THE RELATION BETWEEN SIZE OF HIGH SCHOOL ATTENDED AND SCHOLASTIC SUCCESS IN COLLEGE

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MASTER OF SCIENCE

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The writer wishes to express his appreciation to Professor R. J. Clinton for the helpful criticisms and suggestions given him throughout the investigation and preparation of this thesis.

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THE RELATION BETWEEN SIZE OF HIGH SCHOOL ATTENDED
AND SCHOLASTIC SUCCESS IN COLLEGE

Chapter I  Introduction

The present trend in education is school consolidation. We hear many statements as to the desirability of larger schools. It seems to be generally thought that larger schools turn out a superiorly trained child. There are many reasons why this should be true, but definite proof that it is true is lacking. The purpose of this thesis is to see what relation between size of high school attended and success in college work at Oregon State College does exist, and to what extent the relationship holds true. Such factors as influence of the teacher's training, the salary paid the teacher, and the effect of superior school equipment in use in the larger schools, are largely outside the scope of this study. These are contributing factors, but the principle interest will be the size of high school, and the students they send to Oregon State College. The problem is a vital one to Oregon. More than fifty per cent of her high schools have an enrollment of less than fifty pupils. For that reason, if for no other, this study should be justified.

The problem of relation of size of high school attended to scholastic success is only part of an educational problem of primary importance. Our public schools, as they are to-day, attempt to give equal educational opportunity
to all. By the very nature of life, equality is an impossibility. Equal educational opportunity cannot exist in school systems administered by states and districts. Such factors as the population of the community, teacher salary, community economic conditions, teacher training, and state educational standards are all problems which affect education opportunity. It is probable that many of these factors are contained in the problem of size of high school attended and success in college work. My problem then, is to see if there is a relationship between the size of the high school a pupil attends and the scholastic success he achieves at Oregon State College. If there is a relationship, we must find whether it is positive or negative, and to what extent it exists.

In this thesis, material has been gathered from similar studies, and studies having a direct relation to our thesis. The original data was obtained from the registrar's office of Oregon State College. Material was obtained from periodicals and books, and in some cases from Masters' Theses from other colleges.

The field of investigation has been limited to relation of size of the high school that the student attended in preparation for his college career, to the success he achieved in college. Success in college has been considered wholly on the basis of grades. It would have been most interesting to have judged success by other standards such
as: participation in activities, adaption to school life, ethical character, and personality adjustment as measured by the Pressy X-O Test. The writer was restricted because of a limited number of cases in certain class groupings, e.g. Class I (0-49) and Class II (50-99) High Schools. Also, there were only twenty-three cases from private high schools of the state. The use of other material was prohibitive because of the time and labor necessary to put it into usable form. Such data as the four year college grade average of students from different class high schools, the percentage of students who finish the four year college course, and the correlation between high school grades and college grades is of this class. The supplementary material was practically all available through the school library. In a few instances the institution publications and the theses of other schools were not circulated and were, thus, not obtainable.
Chapter II
Collection and Preliminary Treatment of Data

In making a study in which the chief interest lies in comparisons, one must adopt some plan of treating the data obtained. In this particular study the first step in the procedure was to decide how to make comparisons between size of high school attended and the student's success in college. The writer decided to show this relation by correlating: (1) the first term grade with the year average, (2) the first term grade with the psychological entrance examination grade of the student and (3) the psychological examination and the average year grade. Before this could be done, the high schools had to be classified according to size. This was accomplished by grouping the high schools according to enrollment. Enrollment was based upon the number of pupils enrolled in the school according to the 1930 "Official Directory of Superintendents". For the purpose of this study the schools were classified as follows:

TABLE I
Showing the Groupings of the Schools in this Study.

<table>
<thead>
<tr>
<th>Class</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class I</td>
<td>1 to 49</td>
</tr>
<tr>
<td>Class II</td>
<td>50 to 99</td>
</tr>
<tr>
<td>Class III</td>
<td>100 to 299</td>
</tr>
<tr>
<td>Class IV</td>
<td>300 to 499</td>
</tr>
<tr>
<td>Class V</td>
<td>500 and over</td>
</tr>
</tbody>
</table>
Separate classes were made for Portland and Corvallis. They were put in separate classes because the conditions surrounding their students were different than those of the other classes. Portland Schools are administered under a city school system. The conditions and opportunities are probably different than those in smaller cities. Corvallis students on the other hand are still living in their home environment. It would be well to see what the effects of these conditions are.

The data for this study obtained at the registrar's office was quite readily available. In collecting data the students were arranged according to the class of high school they attended. Their names, first term grades, year grades, psychological examination ratings were all placed on one line. Not all of the students from Classes III, V and VII were used. Many more students fell in these groupings than in classes I, II and IV. For this reason it seemed advisable to decrease the number of these students, thus making it easier to deal with them.

