance and credit earned: Previous high-school enrollment is reported as a condition for the granting of equivalency certificates or diplomas in 10 States or Territories. Thirty-eight States and Territories reported that previous high-school attendance is not required. Iowa, Nevada, New Hampshire, and Oklahoma require 8 high-school units; Hawaii requires completion of one-half the high school program; the Canal Zone, North Dakota, and Ohio each require 4 high-school units; and California requires 10 semester periods. In addition, California, the Canal Zone, Iowa, Nevada, New Hampshire, Ohio, and Oklahoma have indicated that specific units are required in satisfaction of State laws.

While the GED tests may not be completely usable in their present form as a means of evaluating out-of-school and in-school learnings of high-school pupils, they provide an excellent example of what may be done. Moreover, the extensive experience of State departments of education and other school authorities have had with these tests should provide a good background and objective data for determining what further progress should be made in relation to this problem and how to go about it. It is certain that careful safeguards would have to be provided if such a device as the GED tests should come into common use. For example, many comparable forms of equivalent tests would have to become available. The tests probably should not be allowed to fall into the hands of the pupils or other unauthorized persons for study and transmission to others. They probably should not be copied by anyone. They should of course, be administered only by persons trained and authorized to do so; standards, time factors, and other conditions essential to insuring reliability would have to be maintained.

It would seem obvious from the fact that these tests have been successfully used to evaluate the educational progress of veterans and adults that their adaptation to pupils who are ready for high-school graduation should not involve very radical departures. Likewise, if it is desirable to develop and use special instruments for evaluating the learnings of veterans and adults without regard to Carnegie units, why should not similar general purpose instruments be devised and used for evaluating from time to time the learnings high-school boys and girls have already acquired, regardless of where or how they were learned? If the scores achieved on GED tests have served veterans and other adults as valid indices of probable success in college and in industry, could not similar scores serve similar purposes when achieved by high-school pupils? In any case, certain careful experiments relating to such tests should probably be undertaken as soon as possible to determine the extent to which their findings can predict success of high-school pupils in college and in life generally. Indeed, considerable attention is already being given to developments along these lines.

The Commission on Accreditation of Service Experiences (15a) has recently published a report showing the extent to which 1,511 colleges and universities of the United States accept evidence of scholastic fitness and advanced study through GED tests. The institutions are grouped by States and the data are presented in tabular form. The following table briefly summarizes the replies to certain pertinent questions supplied by Ernest Whitworth, Director of the Commission.

Questions asked	Percent of replies			Total replying
	Yes	No	"Under certain circumstances"	
May service personnel or veterans qualify for admission to the freshman class by satisfactory completion of the high-school level GED tests?	65	12	23	1,508
If answer is yes, must the individual also possess a diploma or equivalent certificate awarded on the basis of GED tests?	59	41	1,198

Improved Marking and Recording of Pupil Progress In Relation to the Carnegie Unit

If the high schools are to measure and record the learning progress of their pupils in ways more valid and meaningful than the Carnegie Unit, they must devise and install better instruments and procedures for these purposes than are now commonly used. Much thought is being given to this problem and some promising schemes have been proposed. Such devices must accurately measure all types of useful knowledges and skill provided by the various programs of these schools; they must be simple enough to be understood by all persons concerned—teachers, pupils, and parents; and they must be generally acceptable to the colleges, the employers, or others who will use these new devices for appraising the accomplishments in the high schools of all pupils attending them. The following examples will illustrate some of the schemes proposed:

Diederich's Profile Index.—Many high schools are now working on the problem of devising a more comprehensive and meaningful plan than the Carnegie Unit for evaluating the progress of youth through the high schools. One such scheme, advocated by Diederich (16), is known as the Profile Index. It attempts to set forth a procedure for evaluating "the following major values or essential elements of the good life."

