Relative Scholastic Success of College Students from High Schools of Varying Sizes

Leonard Lee Hudson
RELATIVE SCHOLASTIC SUCCESS OF COLLEGE STUDENTS
FROM HIGH SCHOOLS OF VARYING SIZES

BY

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Major Professor
and
Department of Education

Minor Professor

Graduate Committee
ACKNOWLEDGMENT

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I wish to thank those who kindly assisted in furnishing materials and suggestions.

I am grateful to Dr. N.O. Taff, my minor professor, for constructive criticisms and suggestions.

Acknowledgment of my deep gratitude is given to Dr. Lee Francis Jones, my major professor, whose guidance and interest have made this study possible.

I wish to acknowledge the assistance and encouragement given by my wife.

L.L.H.
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CHAPTER I
INTRODUCTION

The American high school is well established in our educational system. "As the Latin grammar school was the expression of European orthodoxy and conservatism, and the academy of the dawning nationalism of America, as yet cast in aristocratic rather than a democratic form, so the high school is the first expression of American democracy in this phase of education." Latin grammar schools were first established in Massachusetts and later in other colonies and were the fore-runners of the academies, which in turn made possible the advent of the public high school as a tax supported institution.

At the close of the Civil War and during the period of reconstruction, educational advantages in the South, especially those of the secondary level, were all but destroyed. "A generation grew up with what education could be secured at the fireside and at numerous little private schools that sprang up everywhere by some one who wished to earn a living where plenty once was wont to abound." This situation was typical in several Southern States. However, during the period from 1865 to 1905 private academies rendered a great service in the field of

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secondary education. Though with little or no guidance, out of this system evolved the present high school.

The number of high schools and the efficiency of the individual school attract our attention. It has been shown that, for the country as a whole, the percentages which the enrollment in the public high schools were of the population of high school age (14 to 17 years, inclusive) had mounted from 3.8 in 1890 to 24.0 in 1920. Evidence obtained from the Office of Education discloses an even more rapid acceleration since 1920. By 1930 the percentage had mounted to 46.6. With the enrollment in private schools included, the proportion in that year was well over half of all the population of these years. Some individual states and cities show a much larger percentage.

The popularization of the high school is appreciated more fully when considered from the fact that the high school population has grown from about 300,000 students in 1890 to about 6,000,000 in 1932, which is half the high school population of the civilized world. High school buildings, some of them magnificent models of architecture, have increased from about 2,500 to approximately 25,000 in the same period, while the number of high school teachers has grown from about 15,000 to approximately 225,000 in 1932.

Further evidence of significance is shown by the large number of high school graduates who enter higher institutions of learning. For the year 1931-1932, 39.10 per cent of graduates

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from Kentucky high schools members of the Southern Association entered college. Colleges recognize the splendid progress made by schools of secondary rank, and encourage the preparation of students to meet requirements for college in standardized high schools. The cooperation among college officials, educators, state officials, and laymen to improve the efficiency of the high school is very marked and gratifying.

The present set-up of secondary education in the South can not be so well appreciated without a view of its different stages of development. Before the horrors of the Civil War swept over the Southern Section, Alabama in 1860 had 10,778 students attending 206 academies taught by 400 teachers. Ten years later only 46 academies existed to accommodate 3,088 students. Georgia, in 1850, had 9,059 students attending 219 academies taught by 318 teachers. Only eight states surpassed Georgia in either the number of students or in the number of academies. This state suffered more than Alabama. Every Southern State underwent a similar experience. Georgia was the first to make a systematic effort in the organization and administration of a state system of secondary education. The struggle through which each of the Southern States passed merits our sympathies and admiration.

To build upon the ruins of such destruction required decades of arduous effort. However, a system of elementary schools was pretty well established by 1890. Ambitious school men began to

5 Joseph Roemer, op. cit., p. 201.
6 Ibid., p. 247.
expand the elementary system by extending the courses of study a year or more beyond the regular requirements. This was done without supervision and often by teachers with little or no training. On the other hand, colleges maintained a preparatory department to prepare students for college work. It was the college men that first realized the importance of improving the efficiency of the secondary schools, knowing that institutions of higher learning would of necessity come to depend upon the secondary schools for students who wished to acquire a college education. High schools were late in being established in the South. The period between 1900 and 1910 is considered as the time of the most rapid development.