In order to obtain a random sampling in classes III, V, and VII the following methods were employed: (1) In class III and V every other student was used, (2) In class VII every fourth student was used. The number of students in
each class resulting from this method of sampling made it seem that the class sample should be a good indication of the quality of the whole class. After all the material had been gathered a series of correlations were run on the material of each class of high school. In running these correlations two different methods were used. Where the number of students was small the Method of Rank-Difference was used. Where the number was large the Product-Moment Method was used. These methods will be explained more fully later. In order to understand the results one must understand the methods employed in obtaining the results. The methods used must be explained in the investigation, for this reason, to explain them now would be repetition.

(1)*Standard scatter diagrams of G. M. Ruch and G. D. Stoddard were used.
Chapter III
A Review of Related Studies

Many studies have been made on questions that are somewhat related to this thesis, however, no studies have been made which are exactly the same in all phases. Several studies have been made which have like elements, some are exactly alike, while others treat of the same data from a different approach. Other studies bear such a close relationship to the problem that they shed some light on our problem and make it more understandable.

Recently many investigations have been conducted on the relation of intelligence to college grades. MacPhail when he wrote his book reported that the central tendency is between .40 and .45. Symonds prints the following table in his book.

Average Correlation of Various Intelligence Tests with College Marks

<table>
<thead>
<tr>
<th>Test</th>
<th>Jordan</th>
<th>MacPhail</th>
<th>Troops</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thorndike Intel.</td>
<td>.50</td>
<td>(.52-.55)</td>
<td></td>
</tr>
<tr>
<td>Test for H. S. Grads.</td>
<td>.47</td>
<td>(.40-.43)</td>
<td></td>
</tr>
<tr>
<td>Brown</td>
<td>.33</td>
<td>.40</td>
<td></td>
</tr>
<tr>
<td>Thurstone</td>
<td></td>
<td>.44</td>
<td></td>
</tr>
<tr>
<td>Otis</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(1) MacPhail, A.H. Intelligence of College Students, Warwick and York Baltimore 1924.
Symonds suggests that the predictive value of different examinations is roughly correlated with the length of the examination. Thurstone reports that the new American Council Intelligence Test is yielding a most satisfactory prognosis of college work. He reports a correlation of .54 between that test and college success in the University of Chicago. Other writers have obtained correlations between college grades and intelligence of greater and of less magnitude.

Jones found a correlation of about .30 for men and .50 for women. He accounted for the great difference between men and women as being due to greater seriousness on the part of the women. Jones also found a correlation of .24 between intelligence test rating and freshman college grades at the University of Buffalo. Jordan in correlating high-school marks with intelligence found a correlation of .45

(3) Thurstone, L.L. "Psychological Tests for College Freshmen", Educational Record 5:282-294 April, October 1925.
for Otis, .476 for Army Alpha, .476 for Miller and .492 for
Terman's intelligence test. Chambers in a study of 200
cases found a correlation of .33 between college grades and
intelligence. In a study using 57 cases he found a corre-
lation of .53. Chambers was particularly interested in
prognosing college achievement from Pressey X-0 Tests. He
concluded, however, that the X-0 test predicted achievement
about as well as intelligence tests. He also stated that
X-0 tests with an intelligence test gave an increased pre-
dictive value over the intelligence test alone.

Another method of predicting college success has been
by using high school grades. Many studies have been made
on this problem by different authors. Odell found a cor-
relation of .54 between high school grades and college
grades. He also found the correlation between high school
grades and first year grades to be a .55. Smith found the
correlation on this subject to be .53.

College failure, although it might be the antonym of
college success, has a direct relation to college success.

Any class of high school that has a large number of its
students fail in college is either failing to prepare them,

(6) Chambers O.R. "Character Trait Tests and the Prognosis
of College Achievement" J. of Abnormal & Social Psychol-
ogy 20:303-11 October 1925.
(7) Odell C.W. "Predicting the Scholastic Success of Col-
lege Students". Univ. of Illinois Bulletin Sept.30,1930.
(8) Smith F.O. "A Rational Basis for Determining Fitness for
College Entrance" Univ of Iowa Studies in Education.
Vol. I No. 3 1912.
or they lack intelligence. Different authors give different reasons for college failure. Beethham gives these reasons: (1) College is overcrowded, (2) Wrong preparation and training in high school, (3) Lack of ability, (4) Insufficient funds, (5) Not adapted to the college course, (6) Too many outside activities, (7) Improper use of time.

Bears concludes that a degree of intelligence adequate to cope with the college world is the most essential factor. Allen found that of the high school seniors taking the Thurstone Psychological test, 49 per cent of the boys and 44 per cent of the girls intending to continue their educational careers were good college risks. The rest were poor risks because of lack of native ability.