- A. *Life-maintenance.*—Sheer physical survival on almost any terms, but preferably on a level at which the organism functions efficiently and comfortably. This value includes the necessities (food, clothing, shelter, etc.) and mental and physical health.
- B. *A sense of worth or achievement.*—Of amounting to something, of living up to one's picture of one's self, of being recognized and accepted, and of having accomplished something of importance.
- C. *Friendly relations with others.*—Relations of mutual respect, affection, courtesy, tolerance, etc.
- D. *A free society.*—A self-governing society with the maximum of individual liberty that is compatible with effective cooperation.
- E. *Aesthetic experience.*—A sensitive response to beauty in many forms.
- F. *Meaning.*—Knowledge and intellectual discipline, integrated in a view of life which gives orientation, direction, and security.

Under these major values or essential elements of a good life Diederich has listed certain continuous objectives in terms of knowledge, skills, habits, interests, and attitudes which are believed to increase the chances of the pupil to attain these values both individually and collectively. The objectives proposed are greater than any one school would want to use. Indeed, to make the scheme workable each school should state these objectives in its own words and make sure that it was meaningful in its own community. Skills are then arranged for progress evaluation, extending from zero to 100 with the former marked "weak" and the latter "strong." The following objectives and skills, set forth in relation to Dr. Diederich's "A" value, "Life-maintenance," (18) are here reproduced as illustrative:

A. LIFE-MAINTENANCE

	Weak 0	25	Average 50	75	Strong 100
<i>Necessities (food, clothing, etc.)</i>					
1. Knows how our own and other economic systems operate.....					
2. Knows about distribution of chief natural resources; resists wasting them.....					
3. Respects property rights, contracts, and regulations affecting them.....					
<i>Practical competence in—</i>					
4. Shopping, buying wisely.....					
5. Cooking, serving, dining.....					
6. Cleaning, keeping things in order.....					
7. Caring for children.....					
8. Making things, making repairs.....					
9. Care of house, grounds, property.....					
10. Care of money, banking, insurance.....					
11. Traveling, driving a car.....					
<i>Health</i>					
<i>Healthful attitudes:</i>					
12. Security: self-confidence, poise, independence, flexibility, cheerfulness.....					
13. Affection: is able to give and receive affection freely; shows good-will toward others; etc.....					
14. Health knowledge: physiology, psychology, hygiene, etc.....					
15. Health habits: diet, play, rest, cleanliness, medical care, etc.....					
16. Public health: supports and obeys public health measures.....					
17. Safety: obeys safety regulations, takes reasonable precautions.....					

For each of the other five values, similar objectives or subheads are proposed. Diederich has fully explained his whole plan in the various sources (27). He summarizes the scheme in the following words:

It is hoped that schools will gradually abandon marks in courses as their sole record of the development of their pupils. Instead, teachers should collect evidence of the development of those characteristics which increase the chances of attaining happiness, both as individuals and as a society. The collection of such evidence should not be left to chance—although, once the system is established, a great deal of valuable evidence will come in by chance. A standing committee on evaluation should decide what evidence is needed and where it can be gathered most conveniently. It should schedule the collection of specified evidence at times scattered throughout the year, so as not to overburden any pupil or teacher. It should see to it that the evidence flows in to counselors, clearly marked with the number of the objective or objectives to which it refers and with a letter or other symbol (e. g., a percentile rank) for the degree of attainment of each objective which it indicates. It should make certain that the evidence passes through the mind of someone who knows the pupil and who feels responsible for his all-round development. The Profile Index will both stimulate and facilitate these processes. After some further development it ought to be adopted, at least as a supplement to, and possibly as a substitute for, the present system of academic bookkeeping.

The last sentence quoted from Diederich indicates that it is not necessarily the intent of his scheme to replace or abandon such means of measuring and recording pupil educational progress as the Carnegie Unit. His aim is to gather and record more qualitative information about the pupils, to make the measuring process more objective, and to provide the teachers with more meaningful guides for doing this.

University of Chicago Laboratory School.—Many high schools are reorganizing their periodical reports to the pupils and the parents with a view to improved understanding of the pupil's progress in learning. The trend is away from assigning only such symbolic scores or grades as, for example, A, B, C, or limiting these only to certain traditional subject-matter fields. It is increasingly believed to be equally important that certain "all school objectives of the student" be emphasized by every teacher of every subject or activity throughout his entire program of instruction.