To safe-guard the standards of higher institutions of learning and at the same time encourage efficiency on the part of institutions of the secondary level which supply graduates seeking admission for further training, powerful educational machinery has been set up to investigate, recommend, and regulate certain practices and policies conducive to the best interest common to both types of educational institutions. Organizations representing such powerful machinery are: the New England Association of Colleges and Preparatory Schools, established in 1885, The Association of Colleges and Preparatory Schools in the Middle States and Maryland, in 1892, the North Central Association of Colleges and Secondary Schools, in 1895, and the Association of Colleges and Secondary Schools of the Southern States, established in 1895. While less than half a century old, these splendid organizations were established in time to wield
great influence in the transition from the private academy to the newly established high school. Notice the aims of the Association of Colleges and Secondary Schools of the Southern States, as set forth in its constitution, Article I, Section 2:

"Object—The object of this association shall be to establish helpful relations between the secondary school and the institutions of higher education within the territory of the association, and to consider all subjects that tend to the promotion of interests common to colleges and secondary schools." 7

As evidence of success, these organizations continue to grow and command the respect of the educational realm.

High school supervision by competent supervisors through the State Department of Education has much to do with raising and regulating standards. Accrediting associations depend largely upon high school supervisors to furnish information and recommendations concerning the status of the various schools within their territory. The State Department is able to have first hand and personal information relative to state and local condition, and in numerous instances to direct policies or make adjustments between conflicting opinions.

The General Education Board, between the years 1905 and 1911, furnished in each of the Southern States a professor of secondary education at the state university, or an inspector in the State Department. In 1920, on account of the increase in duties, two men were employed to handle the problems with the understanding that after five years the State was to assume the financial support for the development of secondary education.

Mr. McHenry Rhoads was appointed to introduce the work in Kentucky. He found in 1911, fifty-four public and twenty-nine private secondary schools offering courses. So rapid has been the growth that there are now 846 schools offering some high school work, with an enrollment of more than 80,000 students. There are 771 white secondary schools of which 604 have accredited relations. Approximately 167 of the smaller schools are in the formative stage or have become approved schools of varying classes. The work of supervision and inspection in Kentucky has won favor among school authorities and accrediting associations, and has established itself as a permanent division in the Department of Education.

Education in America has made substantial growth in its various phases. No factor has been more marked than in the secondary field. The South was tardy in establishing a systematic scheme owing to the devastation of a Civil War and the misunderstandings natural to a reconstruction period. Many forces for the improvement of the secondary field in this section are now accomplishing wonderful results. Accrediting associations to investigate, recommend, and regulate certain practices, different divisions of the state department of education to supervise and inspect, research organizations, graduate schools, and school authorities are adding to the fund of knowledge regarding the different conditions and situations.

This naturally leads to much study and criticism regarding

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the efficiency of the different types of high schools. Some of the schools are small, merely in the formative stage, and have a very small number of teachers and students, while others have large faculties and a student body that reaches into the thousands. Having evolved from the grammar school and conventional academy, in a land of varying possibilities and changing conditions, the high school cannot escape the ever perpetual experimental stage. No matter what is considered a standardized school today, tomorrow introduces new demands and situations. In this connection it seems appropriate to mention some general criticisms, and to make a study of what the high school is contributing to the educational system.
CHAPTER II
SOME CRITICAL OPINIONS AS TO RELATIVE EFFICIENCY OF HIGH SCHOOLS OF VARYING SIZES

This chapter is devoted to a sampling of the general trend of thoughts and criticisms from those who come directly in contact with the problems of high schools of varying types and sizes, located in different sections of the United States.

"36 per cent of the high school pupils of the United States are found in schools having from one to three teachers, and 58 per cent are found in schools having not more than six teachers; consequently the small high schools are an exceedingly important part of the high school aggregate. They are so numerous that they constitute a distinct class and their needs a special problem. As a matter of educational strategy their efficiency should be increased. Schools of this class are growing rapidly in numbers, and they will continue to grow. To outline, and then realize, a policy that will raise them to the greatest possible efficiency, will be to render large assistance to a majority of our high school population." 1

In a study of the conditions in Ohio, E.J. Ashbaugh, Assistant Director, Bureau of Educational Research, Ohio State University, says:

"Nearly three-fourths of the First-Grade Four-Year high schools of Ohio have fewer than 100 pupils each. The typical high school has 70 pupils and four teachers.

That good academic work is done in many of them is not questioned but a rich curriculum, experienced teachers, and the opportunities for social education which are possible with larger numbers, are conspicuously absent in fully half of these schools."

Notice comments made by Franklin E. Pierce, Supervisor of Secondary Education, Hartford, Connecticut:

"No one who daily visits classes can fail to be impressed by the lack of proper scholastic preparation evidenced by a large number of teachers. Results in scholarship cannot be obtained by inadequately prepared teachers." 3

"High schools are sometimes properly criticised for turning out graduates who have had 'a little of everything but not much of anything' during the four years of attendance; the school should avoid this danger." 4

Dr. Joseph Roemer, George Peabody College, has made an extensive study of the secondary schools of the Southern States, and has written a number of valuable articles relative to high schools.