Humphrys made a very complete study on the relationship of size of high school and the ability of their graduates attending the University of Oregon. First Humphreys wished to ascertain; (1) if the large high school were sending graduates of superior ability to those of the small high school, (2) if the relationship was in direct proportion to size, or (3) if no direct relationship existed, cer-

tain schools showed marked inferiority or superiority to others. Second, he wished to know if certain class high schools sent students of superior intelligence to the university. Lastly, he wanted to find out if certain factors increased or decreased the relationship between size of high school and success at the University. He considered such factors as: (1) High school marks, (2) Pupil-teacher ration, (3) Industry of pupils, (4) Leadership of pupils, (5) Per pupil cost, (6) Average salary of teacher, and (7) Experience of teacher. Humphrey's findings on the preceding questions, for the years 1924-27, were as follows: (1) Group VII (500 and over) and Portland high school graduates had higher average percentile rankings in intelligence than groups II (50-99) and VI (400-499). (2) Graduates of private secondary schools and groups VI (400-499), Group I (1-49), and group II (50-99) obtained group averages in University marks below all other groups, (3) Group VII (500 and over) and Portland high schools were higher in average college marks than any other groups. He further found that, (1) small high schools give higher marks and are not as exact in marking as the larger high schools, (2) schools of 200 and over have about the same pupil-teacher ratio while the small schools have a small pupil-teacher ratio, (3) high schools with enrollments of 100 or less have a 46 per cent higher per pupil cost than the

large schools, (4) Small high schools pay on the average about the same salaries as large high schools, (5) small schools have teachers of less experience than larger schools.

Humphrey's general conclusions are as follows:

"1. No direct relationship exists between the size of high school and the average university marks which the graduates of the school obtain during their first term at the University of Oregon."  "2. No direct relationship exists between the size of high school and the average Percentile Rank in intelligence of the graduates of the school."  "3. Size of high school when used above does not aid in the prediction of university marks. Size of high school when combined with the high school average of the graduates appears to add very slightly in the prediction of the average university marks of the graduate."

One of the recent studies made on the relation of size of high school to college success, was conducted by Boe.

His method of judging success or failure was by honor students in the case of the first and dropping from school in the second. Boe used students of the years 1924 to 1929. His method of sampling was very accurate and he obtained a sample of 1000 students which should have been a fair percentage of the total number of students. There were

(13) Boe O.G. The Relation of Size of High School Attended to Scholastic Success. M.A. University of Illinois 1931.
24,000 students who were attending or had attended the University of Illinois during the fore-mentioned years. Boe's conclusions should be well worth considerable emphasis because of the likeness of his study to this thesis. He says, "no general conclusions can be made except that the size of high school attended has practically no effect on scholastic success in college." In addition to this foregoing general statement he found the following tendencies to be apparent:

1. Attendance in a high school with less than 100 enrolled will lessen the chance for success in college.

2. Attendance in a high school with enrollment from 101 to 250 presents a peculiar situation. The chance for high honors seem to be very good, but the percentage of failures seem about average. This probably means that the high school of that size is excellent for the ones who are naturally industrious and take advantage of the possibilities of individual help not possible in a larger system.

3. High schools with enrollments from 251 to 600 give our colleges and universities about average scholarship.

4. High schools with enrollments from 601 to 1000 produce students a little less than average in ability.

5. High schools with enrollments over 1000 furnish students of a little better than average.

6. Students from other states are above average in scholastic ability.

7. Attendance in private secondary schools should be
avoided as they cannot compete with the public high schools.

8. Students from Chicago are about average in scholastic ability.

9. Living at home while attending college increases chances for either scholastic success or failure."

A few other studies have been made which deserve mention. (14) Stalmaker and Remmers in a study they conducted, concluded that: (1) "The size of high school in Indiana is significantly related to elimination from Purdue University", (2) "First semester freshmen average grades show a slight but significant relationship with size of high school". Reed made a study of mental ability, age, and grade. The correlations he obtained were so low that it lead the author to conclude that, since the correlation between mental ability and scholarship is quite low, application is most important. Effort should be rewarded because it is the only factor that the student controls.

The foregoing studies have been mentioned, and explained to try and show the importance of predicting success in college. Brooks has pointed out that a third of the freshmen entering our American colleges fail to continue their


"An analysis of the 112 honor students at the University of Illinois whose names have been entered on bronze tablets during the 5 year period under consideration (1924-29) relative to percent coming from secondary schools of the different sizes and types represented. The red line represents random sample."
study. Twelve per cent of these freshmen are accounted for by illness, lack of funds, and transfer. Twenty per cent fail so badly in college that they voluntarily or involuntarily withdraw from college. Many aspersions have been cast at the small high schools because of their asserted inability to train the child as well as the larger schools. These studies should help one to understand the small school better.