The 10 "all school objectives of the student" here listed have been agreed upon by the faculty, students, and parents of the Chicago Laboratory School as important in continuously evaluating all pupils at intervals throughout the year. (See form used.) Subheads appear under some of the major items. These were worked out to make such an important learning objective as "Uses time wisely" more meaningful to all concerned. Each teacher assumes responsibility for each of these 10 objectives and indicates in the boxes the degree of progress believed to be appropriate for each pupil.

University of Chicago Laboratory School—Progress Report

Outstanding	Satisfactory	Partially satisfactory	Unsatisfactory

In working toward attainment of all-school objectives the student:

1. Assumes responsibility for personal growth

(a) By making effective use of intellectual ability. (b) By making an effort to develop character as exemplified in such qualities as personal integrity, dependability, perseverance, courtesy, self-control, and self-reliance.

(c) By accepting constructive criticism.

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2. Exercises appropriate emotional control

3. Assists in orderly and effective functioning of school groups:

(a) By abiding by school rules and customs. (b) By showing sensitivity to the needs of individuals and groups. (c) By accepting group decisions. (d) By performing official duties effectively. (e) By respecting property. (f) By serving voluntarily as a leader and/or follower.

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4. Practices desirable habits of health and safety.

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5. Demonstrates appropriate self-direction and persistence:

(a) By recognizing points within an area on which he needs improvement. (b) By working toward improvement according to ability, experience, and available resources.

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6. Uses time wisely:

(a) By planning effective use of available time. (b) By bringing required materials. (c) By assembling equipment before starting a project. (d) By starting work promptly. (e) By meeting deadlines set by himself or others. (f) By cleaning up and putting equipment away.

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7. Shows ability to listen effectively.

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8. Shows ability to read effectively.

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9. Shows ability to speak effectively:

(a) By providing adequate and accurate content. (b) By organizing thought. (c) By observing correct pronunciation, enunciation, speed, and tone.

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10. Shows ability to write effectively:

(a) By providing adequate and accurate content. (b) By organizing thought. (c) By observing conventions in spelling, punctuation, usage, and handwriting.

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Comments, if any:

University of Chicago Laboratory School—Progress Report—Continued

Subject: ENGLISH

Name _____

Grade Level _____

Date _____

In working-toward attainment of the objectives of the course the student:

1. Provides adequate and accurate content in: Writing

Speaking

2. Shows ability to organize materials: Oral

Written

3. Demonstrates effective speech habits

4. Observes conventions in: Spelling

Punctuation

Usage

Handwriting

5. Shows ability to apply concepts and principles of the course

6. Uses appropriate research techniques

7. Shows understanding of literature of the course

8. Shows range of reading interests

9. Shows ability to express ideas creatively

Comments, if any:

Advisory Grade _____

Instructor _____

	Outstanding	Satisfactory	Partially satisfactory	Unsatisfactory
1. Provides adequate and accurate content in: Writing				
Speaking				
2. Shows ability to organize materials: Oral				
Written				
3. Demonstrates effective speech habits				
4. Observes conventions in: Spelling				
Punctuation				
Usage				
Handwriting				
5. Shows ability to apply concepts and principles of the course				
6. Uses appropriate research techniques				
7. Shows understanding of literature of the course				
8. Shows range of reading interests				
9. Shows ability to express ideas creatively				

This plan recognizes that a pupil's progress must be measured not only in relation to the knowledge and skills he already possesses at a given time, but also in relation to his ability. It was believed to be more helpful and intelligent to scale learning progress in such meaningful terms as "outstanding," "satisfactory," "partially satisfactory," and "unsatisfactory," than to continue to use such abstract grades as A, B, C, or such unrealistic distinctions as percentages. Teachers wishing to communicate further helpful information to the pupils and parents on the over-all objectives of a given pupil are urged to add such additional comments as they may wish to make in the space provided.

On the opposite page of the 2-page folder (see copy reproduced) each teacher records similar qualitative information on the progress made in the particular objectives of each subject-matter course or project activity the student is pursuing. These specific objectives are developed within the various departments of the school—English, mathematics, science, etc. Again the reporting scheme provides for rapid checking in terms of the four meaningful gradations already mentioned. It also provides for additional comments and a summation of the various learning achievements in each department during the particular period covered by each report. The nine subheads listed on the sample card for the field of English illustrate this. Some other departments of the University of Chicago Laboratory School use more subheads and some less. Other objectives regarded as commonly understood by all were not listed by the English Department.