"In the one- and two-teacher high schools there can be little specialization since certain subjects must be taught whether or no.

The larger schools draw the best teachers. It is only natural that they should seek fields with better working conditions and broader opportunities. The criticism must fall upon the system, not upon the teachers." 5

"The large high school, with its wonderful equipment and highly trained faculty, is liable to drift into mass production, thus losing sight of the individual pupil and the more human side of education. The small high school, on the other hand, with its many opportunities for personal contact and intimate relationships, is in danger of becoming sterile and flat due to a lack of the stimulation and vision which comes from well trained faculties with ample equipment and an

enthusiasm, generated in a virile atmosphere
of work and progress." 6

In an editorial comment of the School Review, E.M. Foster, chief
of the Statistical Division in the United States Office of
Education is quoted:

"Large schools have very much the same advantages
and disadvantages as the large university or college.
While there are great numbers, facilities can be
introduced and made available which often are impossible
where enrollments are smaller. On the other hand,
students tend to become regimented, lose their identity,
and suffer serious handicaps in their contacts with
each other and with their instructors. Students as
individuals tend to become more remote from the teacher
in the large high school." 7

The outline presented below contains the usual criticisms
aimed at the general system of high schools of the smaller type.

It is taken from a study made by Dr. John Rufi, Professor of
Education, Michigan State College of Agriculture and Applied
Science.

SUGGESTED CRITICISMS

Teachers:-

Majority have had little or no previous experience;
their training woefully inadequate;
their tenure extremely brief;
their salaries insufficient;
their professional spirit low;
qualifications are far below the standards
reached by the staffs of larger urban schools.

Administration
and
Supervision:-

Schools are poorly organized and administered:

6 Joseph Roemer, "Comparison of Advantages and Disadvantages in
Developing Extra-curricular Activity Program in Large and Small
7 Editorial Comment, "Large High Schools," The School Review,
(September, 1932), p. 495.
teaching schedules are ill arranged; records incomplete and inaccurate; school year relatively short; attendance irregular; supervision is either valueless or non-existent; inspection by authorized agents superficial.

Finances: -

The cost per pupil is exorbitant; districts in many cases overburdened with debt and taxes; available revenue not used efficiently; financial support of these schools is impossible under present form of organization.

Physical Plant: -

In majority of cases unsafe, unsightly, unsanitary, and educationally unserviceable; poorly ventilated; ill-lighted; no provisions for health education or recreation; libraries and laboratories poorly equipped; compared with a well planned, properly equipped school plant most of them are educationally makeshifts.

Curricula: -

In these schools are extremely limited; traditional; poorly arranged and ill balanced; much stress placed upon preparation for college; other vital objectives neglected; offer little or no vocational work; little or no provision for individual differences in either ability or interest; too much imitation of large urban high schools; neglect the needs of their own communities.

Instruction: -

Inferior in quality; teaching load excessive both in number of preparations required and in number of classes taught; limitations of teaching staff preclude the degree of specialization essential to effective teaching; limited library and laboratory facilities add to the difficulties of instruction; almost total absence of helpful supervision; retardation greater than in larger urban schools; standards for passing much lower; holding power low; students poorly prepared to continue advanced work in institutions of higher learning; poor teaching almost inevitable.
Extra-curricular Activities:-

Because of limited numbers, much of the work is of little value; generally purposeless; rarely educative; athletics over emphasized; assemblies dull, routine, and meaningless; lack of well-trained, experienced teachers prevents proper directions of these activities; student funds frequently mismanaged; student activities often contribute very little to the larger aims of education. 8

The foregoing comments and criticisms are directed toward the general system and not to any one factor. It would be appalling if any high school should be so defective as the picture indicates, yet, there is little likelihood that any school escapes them all. Since the average or small high school represents the major portion of the secondary population, these accusations should not go unchallenged. Scientific investigations should reveal the real conditions and proper means be used to increase the efficiency of these schools.

With so many problems presented, it is reasonable that investigation should be limited to definite units of different phases of the system. It is the purpose of this study to limit the problem to discovering, as nearly as possible, the comparative efficiency of high schools of varying sizes, using as a measure of efficiency, the scholastic achievement in college of graduates from these high schools.

CHAPTER III
THE PROBLEM AND PROCEDURES

High schools in Kentucky during the period since 1907, have made wonderful gain in numbers, teaching force, school plants, and equipment. High schools of different sizes are endeavoring to meet the demands of young people of varying capacities, aptitudes, and interest for life situations, and at the same time to satisfy entrance requirements of higher institutions of learning. Yet, the question of how well the schools are functioning in the educational system is a challenge. As stated the purpose of this study is to determine the relative efficiency of high schools of varying sizes. The size is expressed in terms of the number of teachers. The measure of efficiency is confined to the scholastic success of high school graduates, as freshmen, attending college.