Summing up the ideas of these different studies, one can assume certain premises, to wit: (1) There is a positive relation between size of high school attended and college success. (2) Certain factors so complicate the relation of size of school attended to college success, that definite and undisputable relations are hard to obtain. It is to be expected that influences such as; mental ability of the students, economic condition of the school community, scholastic training of parent and acquaintances, and social progress of the community are the factors that must be accounted for in correlating college success and size of high school attended.
Chapter IV

The Investigation

In this investigation the writer ran correlations on first term grades, year average, and psychological examination rating. The average for each class was found in psychological rating, first term grade, and year grade. Other averages and percentages were found which throw some light on the subject.

When dealing with less than fifty cases in this study, the Rank-Difference Method was used. The formula for this method is: \( \rho = 1 - \frac{6E D^2}{N(N^2-1)} \) the probable error is found by using the formula \( PE_r = \sqrt{\frac{0.63(1-r^2)}{N}} \). The "\( \rho \)" of the Rank-Difference Method was changed into an "\( r \)" of the Product-Moment by means of the table XX in Garrett. Correlations were worked out by this method for two groups; Class I (1 to 49) and private high schools.

TABLE II

A COMPARISON OF CLASS I AND PRIVATE HIGH SCHOOLS

<table>
<thead>
<tr>
<th>Correlation of</th>
<th>Class I</th>
<th>Private Hi. School</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st term &amp; year</td>
<td>( r = .82 \pm .031 )</td>
<td>( r = .87 \pm .061 )</td>
</tr>
<tr>
<td>1st term &amp; P. Test</td>
<td>( r = .31 \pm .083 )</td>
<td>( r = .41 \pm .120 )</td>
</tr>
<tr>
<td>Yr. and Psych. Test</td>
<td>( r = .44 \pm .074 )</td>
<td>( r = .51 \pm .106 )</td>
</tr>
</tbody>
</table>

(3) Thurstone Psychological Examination for College Freshmen.

In this table, the "r" of Class I appears to be consistently slightly lower in all the relations correlated. The fact that there were so few cases from the private high schools makes the results highly unreliable and the probable error high.

For the remainder of the six classes of schools the Product-Moment Method was used. Scatter diagrams made by Ruch and Stoddard were used. The formula for use with this is:

\[ r = \frac{\frac{\sum XY}{N} - (\frac{\sum X}{N} \cdot \frac{\sum Y}{N})}{\sqrt{\left(\frac{\sum X^2}{N} - (\frac{\sum X}{N})^2\right) \left(\frac{\sum Y^2}{N} - (\frac{\sum Y}{N})^2\right)}} \]

\[ P_{E_r} = 0.745 \frac{1 - r^2}{\sqrt{N}} \]

By using this formula the correlations in the following table were obtained:

**TABLE III**

**CORRELATION BY CLASS OF THE HIGH SCHOOLS OF OREGON**

<table>
<thead>
<tr>
<th>Class of School</th>
<th>Correlation 1st Term &amp; yr.</th>
<th>Correlation 1st Term &amp; P.T.</th>
<th>Correlation Yr. &amp; Psych. Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>( r = 0.82 \pm 0.024 )</td>
<td>( r = 0.31 \pm 0.093 )</td>
<td>( r = 0.44 \pm 0.084 )</td>
</tr>
<tr>
<td>II</td>
<td>( r = 0.82 \pm 0.023 )</td>
<td>( r = 0.46 \pm 0.056 )</td>
<td>( r = 0.47 \pm 0.056 )</td>
</tr>
<tr>
<td>III</td>
<td>( r = 0.95 \pm 0.006 )</td>
<td>( r = 0.64 \pm 0.034 )</td>
<td>( r = 0.65 \pm 0.037 )</td>
</tr>
<tr>
<td>IV</td>
<td>( r = 0.77 \pm 0.026 )</td>
<td>( r = 0.39 \pm 0.053 )</td>
<td>( r = 0.44 \pm 0.051 )</td>
</tr>
<tr>
<td>V</td>
<td>( r = 0.92 \pm 0.009 )</td>
<td>( r = 0.47 \pm 0.046 )</td>
<td>( r = 0.52 \pm 0.039 )</td>
</tr>
<tr>
<td>VI</td>
<td>( r = 0.92 \pm 0.014 )</td>
<td>( r = 0.50 \pm 0.056 )</td>
<td>( r = 0.52 \pm 0.055 )</td>
</tr>
<tr>
<td>VII</td>
<td>( r = 0.95 \pm 0.005 )</td>
<td>( r = 0.41 \pm 0.045 )</td>
<td>( r = 0.44 \pm 0.046 )</td>
</tr>
</tbody>
</table>
The above correlations represent the relation of the first term grades to the average grade of the year's work, the first term grade to the score made on the psychological examination, and the year grade average to the psychological examination. If the conditions were the same in every school and effort and mental ability were equal in all cases, the correlations would be the same for each high school class. This is not the case so there must be some reasons for the differences. They must be accounted for.