An interesting aspect of the plan followed at this school is that two copies of each report are sent home, one to be returned to the teacher for filing and the other to be kept by the parents for references and comparison throughout the year, or indeed, for the entire time that the pupil attends this school. The hope is that the interest of the parents in their child's progress through the school will be repeatedly alerted so that they will increasingly participate with the school in helping the child to understand himself and to cooperate in furthering his educational progress.

It is evident that to be successful any plan calling for much gathering of additional information for each child, like the one just described, will of necessity involve additional amounts of time and clerical work. The complexity and cost of the scheme must, of course, be balanced against the need to gather the wide variety of qualitative measures of pupil progress involved and the use made of them. It must not be so complex as to defeat itself by making it either too difficult to understand or too cumbersome to manage from the standpoint of the work entailed. Some clerical help will probably be needed in any qualitative scheme of evaluating pupil progress. But it should not be forgotten that pupils can profitably work with their teachers on such a plan. The whole purpose is to make the evaluation of the pupil's progress more comprehensive,

more meaningful, and more helpful to all concerned, and pupil participation can become an effective means to those ends. It would, of course, be much easier for a teacher to assign an arbitrary grade, of say C, in only the college-preparatory subjects the pupils are taking. However, such grades would not only hide more than they would reveal about what is learned and *not* learned in the total school situation, but being subjective in character, such grades are frequently unfair in that they fail to show what is either expected of each pupil or what progress he is making toward a variety of desired goals. One of the greatest shortcomings of the arbitrary letter or percentage grades which usually accompany the Carnegie Unit, even in specific subject-matter fields, is that the most important aspects of life—work habits, related skills, and application to life—are either completely forgotten by the teacher or vaguely left to haphazard methods of evaluation. Such significant concomitant learnings growing out of the mastery of the selected subjects—emotional control, character, moral and spiritual values—are often not evaluated either.

High-School Graduation and the Carnegie Unit

How finally to sum up and certify clearly and honestly the differences in what and how much pupils learn in the course of their 4 years of high-school attendance has long puzzled educators. When secondary education was selective and primarily college-preparatory in purpose, it followed the simple expedient of failing those who did not measure up and refusing to grant them a diploma. With the growing emphasis upon universal and compulsory secondary education, and with the growing recognition that regardless of their best efforts many pupils are incapable of mastering some of the required courses, the problems centering about the granting of credits and diplomas became much more complex. It became evident that to compel such a youth to attend high school and then to offer him courses which were beyond his capacity was productive of negative educational results often contributing to maladjustment and delinquency. An attempt to solve these problems brought forth a variety of new functional courses and electives; courses with the same titles often were assigned different subject-matter; or lower achievement standards were adopted for some pupils, especially in the required courses.

With these changes, high-school graduation and diploma requirements obviously had to be revised. Some secondary school leaders frankly advocated the granting of a diploma after 4 years of high-school attendance, asking only that the pupil make an honest effort in the required subjects and that he repeat or substitute in the event of failure in elective courses. Such school authorities reasoned that it was better to retain youth in school until 18 if possible, or until he could find gainful employment, rather than to fail or drop him and thus abandon him to idleness. In-

creased use of machine production, as well as changes in the attitude of organized labor, supported these procedures by generally closing employment to youth until after high-school graduation or at least until they had passed their eighteenth year.

Some high-school leaders objecting to the "time-serving-age" basis for graduation advocated different programs of instruction for different youth—college-preparatory, general, homemaking, industrial, agricultural, business—and a distinctly different diploma for each. Others suggested that high-school graduation and diplomas be granted only to those showing high academic scholarship and that "school-leaving certificates" be given to those showing less scholarly attainments.

These various differentiations are rejected by many seeking a solution to high-school graduation and diploma problems because they are regarded as undemocratic. They argue that it is the basic task of these schools to further the greatest possible educational growth and progress of every youth, and that this can be accomplished only when they take into account each pupil's ability to learn, and also what he already knows. Moreover, the growing emphasis upon a comprehensive general education during the high-school period, rather than technical and semi-professional specialization, is regarded by many as inconsistent with the granting of diplomas in specialized fields.