**Scope of the study.**—The scope of this study is confined to the relative success of high schools of varying sizes, interpreted by scholastic achievements of their graduates, during the freshman year, attending the same college. The college in this case is the Western Kentucky State Teachers College.

Schools under consideration are Kentucky high schools attended by white pupils, thus eliminating any racial problem. Students from schools outside of Kentucky and those who enrolled and immediately withdrew are not considered. Some whose records are incomplete are left out.

Schools are distributed as to size, into four groups or
classes, namely, two teachers, three teachers, four teachers, and five or more teachers. Reference may be made from time to time to one-teacher schools, but not as one of the classifications, since schools having less than two teachers do not offer a four year course, neither do they have high school graduates.

The small high school may be pictured as one having four or fewer teachers. The number of teachers is usually the most outstanding of the limiting factors in small high school systems. As one of the basic requirements for accrediting relations, the Committee on Accrediting of Secondary Schools uses a minimum number of teachers.

Grades and records made by freshmen during the first semester in college are much more likely to reflect high school preparation. In the transition from the secondary field to that of higher rank the student naturally relies greatly upon his high school experiences. All grades made in high school and college are expressed in grade-points. The high school grade point is taken from the grades submitted with the high school credits on transcript as college entrance requirements. The grade point of college standing is based on the first semester's work.

The dual purpose of the high school in preparing the individual for the actualities of life, on the one hand, and the preparation for college on the other is recognized. This study is confined, only as one measure of efficiency to the

Ability of recent graduates to attain scholastic success in college during the freshman year.

All high schools do not have the same curriculum and all colleges do not offer the same courses, therefore, it is necessary to select courses that are universal to both high schools and colleges, upon which to base a comparison. English and mathematics are taught in high school and college. Kentucky colleges require certain units in both subjects for entrance requirements. English and mathematics are used in this study for the comparison.

Procedure. — In this set up, from among 600 Western Kentucky State Teachers College freshmen attending the first semester, beginning in September, 1932, and who had been given two tests, the American Council Psychological Examination, and the Kentucky Classification test, 439, who are graduates of Kentucky high schools, are chosen. Data regarding the grade points were collected in the Registrar’s office at the Western Kentucky State Teachers College, from the original records.

The data for the American Council Psychological Examination, and the Kentucky Classification test, were secured from the office of the Head of the Department of Education of the College. The results were then arranged in groups according to the teacher size classification of the schools used in this study.

The regular marks submitted by high schools from which the graduate comes and the college marks are taken at the value set by the respective institutions, but are interpreted in quality marks as follows: 3 represents the grade mark “A”; 2, “B”;
1, "C"; 0, "D"; and -1, "F".

It is no trouble to secure the "F" mark from the college record. Very few high schools transmit "Failure" marks. Another difference to be noticed is, that in college, a minimum standing of "C" average is required for graduation, while some high schools allow students to graduate who have a grade average considerably below "C". "D" grade represents zero in the grade point system. It allows credit toward graduation, but does not count toward points. "F" indicates failure. In this study it is given the value of minus one. It lowers the average considerably when it occurs in the computation of averages. As an "X" may be a virtual failure, or a condition to be removed by varying degrees of effort, it is not counted either for or against the student in this study.

A grouping is made of the number who failed in college English, and the per cent who failed in the same subject. The number of students failing in college mathematics together with the per cent are for comparison in determining the degree of success of achievement in college. In Table IV the picture shows that large high schools excell in English and the small high schools excell in mathematics. The difference in mathematics is negligible. The findings resulting from this study are given in tabular form with discussions.
CHAPTER IV

RELATIVE SCHOLASTIC SUCCESS OF COLLEGE STUDENTS FROM HIGH SCHOOLS OF VARYING SIZES

The findings relative to the scholastic success of college students from high schools of varying sizes, used in this study, are discussed in this chapter. In the development of the educational system, different classifications came to be used for high schools. Such classifications are based quite largely upon the number of teachers employed. Only the teacher factor will be considered.

"The county high schools of the Commonwealth shall be of the first, second, and third classes." A first class school shall employ at least two teachers who devote full-time to high school work. High schools of the second class shall employ at least one full-time and one part-time teacher to do high school work. High schools of the third class shall employ at least one full-time teacher to do high school work.