In order to understand the meaning of grade averages by schools, the reader must know what the average grades for freshmen as a whole are. The tables that follow show this very nicely.

| TABLE IV |
| FRESHMAN AVERAGE FOR THE YEAR 1929-30 |

<table>
<thead>
<tr>
<th>1st Term</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Body</td>
<td>1.23</td>
</tr>
<tr>
<td>Freshman Class</td>
<td>1.06</td>
</tr>
<tr>
<td>Freshman Men</td>
<td>.95</td>
</tr>
<tr>
<td>Freshman Women</td>
<td>1.26</td>
</tr>
<tr>
<td>Oregon Freshmen</td>
<td>1.06</td>
</tr>
<tr>
<td>Washington Freshmen</td>
<td>1.31</td>
</tr>
<tr>
<td>Idaho Freshmen</td>
<td>.93</td>
</tr>
<tr>
<td>California Freshmen</td>
<td>1.05</td>
</tr>
<tr>
<td>All other Freshmen</td>
<td>.98</td>
</tr>
</tbody>
</table>
TABLE V

FRESHMAN AVERAGE FOR THE YEAR 1930-31

<table>
<thead>
<tr>
<th></th>
<th>1st Term</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Body</td>
<td>1.28</td>
<td>1.34</td>
</tr>
<tr>
<td>Freshman Class</td>
<td>1.10</td>
<td>1.16</td>
</tr>
<tr>
<td>Freshmen Men</td>
<td>1.03</td>
<td>1.10</td>
</tr>
<tr>
<td>Freshmen Women</td>
<td>1.23</td>
<td>1.27</td>
</tr>
<tr>
<td>Freshmen- Oregon</td>
<td>1.11</td>
<td>1.16</td>
</tr>
<tr>
<td>&quot; Washington</td>
<td>1.06</td>
<td>1.19</td>
</tr>
<tr>
<td>&quot; California</td>
<td>1.01</td>
<td>1.16</td>
</tr>
<tr>
<td>&quot; Idaho</td>
<td>1.35</td>
<td>1.42</td>
</tr>
<tr>
<td>&quot; All other States</td>
<td>.87</td>
<td>1.04</td>
</tr>
</tbody>
</table>

These tables not only give the freshmen averages, but other averages that lend themselves to comparisons. It is also interesting to note the differences in grades between the two years recorded. The fluctuation in grade averages of out of state freshmen can be partially, but not wholly accounted for by the fact that there are relatively few students which come under each state heading.

If all the students who came to Oregon State College had equal mental ability and equal training, the freshmen average would be the same as the average for each class of high school. Such unbalancing factors as effort and interest could presumably be ignored if the number was great enough. Students do not have equal mental ability as rated by the psychological examination. Neither do they
have the same grade averages.

**TABLE VI**

**RANGE OF GRADES**

<table>
<thead>
<tr>
<th>Class</th>
<th>First Term</th>
<th>Year</th>
<th>Psych. Exam.</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>0 - 2.58</td>
<td>17 - 2.63</td>
<td>67 - 2.46</td>
</tr>
<tr>
<td>II</td>
<td>0 - 2.71</td>
<td>10 - 2.45</td>
<td>44 - 2.56</td>
</tr>
<tr>
<td>III</td>
<td>0 - 2.84</td>
<td>0 - 2.82</td>
<td>45 - 2.69</td>
</tr>
<tr>
<td>IV</td>
<td>0 - 2.58</td>
<td>10 - 2.52</td>
<td>25 - 2.37</td>
</tr>
<tr>
<td>V</td>
<td>0 - 2.75</td>
<td>12 - 2.65</td>
<td>24 - 2.86</td>
</tr>
<tr>
<td>VI</td>
<td>0 - 3.00</td>
<td>0 - 3.00</td>
<td>37 - 2.75</td>
</tr>
<tr>
<td>VII</td>
<td>0 - 2.87</td>
<td>11 - 2.77</td>
<td>52 - 2.49</td>
</tr>
</tbody>
</table>