The answer growing out of the changes in the Carnegie Unit proposed in this report accepts neither the time-serving scheme of promoting chiefly on the basis of age nor the multiple, specialized diploma scheme as a solution satisfactory to modern secondary education. A procedure believed to be sounder than either of those schemes is a dual diploma plan described herewith. It is proposed (1) that a formal diploma be granted to each pupil who has attended high school regularly for a required number of years and has done his best while there, and (2) that his diploma (preferably on the reverse side) be accompanied by a qualitative statement summarizing all the positive achievements the pupil's cumulative record may show.

The first assumes, of course, that the offerings and teaching techniques of the school are geared to the needs and capacities of each pupil, and that every effort is made to create the most favorable climates possible for the greatest possible educational growth and development of each pupil. The second part of the plan assumes that in keeping with the procedures already described in this report, the pupil's cumulative record has regularly and frequently received objective and descriptive data showing all of his significant achievements, both those of the classroom and non-classroom types. It also assumes that these several types of data have been carefully analyzed by competent school authorities and reduced to the briefest and most meaningful terms. To be specific, such information would summarize the positive aspects of the pupil's scholastic interests

and achievements, his leadership qualities, his work habits, his ability to work with others, his health and safety habits, his sense of responsibility, his emotional controls, and any specialized skills he may have developed or demonstrated. Such a qualitative summary would also show clearly that there is much more information in the pupil's record which is regarded as of such private character as to be made available to others only on the written request of the graduate, and then only to those qualified to receive and use it—other school authorities, employment personnel officers, Civil Service Commission, etc.

The suggestion that only positive and constructive information become part of the high-school diploma is based upon the probability that most any youth may at some time make a mistake or exhibit shortcomings which are likely to be corrected as he matures. These should obviously not be permitted to prejudice the youth's future or embarrass and handicap him in seeking a job. Moreover, only those who are competent and authorized to get further data from his record should be allowed to do so, and then only under the guidance of the school authorities. This provision would guard against misuse as well as assure that all the data are seen in proper perspective.

Colleges obviously could gain a great deal more objective information about the competence of a given applicant for enrollment from the plan here proposed than is now commonly provided by the diploma, pupil rank order, and transcript of Carnegie Units and subject-matter marks. All of these are in the last analysis derived from the time-serving measure here under question. Such derived data obviously cannot rise above the quantitative sources or yield information on the significant qualitative factors suggested by this report.

The problems of who shall attend and graduate from high school and with what credentials have been widely discussed. The best high schools have already made significant changes in this regard. Others are carrying on experiments looking toward policies which will be more just and meaningful to all concerned. But extensive additional research needs yet to be done in this field. Acceptable guiding principles (40) along the following lines are, however, emerging:

1. All youth wishing to attend high school should have an opportunity to do so until at least 18 years of age.
2. Educational programs appropriate to the needs and abilities of all should be provided.
3. The chief objectives of the high school should be to help youth to improve his environment and live better in it.
4. Conditions within the schools should help all youth toward maximum success and tolerate a minimum of failure.
5. When under these conditions the youth and his school reach a point of diminishing returns, and the school can do nothing more to warrant his further stay, then the objectives of his formal education should be regarded as attained and a suitable certificate or diploma awarded.

6. When appropriate programs of instruction are provided for all, pupils who have put forth their best efforts should be graduated; those who have not put forth good efforts, especially in elective courses, should not continue as regular pupils, but be guided into other forms of education—school-work plans, part-time schools, apprenticeship programs, etc.

7. The graduation certificate or diploma should recognize all essential types of learning and should contain or refer to qualitative data which are objective and meaningful in character, and supplemented from the permanent record on legitimate demand.

8. After graduation, opportunities for part-time, continuation education should begin for many of the graduates.

9. For those needing financial aid to stay in high school, work programs and similar forms of help should be provided especially during the compulsory attendance period.

10. Every effort possible should be made to involve the general public, especially the parents, both in effecting the changes needed in high-school graduation and diplomas, and in understanding what these changes mean.