The Kentucky Association of Colleges governing the accrediting of high schools recognize the different classes of high schools as Class A High Schools and Class B High Schools. Again using the number of teachers and also the number of pupils, the requirements are: Class A High School (grades 9-12) shall employ at least four full-time teachers and have a bona fide enrollment of not fewer than sixty pupils. Class B High

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School (grades 9-12) shall employ at least three full-time teachers and have a bona fide enrollment of not fewer than forty-five pupils.

Some of the requirements for an accredited high school in the Southern Association of Colleges and Secondary Schools are:

No four-year high school shall be accredited which does not employ at least four teachers giving their full time to high school instruction.

A small high school in this particular study may be defined as one employing four or fewer teachers. It fits well with the minimum requirements of the most exacting accrediting association operating within the state. Further classification gives the study more limitation. In this classification the schools are distributed, as to size, into four groups, namely; two-teacher, three-teacher, four-teacher, and five or more-teacher. The first three will be designated as small high schools, and the fourth as large high schools. Hereafter, the groups will be called two-teacher, three-teacher, four-teacher, and five or more-teacher or large each referring to the size school in the last classification. Every secondary school used in this study comes under one or more of these classifications.

Freshmen who entered the Western Kentucky State Teachers

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2 "Minutes of the Committee on Standards of the Committee on Accrediting of Secondary Schools", (Lexington, February, 11, 1933).
College, September 1932, were given two tests, the American Council Psychological Examination, and the Kentucky Classification Test. This is in keeping with "a co-operative testing program for Kentucky Colleges and High Schools". The purpose of the plan is to unify the intelligence and placement testing programs of the various colleges for guidance of students.

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### TABLE I

A Comparison of the distribution of the quartile ranking of students who took the American Council Psychological Examination, and the Kentucky Classification Test

<table>
<thead>
<tr>
<th>Quartile Ranking</th>
<th>&lt;2 Teachers</th>
<th>2 Teachers</th>
<th>&gt;2 Teachers</th>
<th>Tests</th>
<th>&lt;2 Teachers</th>
<th>2 Teachers</th>
<th>&gt;2 Teachers</th>
<th>Tests</th>
<th>&lt;2 Teachers</th>
<th>2 Teachers</th>
<th>&gt;2 Teachers</th>
<th>Tests</th>
<th>&lt;2 Teachers</th>
<th>2 Teachers</th>
<th>&gt;2 Teachers</th>
<th>Tests</th>
<th>&lt;2 Teachers</th>
<th>2 Teachers</th>
<th>&gt;2 Teachers</th>
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<th>&lt;2 Teachers</th>
<th>2 Teachers</th>
<th>&gt;2 Teachers</th>
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<td>17</td>
<td>9</td>
<td>5</td>
<td>7</td>
<td>11</td>
<td>66</td>
<td>43</td>
<td>Q3</td>
<td>23</td>
<td>21</td>
<td>18</td>
<td>14</td>
<td>18</td>
<td>16</td>
<td>52</td>
<td>44</td>
<td>Q2</td>
<td>26</td>
<td>16</td>
<td>14</td>
<td>18</td>
<td>15</td>
<td>10</td>
</tr>
<tr>
<td>Q1</td>
<td>30</td>
<td>24</td>
<td>22</td>
<td>16</td>
<td>16</td>
<td>12</td>
<td>52</td>
<td>27</td>
<td>Total</td>
<td>85</td>
<td>78</td>
<td>63</td>
<td>53</td>
<td>53</td>
<td>49</td>
<td>214</td>
<td>148</td>
<td>Median</td>
<td>1.48</td>
<td>1.93</td>
<td>1.67</td>
<td>1.58</td>
<td>1.70</td>
<td>2.15</td>
</tr>
</tbody>
</table>
Table I shows a comparison of the distribution of the quartile ranking of 415 students who took the American Council Psychological Examination and 328 who took the Kentucky Classification test. The quartiles are based upon the entire scores made by all who took the tests in the Western Kentucky State Teachers College. It is to be noticed that the number in the various size schools differ, owing to the fact that some took both tests while others took only one test. The table gives the grouping according to the size of the high school from which the students came. In Table I, the first column gives the quartile ranking. Columns 2, 4, 6, and 8 give the number who took the American Council Examination, and the columns 3, 5, 7, and 9 represent the number who took the Kentucky Classification test.

Of those taking the American Council the distribution of graduates from high schools of different sizes is as follows:

Two-teacher 85;
Three-teacher 63;
Four-teacher 53;
Large 214.