**TABLE VII**

**AVERAGES FOR THE YEAR 1930-31 OF THE SEVEN CLASSES OF HIGH SCHOOLS**

<table>
<thead>
<tr>
<th>Class School</th>
<th>1st Term Average</th>
<th>Standard Deviation</th>
<th>Year Average</th>
<th>Standard Deviation</th>
<th>Psych. Exam. Average</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>1.03</td>
<td>.0645</td>
<td>1.16</td>
<td>.0576</td>
<td>1.47</td>
<td>.0468</td>
</tr>
<tr>
<td>II</td>
<td>1.10</td>
<td>.0603</td>
<td>1.09</td>
<td>.0567</td>
<td>1.22</td>
<td>.0449</td>
</tr>
<tr>
<td>III</td>
<td>1.16</td>
<td>.0694</td>
<td>1.19</td>
<td>.0621</td>
<td>1.43</td>
<td>.0565</td>
</tr>
<tr>
<td>IV</td>
<td>1.13</td>
<td>.0635</td>
<td>1.19</td>
<td>.0564</td>
<td>1.36</td>
<td>.0438</td>
</tr>
<tr>
<td>V</td>
<td>1.09</td>
<td>.0686</td>
<td>1.13</td>
<td>.0584</td>
<td>1.42</td>
<td>.0476</td>
</tr>
<tr>
<td>VI</td>
<td>1.11</td>
<td>.0725</td>
<td>1.17</td>
<td>.0693</td>
<td>1.45</td>
<td>.0483</td>
</tr>
<tr>
<td>VII</td>
<td>1.28</td>
<td>.0649</td>
<td>1.26</td>
<td>.0603</td>
<td>1.52</td>
<td>.0488</td>
</tr>
</tbody>
</table>
The averages in this table are arithmetic averages of all students in each class high school.

During the year 1929-30 forty-one high schools entered five or more students. These students meet with markedly different success. Each school has been classified according to class size and their comparative standings arranged according to grade averages. It is certain that there is considerable change from year to year. The mental ability of the student, the specific subject preparation, the course pursued, and the high school standards of teaching and grading make changes in school standing inevitable.

**TABLE VIII**

**COMPARATIVE STANDING OF OREGON HIGH SCHOOLS**

**ENTERING AT LEAST FIVE STUDENTS**

**IN FRESHMAN CLASS SEPTEMBER 1929**

<table>
<thead>
<tr>
<th>School</th>
<th>No. of Students Completing Term</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 IV Silverton</td>
<td>9</td>
<td>1.78</td>
</tr>
<tr>
<td>2 VII Roosevelt-Portland</td>
<td>6</td>
<td>1.50</td>
</tr>
<tr>
<td>3 VII Franklin -Portland</td>
<td>25</td>
<td>1.41</td>
</tr>
<tr>
<td>4 V Baker</td>
<td>8</td>
<td>1.36</td>
</tr>
<tr>
<td>5 III Condon</td>
<td>5</td>
<td>1.31</td>
</tr>
<tr>
<td>6 VII Benson -Portland</td>
<td>31</td>
<td>1.30</td>
</tr>
<tr>
<td>7 IV Pendleton</td>
<td>8</td>
<td>1.28</td>
</tr>
<tr>
<td>8 VII Grant -Portland</td>
<td>58</td>
<td>1.24</td>
</tr>
<tr>
<td>School</td>
<td>No. of Students Completing Term</td>
<td>Average</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>--------------------------------</td>
<td>---------</td>
</tr>
<tr>
<td>VII Jefferson-Portland</td>
<td>34</td>
<td>1.21</td>
</tr>
<tr>
<td>V Astoria</td>
<td>11</td>
<td>1.17</td>
</tr>
<tr>
<td>IV Woodburn</td>
<td>6</td>
<td>1.13</td>
</tr>
<tr>
<td>III Redmond</td>
<td>7</td>
<td>1.13</td>
</tr>
<tr>
<td>V Grants Pass</td>
<td>11</td>
<td>1.12</td>
</tr>
<tr>
<td>VII Washington-Portland</td>
<td>44</td>
<td>1.12</td>
</tr>
<tr>
<td>V Bend</td>
<td>12</td>
<td>1.12</td>
</tr>
<tr>
<td>VII Commerce-Portland</td>
<td>5</td>
<td>1.07</td>
</tr>
<tr>
<td>IV Newburg</td>
<td>5</td>
<td>1.07</td>
</tr>
<tr>
<td>VII Lincoln-Portland</td>
<td>28</td>
<td>1.07</td>
</tr>
<tr>
<td>IV Marshfield</td>
<td>11</td>
<td>1.04</td>
</tr>
<tr>
<td>VI Corvallis</td>
<td>65</td>
<td>1.03</td>
</tr>
<tr>
<td>V Albany</td>
<td>15</td>
<td>1.03</td>
</tr>
<tr>
<td>V Milwaukie</td>
<td>5</td>
<td>1.02</td>
</tr>
<tr>
<td>III Hood River</td>
<td>7</td>
<td>1.02</td>
</tr>
<tr>
<td>V Salem</td>
<td>22</td>
<td>1.01</td>
</tr>
<tr>
<td>IV Roseburg</td>
<td>12</td>
<td>.93</td>
</tr>
<tr>
<td>III Tigard</td>
<td>6</td>
<td>.92</td>
</tr>
<tr>
<td>V Eugene</td>
<td>7</td>
<td>.90</td>
</tr>
<tr>
<td>V Meford</td>
<td>11</td>
<td>.88</td>
</tr>
<tr>
<td>III Dallas</td>
<td>5</td>
<td>.88</td>
</tr>
<tr>
<td>IV Gresham</td>
<td>7</td>
<td>.87</td>
</tr>
<tr>
<td>III Lakeview</td>
<td>10</td>
<td>.87</td>
</tr>
</tbody>
</table>
In order to see what size school contributed most to success or failure, the students in class of high school were counted. The number who made a 2.00 average or better, and those who left school were recorded. This table shows the percentages in both classes.