High School-College Agreements and the Carnegie Unit

There is growing evidence that high school-college agreements are being organized in various States with a view to giving the secondary school leaders greater freedom to change the programs of instruction and administrative practices in keeping with modern needs. While these agreements are more concerned with freedom from required subject-matter patterns long imposed upon the high schools by the colleges and universities, they tend to have the effect of emphasizing the gathering of more qualitative evidence relating to pupil achievements and minimizing such quantitative measures as the Carnegie Unit. A brief review of some aspects of such agreements will illustrate these developments.

MICHIGAN.—One of the most highly developed plans of this kind is the Michigan Secondary School-College Agreement Plan (58). More than 200 high schools and all the universities and colleges of this State now operate under this Plan. It has not only freed the member high schools from the domination of required and often arbitrary college-entrance courses, but to a lesser degree it has created a favorable atmosphere for improving the programs and practices of all the high schools of the State.

This arrangement was the product of cooperation and extensive study by the leaders at both the college and high-school levels. The former agreed to waive special course requirements and patterns for graduates of member high schools provided that: (1) Only the more able students were recommended for college attendance; (2) improved and more complete records were kept for each; (3) continuous evaluations were being made of the school's purposes, curriculums, and processes of instruction; (4) continuous follow-up studies were made of former pupils—early leavers, graduates, and college entrants; and (5) a continuous program of educa-

tional and vocational guidance was maintained, especially during the senior year.

This program gave rise to a committee on which the State College Association, the State Secondary School Association, and the State Department of Education are represented. This committee receives and evaluates data presented by new applicants, visits the member schools as needed, and consults on mutual problems arising. These activities have resulted in stimulating (1) more consultation and understanding between the high schools and the colleges, (2) closer adaptation of the high-school programs to the needs of individual pupils and communities, (3) more sharing of information and experiences with other schools, (4) more cooperative research and experimentation, and (5) improved instruction and guidance programs.

ILLINOIS.—In Illinois a representative committee for Cooperative Action by Secondary Schools and Colleges has been at work for some years. Certain guiding principles have been developed jointly to set forth the respective responsibilities of each relating to the new college-admission requirements. These led to the following recommendation by this Committee (54):

In the light of these principles, it is recommended that (for admission to general college work) the colleges adopt admission policies which do not specify the courses the students are to take in high school, but specify the kinds of competence to be required of entering students. There has been extensive research on the kinds of competence which are good predictors of college success. The following five criteria can be used by a college or university to provide the best prediction of the probable success of the student in college work: Scores on a scholastic aptitude test, a test of critical reading, a test of writing skill, a simple mathematical test, and evidence that the student has an intellectual interest and some effective study habits as shown by his having taken at least 2 years of work in one field in high school in which his grades were better than average.

For admission to such specialized curricula as engineering, the Committee recommends the adoption of the following paragraph:

Secondary schools are urged to provide means for high-school students to acquire prior to graduation the competencies demanded for successful work in specialized programs in institutions of higher learning, such competencies to be determined on the basis of standardized tests rather than on the basis of passing specified courses.

MINNESOTA.—Minnesota organized a Commission on Higher Education in 1947, composed of representative high-school, college, and lay leaders. Recognizing that all youth going to high school cannot limit their work or even give their major emphasis to preparation for college, this Commission cites the following joint problems and bases for cooperation: (1) high-school pupils need help from both the high schools and the colleges in planning for and fitting into the colleges; (2) such greater freedom as is granted the high schools imposes upon them responsibilities for more information through State-testing programs both during and at the end

of the high-school program; (3) follow-up studies of high-school and college graduates should be made to uncover weaknesses and needed improvements in both programs; (4) more effective ways are needed for discovering and retaining superior students and overcoming difficulties due to distances and poverty; (5) for required course patterns individualized programs of instruction based upon achievements, special tests and inventories, work habits, character traits, etc., should be substituted; and (6) closer articulation between school-college teaching personnel, guidance programs, and governing policies need to be developed. (52)