Of those taking the Kentucky Classification, the distribution is as follows:

Two-teacher 78;
Three-teacher 53;
Four-teacher 49;
Large 148.
The frequency based upon the quartile ranking of all the students gives a better cross-section of all freshmen attending at the same time. There is a marked difference in the median of students from schools of varying size. The median for students from schools of different sizes, who took the American Council, shows the following quartile ranking:

<table>
<thead>
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<th>Type</th>
<th>Median</th>
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<tbody>
<tr>
<td>Two-teacher</td>
<td>1.48</td>
</tr>
<tr>
<td>Three-teacher</td>
<td>1.67</td>
</tr>
<tr>
<td>Four-teacher</td>
<td>1.70</td>
</tr>
<tr>
<td>Large</td>
<td>2.25</td>
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The median in the Kentucky Classification tests shows:

<table>
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<tr>
<th>Type</th>
<th>Median</th>
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<tbody>
<tr>
<td>Two-teacher</td>
<td>1.93</td>
</tr>
<tr>
<td>Three-teacher</td>
<td>1.58</td>
</tr>
<tr>
<td>Four-teacher</td>
<td>2.15</td>
</tr>
<tr>
<td>Large</td>
<td>2.29</td>
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The correlation of the two tests for the whole group is considered significant. From the table, the quartile medians indicate that graduates from large schools rank highest in intelligence. Many reasons may be assigned for such results. Among them are: that large high schools are found in densely populated centers; that pupils in large schools become test-wise; that library facilities are more adequate; that tests are built to a degree upon achievement; and numerous other reasons.
# A Comparison of the Distribution of Grade Points Made in High School and in College

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<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>2.90</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>2.80</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>2.70</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2.60</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>2.50</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>1</td>
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# Grade Point values are: 3, A; 2, B; 1, C; 0, D; -1, F.

**# # Incomplete H.S. records cause difference in H.S. and College totals.**
Table II gives a comparison of the distribution of the grade points made in high school and college, used in this study. The grade point frequency is grouped according to the teacher size classification. Since the students in this study come from practically all parts of Kentucky, it gives a fair cross-section of high school grading in the state. The college grade points are taken from the records of only one institution, which assures a degree of uniformity. The step interval is .1, and the range from -1 to 3, or from "F" to "A".

Notice that the total number of grades in high school is less than the number of college grades recorded. The reason for this is, that often the number of units made in high school appear on the transcript without the grade mark.

All high schools, approved or accredited, are required by state laws, as well as rules governing accrediting relations, to keep permanent records of work done by students. These records become the property of the school system to be used as records of achievement and as a means of transferring from one school to another, especially, from high school to colleges and to schools higher than the secondary level. These records are generally accepted as the value designated by the school issuing them. There seems to be a high degree of uniformity in the grading. Such grades are expressed by letters or by per cent, but all schools do not use the same system.

In Table II, high school records are used to compare the standing of the students from the schools of varying sizes. Grades obtained in college are used to compare the relative scholastic success made by these students. In order to have a
uniform system of marking, the grade point is used for both high school and college grades, with the following valuation:

Grade point 3 represents "A";
2 represents "B";
1 represents "C";
0 represents "D";
-1 represents "F".

These grade expressions will be used inter-changeably in description which follows. Table II shows that students from the two-teacher school have high school grade points ranging from .50 to 3. It is to be noticed that 90.41 per cent of the students have grade points of 1 ("C") or above. Those from the three-teacher range from .50 to 2.90 with 91.66 per cent of 1 or above. Students from the four-teacher ranging from .40 to 2.80 with 89.79 per cent of 1 or above, and those from the large school ranging from .30 to 3, with 93.22 per cent of 1 or above.

In the college grades the following is noticed: the two-teacher schools ranges from grade point .40 to 2.60, with 47.87 per cent grade point 1, ("C") or above; three-teacher range from -1, ("F") to 2.70, with 53.33 per cent of 1 or above; four-teacher from -1 to 2.60, with 50 per cent of 1 or above; and five or more teacher, range from -1 to 3, with 58.22 per cent of 1 or better.
TABLE III