**TABLE IX**

**PERCENTAGE OF STUDENTS WHO LEFT SCHOOL OR MADE A 2.00 AVERAGE OR BETTER DURING THE YEAR 1930-31**

<table>
<thead>
<tr>
<th>Class School</th>
<th>Left School</th>
<th>2.00 or Better</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td><strong>41.13 %</strong></td>
<td><strong>3 %</strong></td>
</tr>
<tr>
<td>II</td>
<td><strong>30.30 %</strong></td>
<td><strong>8.65 %</strong></td>
</tr>
</tbody>
</table>
Of the schools used in this table, Class I schools only contained fifty-three cases. This was the sum total of all the students of that class. The small number of students, however, make the data on Class I less reliable than the data on the other classes, in which each class had more than a hundred students.

<table>
<thead>
<tr>
<th>Class</th>
<th>Left School</th>
<th>2.00 or Better</th>
</tr>
</thead>
<tbody>
<tr>
<td>III</td>
<td>22. %</td>
<td>7.07 %</td>
</tr>
<tr>
<td>IV</td>
<td>22. %</td>
<td>5.55 %</td>
</tr>
<tr>
<td>V</td>
<td>31.50 %</td>
<td>5.66 %</td>
</tr>
<tr>
<td>VI</td>
<td>16.64 %</td>
<td>13. %</td>
</tr>
<tr>
<td>VII</td>
<td>16. %</td>
<td>16. %</td>
</tr>
</tbody>
</table>
CHAPTER V
SUMMARY AND CONCLUSIONS

In summarizing the results of this investigation we can draw the following general conclusions:

1. The size of high school attended does influence the students' chances for success in college. There is no direct relation, however, between the size of high school the students attend and the grades they make at Oregon State College.

2. There is no direct relationship between the size of high school attended and the average intelligence of its graduates as tested by the Thurstone Psychological Examination.

The general conclusions that can be drawn, as the reader will note, are limited. A study of the investigation shows certain tendencies predominant in certain situations. The findings of this study were rather conclusive, but they were limited to a certain class or group. The rather definite tendencies that were observed are:

1. The chances for marked scholastic success of students from Class I (1-49) high schools are not very high.

2. Students of Class I high schools are above average intelligence, however, there are only fifty-three students in this class and they may be a highly selected group. Students from Class II (50-99) are below average.

3. Freshmen from small high schools (1-49) do not work
up the mental capacity for the first term, but they attain
average grades for the year. Probably this is due to in-
ability to orient themselves the first term.

4. Students from Portland high schools have more
chance of success and less chance of failure as a group
than any other class.

5. Students from Corvallis seem to have more than av-
erage chance for success and the number who leave school is
less than average.

6. Students from Class IV high schools are more incon-
sistent in their work than other groups. There is a mark-
ed fluctuation in term-grade average of the student.

7. Students from Class V high schools seem to be av-
erage in psychological rating, and a little below average
in scholarship. Their chances of high grades are a little
less than average and the percentage that withdraw is
larger than any group except Class I.

8. Class III (100-299) students are average in intel-
ligence and have a little less than average chance of av-
oiding failure and attaining marked success. The corre-
lations between grade averages and psychological examin-
ation scores are higher than for any other group.

9. The average grades of freshmen women are higher
than those of freshmen men.

10. Students from other states are about on a par in
scholastic ability with those of Oregon.
11. The year grade average correlates higher with the students' mental ability than the first term grades.

12. There is a wider range in intelligence rating in Class V (500 and over) high school graduates than any other class. This may account for the high percentage of withdrawals found in that class.