Several States other than those whose plans were described by way of illustration are working along similar lines to improve their procedures for evaluating high-school graduates for college entrance. The changes made by the high schools to give less emphasis to the Carnegie Units and more to qualitative types of evidence were recently summarized as follows by Fowler (50):

1. Gather more data on each pupil through checklists, scales, paragraph summaries, personality sketches, summaries of non-classroom achievements, and other narrative data describing motives, backgrounds, etc.
2. Abolish fixed patterns of subject-matter requirements, number of credits, class percentiles, etc., except when used in connection with other pertinent and more meaningful data.
3. Limit entrance tests to reading, writing, and general aptitudes and use all other test data chiefly for guidance and placement within the colleges.
4. Change college-entrance procedures from hurdles for excluding students to processes concerned with understanding, guiding, and helping them.

A number of promising research projects and experiments have been launched or projected to bring about better high school-college relationships. These are concerned with such matters as:

1. Determining specific strengths and weaknesses of existing college-preparatory programs.
2. Organizing well-defined efforts on the part of colleges to orient prospective students through college visiting days, conferences, guidebooks and the like, sponsored chiefly by and at the expense of the colleges.
3. Developing workable criteria and tests for selecting high-school graduates and adjusting them to college life and work.
4. Improving understanding between high-school principals and college professors through intervisitation programs between high schools and colleges.
5. Devising plans for follow-up conferences and correspondence between college freshmen and their high-school principals.
6. Developing guidance programs within the colleges with a view to better placement and adjustment of otherwise capable students.
7. Carrying on follow-up studies of college graduates to determine relationships between existing college programs of instruction and requirements and subsequent success.

Much needs yet to be done to improve cooperative relationships between the high school and colleges and to institute a better basis than the Carnegie Unit for selecting prospective college students. Some

of the accrediting associations (53), as well as individual colleges and universities, have become increasingly aware of the inadequacies of that unit and the many other problems involved. Paramount among these problems is the frank recognition by the colleges that modern high schools have a much bigger job to do than preparing youth for college entrance; that the secondary schools must be concerned with the many rather than the few; that success in college should be specifically determined and described; and that these two institutions are jointly responsible with the high schools for selecting and preparing youth for such success in college. As a result of these changes in attitude, emphasis by the colleges upon Carnegie Units is decreasing, and their domination of the high schools is weakening.

CHAPTER V

Summary: The Case For and Against the Carnegie Unit

AT THE TIME of its origin and during the first decade of its existence, the Carnegie Unit was a helpful device to high schools and colleges. In fact, it was the influence of the Carnegie Unit that forced colleges to rid themselves of their own secondary school departments and to specify graduation from a 4-year high school as a prerequisite for admission to college. In this respect the Carnegie Unit strengthened the high-school's role, furthered its growth, and consolidated its position in the American educational system.

But there are many reasons why the Carnegie Unit is no longer so helpful to secondary education. The fundamental concept inherent in the Unit—that the amount of time spent in the classroom studying a subject is a justifiable criterion of the measure of high-school work—has erected a sort of iron curtain against the appraisal of high-school work in terms of competence and knowledge acquired.

The question many people are asking today is, "*How well* are our high-school pupils prepared in their studies?" By itself the Carnegie Unit cannot answer this question because it answers a different sort of question; namely, "*How much time* have they devoted to their studies?"

This point of difference emphasizes the major issue at the heart of this discussion on the Carnegie Unit.

For the purpose of easy reference, the authors now present a brief outline of the Case For and Case Against the Carnegie Unit:

I. The Case FOR the Carnegie Unit

- A. The Carnegie Unit created order out of the chaos in the college-entrance procedures existing before the adoption of the Unit.
 1. It eliminated the need for many of the prevailing unsatisfactory college-admission practices, such as the giving of personal examinations or subjective interviews as a basis for entrance, the custom of admitting on condition a large number of candidates deficient in preparation, and the lack of agreement among colleges as to basic items in admissions policy.
 2. It became generally accepted by all colleges as a standard basis for admission of candidates.
- B. The Carnegie Unit strengthened the high school as an integral part of the educational system.
 1. It caused the elimination of high-school departments from college programs.
 2. It established the concept that graduation from a 4-year high school constituted a required basis for college entrance.