A COMPARISON OF THE DISTRIBUTION OF MEDIANS AND PERCENTAGES OF HIGH SCHOOL AND COLLEGE GRADES

<table>
<thead>
<tr>
<th>Size of High School Expressed in Number of Teachers</th>
<th>Two Teachers</th>
<th>Three Teachers</th>
<th>Four Teachers</th>
<th>Five or More Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>High School Grade Point Median</td>
<td>1.91</td>
<td>1.85</td>
<td>1.87</td>
<td>1.96</td>
</tr>
<tr>
<td>College Grade Point Median</td>
<td>.85</td>
<td>1.02</td>
<td>.95</td>
<td>1.17</td>
</tr>
<tr>
<td>H.S. Grade Point Per Cent of 2 (&quot;B&quot;) and above</td>
<td>45.20</td>
<td>39.58</td>
<td>41.81</td>
<td>40.10</td>
</tr>
<tr>
<td>Coll. Grade Point Per Cent of 2 (&quot;B&quot;) and above</td>
<td>5.31</td>
<td>15</td>
<td>6.66</td>
<td>17.77</td>
</tr>
<tr>
<td>H.S. Grade Point Per Cent of 1 (&quot;C&quot;) and above</td>
<td>90.41</td>
<td>91.66</td>
<td>89.79</td>
<td>93.22</td>
</tr>
<tr>
<td>Coll. Grade Point Per Cent of 1 (&quot;C&quot;) and above</td>
<td>47.87</td>
<td>53.33</td>
<td>50.00</td>
<td>58.22</td>
</tr>
<tr>
<td>H.S. Grade Point Per Cent Below 1 (&quot;C&quot;)</td>
<td>9.58</td>
<td>8.33</td>
<td>10.20</td>
<td>6.77</td>
</tr>
<tr>
<td>Coll. Grade Point Per Cent Below 1 (&quot;C&quot;)</td>
<td>52.12</td>
<td>46.66</td>
<td>50.00</td>
<td>41.77</td>
</tr>
</tbody>
</table>
Table III, a comparison of the distribution of medians and percentages of high school and college grades shows that the high school median of grade points are highest in the large school and next in the smallest with little difference in the three and four teacher size. In college grade points the medians show the large school to be 1.17, the three-teacher 1.02, while the two-teacher is only .85. The per cent of college grade point 2 ("B") and above shows the small schools to range 5.3, 15, and 6.66 respectively which is below 17.77 the large school record.

Grade point of "C" standing is required as a minimum for graduation from college. The table shows the smallest school to have fewer than half of its graduates meeting the minimum requirements. The large school which shows a record of 58.22 per cent of "C" or above indicates better results in scholastic achievement. Three-teacher schools show 53.33 per cent of grade point 1 and above. Thus, only one group of the small schools show more than 50 per cent of "C" rank and above.

The table shows that 52.12 per cent of graduates from the two-teacher school are on probation, and 50 per cent of those from the three-teacher size. All of the above signifies the superiority of the large high school, but the comparison of the distribution of the percentages of failure in college English and mathematics suggest difference in specific courses.
<table>
<thead>
<tr>
<th></th>
<th>Size of High School Expressed in Number of Teachers</th>
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<tbody>
<tr>
<td></td>
<td>Two Teachers</td>
</tr>
<tr>
<td>Number of College Students Considered</td>
<td>94</td>
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<tr>
<td>Number Failed in English</td>
<td>31</td>
</tr>
<tr>
<td>Number Failed in Mathematics</td>
<td>19</td>
</tr>
<tr>
<td>Per Cent Failed in English</td>
<td>32.9</td>
</tr>
<tr>
<td>Per Cent Failed in Mathematics</td>
<td>20.2</td>
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</table>
Table IV shows in the percentages of English failures, the
two-teacher to have 32.9, the three-teacher 26.6, the four-
teacher 23.3, and the large school 19.5. The range from the
two-teacher to the large school is 13.4. Such results may be
due to strictly departmental practices, tenure of teachers,
better English instruction in the elementary school, the access
to better readings and materials, special supervision, and
severe public criticism. Small high schools are often the
training field for the untrained teacher who profits by
experience and is rewarded by a position in a larger school
after she becomes more proficient.

The table shows the percentages of failures in mathematics
to run: two-teacher 20.2, three-teacher 20.4, four-teacher 20.4,
and the large school 22.2. This presents a different picture.
The small schools have fewer failures in college mathematics
than the large schools. The difference is relatively
insignificant, yet, the comparison suggests a number of
problems as to the causes. Some questions as to why such
conditions might exist give rise to certain criticism and
special investigation. The findings of the Commission of
Secondary Education of the Association of Colleges and
Secondary Schools of the Southern States, relative to member
high schools in Kentucky, show that 20.8 per cent of freshmen
failed in mathematics in 1930, 5 and 22.6 per cent in 1932. 6

5 Joseph Roemer, "The Report of the Committee on College Freshmen
Grades," Proceedings of the Southern Association of Colleges and
6 Ibid., (December 1-2, 1932), p. 218.
In the 1930 report the statement is made that "mathematics has the greatest percentage of failures". That statement is true in this study when applied to the large high schools but not true in the small high schools, since English failures are 32.9 per cent in the two-teacher school to 22.2 per cent failures in mathematics in the large schools. Table IV shows that the percentage of failures in English decrease as the size of the school increases, while the difference in mathematics is of little importance.