13. Students from all classes of schools show more variability in first term grades, than in year averages and psychological ratings.
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# Appendix

## HIGH SCHOOLS USED IN THIS STUDY

### Class I

<table>
<thead>
<tr>
<th>Arago</th>
<th>Paisley</th>
<th>Corbett</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bonanza</td>
<td>Port Oxford</td>
<td>Cove</td>
</tr>
<tr>
<td>Bridge</td>
<td>Richreall</td>
<td>Dayton</td>
</tr>
<tr>
<td>Camas Valley</td>
<td>Riddle</td>
<td>Drain</td>
</tr>
<tr>
<td>Canyon City</td>
<td>St Paul</td>
<td>Dufur</td>
</tr>
<tr>
<td>Cascade Locks</td>
<td>Santa Clara</td>
<td>Echo</td>
</tr>
<tr>
<td>Colton</td>
<td>Scotts Mill</td>
<td>Elgin</td>
</tr>
<tr>
<td>Crow</td>
<td>Shaniko</td>
<td>Elmira</td>
</tr>
<tr>
<td>Days Creek</td>
<td>Shedd</td>
<td>Fossil</td>
</tr>
<tr>
<td>Dayville</td>
<td>Silver Lake</td>
<td>Garibaldi</td>
</tr>
<tr>
<td>Eagle Point</td>
<td>Smith River</td>
<td>Gaston</td>
</tr>
<tr>
<td>Elkton</td>
<td>Tangent</td>
<td>Glendale</td>
</tr>
<tr>
<td>Fall City</td>
<td>Talent</td>
<td>Halsey</td>
</tr>
<tr>
<td>Haines</td>
<td>Turner</td>
<td>Harrisburg</td>
</tr>
<tr>
<td>Hereford</td>
<td>Ukiah</td>
<td>Huntington</td>
</tr>
<tr>
<td>Hubbard</td>
<td>Umatilla</td>
<td>Imbler</td>
</tr>
<tr>
<td>John Day</td>
<td>Vida</td>
<td>Jefferson</td>
</tr>
<tr>
<td>Kings Valley</td>
<td></td>
<td>Joseph</td>
</tr>
</tbody>
</table>

### Class II

<table>
<thead>
<tr>
<th>Linslaw</th>
<th>Alsea</th>
<th>Junction City</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lakeside</td>
<td>Brownsville</td>
<td>Knappa</td>
</tr>
<tr>
<td>Lorane</td>
<td>Carlton</td>
<td>Malin</td>
</tr>
<tr>
<td>Maupin</td>
<td>Chemawa</td>
<td>Marcola</td>
</tr>
<tr>
<td>Mosier</td>
<td>Chiloquin</td>
<td>Coos River</td>
</tr>
<tr>
<td>Paisley</td>
<td>Coburg</td>
<td>Merrill</td>
</tr>
</tbody>
</table>
Mill City
Monmouth
Monroe
Noro
Mt. Vernon
Myrtle Creek
Nehalem
Newport
Oakland
Odell
Parkdale
Philomath
Pilot Rock
Phoenix
Powers
Prairie City
Reedsport
Richland
Scio
Stansfield
Sutherlin
Sweet Home
Waldport
Warrenton
Wheeler
Wasco
Weston

Westport
Yoncalla

Noro
Amity
Bandon
Banks
Beaverton
Burns
Canby
Central Point
Clatskanie
Condon
Coquille
Cottage Grove
Dallas

Nyssa
Parkrose
Prineville
Rainier
Redmond
Sandy
Scappoose
Seaside
Sheridan
Springfield
Tigard
Toledo
Union
Vale

Prairie City
Enterprise
Estacada
Halfway
Heppner
Hermiston
Hood River
Independence
Lakeview
Lebanon
Molalla
Myrtle Point
North Bend

Class III

Prairie City
Enterprise
Estacada
Halfway
Heppner
Hermiston
Hood River
Independence
Lakeview
Lebanon
Molalla
Myrtle Point
North Bend

Nyssa
Parkrose
Prineville
Rainier
Redmond
Sandy
Scappoose
Seaside
Sheridan
Springfield
Tigard
Toledo
Union
Vale

Prairie City
Enterprise
Estacada
Halfway
Heppner
Hermiston
Hood River
Independence
Lakeview
Lebanon
Molalla
Myrtle Point
North Bend

Class IV

Ashland
Forest Grove
Gresham
Hillsboro
McMinnville
Marshfield
Milton
Newberg
Ontario
Oregon City
Pendleton
Roseburg
Saint Helens
Silverton
Tillamook
West Linn
Woodburn

Class VI
Corvallis

Class VII
Benson
Catlin

Class V
Albany
Astoria
Baker
Bend
Eugene
Grants Pass
Klamath Falls
La Grande
Medford
Milwaukie
Salem

Commerce
Franklin
Grant
Jefferson
Lincoln
Parkrose
Roosevelt
Washington