3. It simplified the preparation of college-bound pupils in the high school.
4. It brought about greater uniformity between time elements in high-school subjects and among high-school programs.
5. It was easily understood by principals, teachers, pupils, parents, patrons, and the college staffs.
6. It gave a feeling of security to high-school and individual teachers because the amount of time required to cover a given subject or course was known definitely.
7. It was adaptable to the mass education demands of the Nation, especially in gauging high-school graduation, college-entrance requirements, and computation of honors.
8. Time spent on a subject could be easily measured. Every pupil could spend the necessary time; not every one might master the subject or pass examinations.
9. It regularized schedule making, thus making it simpler, both in the arrangement of teaching schedules, in the scheduling of pupils, and use of classrooms.
10. The standards it established could be easily applied by regional accrediting associations and by State departments of education in their respective areas.
11. As conditions changed it lent itself to the idea that the name of a subject might remain constant, but that the content could be changed and the way it was developed for teaching might be flexible.

II. The Case AGAINST the Carnegie Unit

- A. The Carnegie Unit, imposed on the high schools by the colleges as the result of a Carnegie grant to the colleges for pensioning their faculty members, has been primarily college-centered.
- B. Originally devised to measure college-entrance requirements, the Carnegie Unit remains to give unnecessary emphasis to college-preparatory programs for all high-school pupils despite the fact that the majority of them do not go to college.
- C. It encourages a rigid schedule of subjects and classes, which makes needed innovations in the high-school program difficult.
- D. Since colleges have been slow to assign credit to certain functional subjects, the Carnegie Unit handicaps the addition of such subjects to the high-school curriculum. This causes many pupils needing instruction in these fields to avoid them.
- E. It gives undue emphasis to the time served, to subjects and to textbooks, without appropriate emphasis on amount learned in subjects.
- F. It fosters the assumption that all pupils can acquire the same minimum amount of learning or subject mastery in a given period of time, thus encouraging well-endowed pupils to loaf and requiring those less well-endowed to attempt to achieve the impossible and thus suffer possible failure.
- G. It assumes that all pupils must earn the same number of credits to be graduated from high school, but makes no allowance for what pupils already know before they begin the study of a subject or how much they have learned when the credit is granted.
- H. The credits and units earned represent a vast variety of scholastic accomplishments and teaching skills; units and diplomas cannot be equal though the quantitative values suggest that they are.

THE CARNEGIE UNIT

- I. It provides no uniform means for measuring such qualitative learnings as social adjustment, moral and ethical development, leadership, attitudes, work experience, civic competence, and a variety of other essential and valuable human objectives.
- J. It has discouraged the use of reliable tests and other instruments that may reveal the progress pupils have made toward desirable learning objectives, that may indicate the elements in which they are deficient or need strengthening, and that may show the degree to which desirable objectives are ultimately achieved. These essential types of information help the teacher and pupil to establish guide lines for purposive learning that the Carnegie Unit neither supplies nor stimulates.
- K. The Carnegie Unit has discouraged the use of available instruments mentioned in (J) because it has placed such great emphasis on the subjective marks given by teachers.
- L. The Carnegie Unit has tended to give too little time and emphasis to the role of evaluation in learning; it has not recognized the importance of evaluation as an essential part of teaching and learning.
- M. It has fostered the notion that pupils go to high school to get enough credits to obtain a diploma. Consequently, pupils often try to achieve the required number of graduation units in a shorter time and are inclined to regard their high-school education as over when they reach that point.
- N. This tendency toward credit acceleration by pupils encourages a "Thank Heavens! That's over!" attitude. Real measures of growth would focus on mastery of subject matter and other desired objectives rather than on accumulation of Carnegie Units or credits.

APPENDIX

List of References

THE SOURCES listed below contributed significantly to the data and ideas presented in this bulletin. Where direct quotations are used they are cited in parentheses throughout the text and may be identified by the number placed opposite each item in the reference list. Many of the ideas and developments used in the text are the products of wide general reading in the field. These sources are also listed. Students wishing to delve further into various problems regarding the Carnegie Unit and to analyze how it may be supplemented and supplanted will find this list of references of considerable help.

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