In this study 415 students who took the American Psychological Examination, and the 328 who took the Kentucky Classification test, show that the large high school graduates ranked highest according to the quartile ranking. The high school grade points have a tendency to be higher as the size of the school increases. High school marks seem to bear a degree of uniformity, which may be due to traditional practices among high school teachers. The difference in college grades may be an index as to the reliability of such grading. In this study, the results show that the graduates from the large schools have a higher standing in college. More than half have "C" standing or above. The large schools have 17.77 per cent of "B" and above, while the three-teacher schools have 15 per cent of "B" and above. The two-teacher and four-teacher schools have 52.12 and 50 per cent respectively of students who have less than "C" standing in college, or who are on probation. However, the

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three-teacher school ranks well with the large school in
general grade points. The large schools have fewer failures
in college English but more in mathematics than the small high
schools.

Small high schools in Kentucky give evidence of faithful
efforts in the rendering of effective educational services.
There is proof that some good work is being done in these
schools. Even with the disadvantages that must necessarily
handicap such units, the efficiency found in this study
justifies the existence of such schools. The large high
schools show a higher degree of efficiency, but factors other
than size may have greater influence than size.
CHAPTER V
SUMMARY, CONCLUSIONS, AND SUGGESTED RECOMMENDATIONS

An attempt was made to introduce enough historical background and various criticisms regarding the high school situation to justify the pleasure and profit that might be gained in this investigation. It is to be distinctly understood that this study applies only to white high schools in Kentucky, whose graduates attend the Western Kentucky State Teachers College. Conclusions and recommendations are based upon scholastic achievement in college. While this study does not clearly establish the efficiency of the high schools of varying sizes, it reveals certain conditions that may assist in improving the system by scientific research.

Summary and conclusions.— 1. The data used were obtained from the Registrar's office, and from the office of the Head of the Department of Education of the college.

2. Data by other investigators were used for comparison only.

3. The students, whose records were used, are from various parts of Kentucky.

4. The American Council Psychological Examination, and the Kentucky Classification test used in this study gave the intelligence ranking in favor of the large high school.

5. The schools were classified as to size based upon the number of teachers employed in each high school system.

6. Failures in college English and mathematics were used to compare results in specific courses.
7. The high school and college grade points were based upon general courses.

8. All grades were reduced to the grade point system.

9. College grade points revealed that in scholastic achievement the large high school surpassed the small.

10. English failures exceed those of mathematics.

11. English failures are decidedly highest in the small schools.

12. The per cent of failures in mathematics compares well with those reported by the Association of Colleges and Secondary Schools of the Southern States.

13. There is a slight difference in failures in mathematics in favor of the small high school.

14. Only students whose transcript show high school record contained grade record valuation were used in tabulating high school results.

15. Only two groups of the small high school show that half their graduates met the minimum requirement toward graduation.

From this study, it is reasonable to conclude that the high schools of Kentucky are rendering a great service. The development of secondary education has been in the direction of greater numbers and more efficiency. Criticisms for high schools in general have, in the main, been constructive criticisms. Out of research and investigations will come a greater appreciation for this phase of the education system.

This investigation reveals that high schools of the small
type are handicapped from many standpoints. They usually start from the demand of local communities to expand educational opportunities "at home". Under such conditions the minimum of instruction, supervision, finances, plant, and equipment generally exist. School spirit, ambitious teachers, and enthusiasm on the part of the pupils must prevail as shown by results of graduates to attain scholastic achievement in institutions of higher learning. A comparison of scholastic success is in favor of the large high school.

Recommendations.-- The following suggestive recommendations grew out of the difficulties found in obtaining data for this study and the results of the findings, together with opinions expressed by superintendents, principals, and teachers with whom the writer has come in personal contact.

1. Each high school should have reliable data of a pupil's academic ability and scholastic aptitude.

2. Some uniform grading system, using the same grade point valuation, that takes care of failures, the same as achievement should be adopted.

3. Some uniform blank for transcripts should be adopted and required by the entire educational system within the State.

4. The making and keeping of records in various schools should receive more attention in the training of principals and teachers.

5. Teachers should inform high school students what is expected of college students.

6. A study should be made to determine the number and causes of "failures" in different subjects in high school,
and the after-effect in college.

7. A study should be made to determine the ratio of the different techniques in the teaching of English, and of teaching mathematics.

8. Why small high schools rank well with large schools in results from records in mathematics, though the training of such teachers is usually inadequate and the tenure so short, is basis for investigation.

9. What special efforts do English departments in college make to train teachers for teaching high school English is proposed.

10. Does the size of the high school or the courses offered influence graduates to enter college? Such questions should be answered.

Investigations proposed in the recommendations and questions would aid in determining the efficiency of high schools of varying sizes.
BIBLIOGRAPHY


13. Minutes of the Committee on Standards of the Committee on Accrediting of Secondary Schools (Lexington, Kentucky, February 11, 1933).


