A COMPARATIVE STUDY OF THE SUCCESS OF
TERRE HAUTE HIGH SCHOOL GRADUATES
AT THE ROSE POLYTECHNIC INSTITUTE
AND INDIANA STATE TEACHERS COLLEGE

By
F. Burgett Manhart

Contributions of the Graduate School
Indiana State Teachers College
Number 152

Submitted in Partial Fulfillment
of the Requirements for the
Master of Science Degree in Education
1933
ACKNOWLEDGMENTS

The writer wishes to express his appreciation to the members of a most helpful thesis committee, Dr. John R. Shannon, Mr. E. L. Abell, and Mr. Olis Jamison, for their aid and advice in the preparation of this thesis; to Dr. D. B. Prentice, of the Rose Polytechnic Institute, and the principals of the Terre Haute high schools for their willingness to grant access to the school records; and to his wife for the aid and encouragement she has continuously given.

F. B. M.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACKNOWLEDGMENTS</td>
<td>ii</td>
</tr>
<tr>
<td>LIST OF TABLES</td>
<td>vii</td>
</tr>
<tr>
<td>LIST OF FIGURES</td>
<td>ix</td>
</tr>
<tr>
<td>I. INTRODUCTION</td>
<td></td>
</tr>
<tr>
<td>A. Considerations Leading to the Study.</td>
<td>1</td>
</tr>
<tr>
<td>1. Numerical Importance of Terre Haute Students</td>
<td>1</td>
</tr>
<tr>
<td>2. Success of Students from Small High School as Compared with Success of Students from Large High Schools When Some Variables are More Nearly Equal</td>
<td>1</td>
</tr>
<tr>
<td>3. Students from a Trade High School Compared with Students from Academic High Schools</td>
<td>4</td>
</tr>
<tr>
<td>B. The Problem</td>
<td>5</td>
</tr>
<tr>
<td>C. The Scope</td>
<td>6</td>
</tr>
<tr>
<td>D. Limitations</td>
<td>7</td>
</tr>
<tr>
<td>E. The Purpose</td>
<td>8</td>
</tr>
<tr>
<td>II. PROCEDURE</td>
<td></td>
</tr>
<tr>
<td>A. Selecting Data</td>
<td>10</td>
</tr>
<tr>
<td>B. Obtaining College Data</td>
<td>10</td>
</tr>
<tr>
<td>1. At the Rose Polytechnic Institute</td>
<td>10</td>
</tr>
<tr>
<td>2. At the Indiana State Teachers College</td>
<td>11</td>
</tr>
</tbody>
</table>
A. Average Scholarship Index of Local Students........................... 33
B. Reliability of the Average Scholarship Index......................... 34
C. Variability of Local Students at State.................................... 35
D. Reliability of the Standard Deviations.................................... 36
E. Grade of Work Done............................................................ 36
F. Conclusions............................................................................. 38

VII. COMPARATIVE SUCCESS AT STATE TEACHERS COLLEGE OF HIGH SCHOOL STUDENTS GRADUATED FROM DIFFERENT COURSES OF STUDY............. 40
A. Comparative Measures at State Teachers College....................... 40
B. Comparative Rankings in High Schools.................................... 41
C. Work Done by Commerce Students at State.................................. 43
D. Work Done by Practical Arts Students at State.......................... 44
E. Conclusions............................................................................. 45

VIII. GENERAL SUMMARY AND CONCLUSIONS.............................. 47

IX. INTERPRETATION, APPLICATION, AND RECOMMENDATIONS........... 49
A. Interpretation........................................................................... 49
B. Application, and Recommendations............................. 52

1. Closer Coordination of Work in Local High Schools................... 52
2. Standardization of Records and Office Practice............... 52
3. Study of the Needs of Students
   Enrolling at Rose.................. 52
4. A Separate Course of Study for
   Future Rose Students............ 53
5. Study of the Needs of Students
   Enrolling at State............... 53
6. A Separate Course of Study for
   Future State Students........... 54
7. A Study of the Teaching Methods
   Best Fitting Students for Work at
   Rose and at State............... 54
8. A Study of the Reasons for
   Failure........................... 55
C. Future Research Needed.......... 55
X. APPENDIX................................ 59
   A. Bibliography................... 59
# LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>I.</td>
<td>Average High School Rankings of Garfield Graduates Enrolling at Rose        </td>
<td>15</td>
</tr>
<tr>
<td>II.</td>
<td>Average High School Rankings of Gerst-meyer Graduates Enrolling at Rose</td>
<td>16</td>
</tr>
<tr>
<td>III.</td>
<td>Average High School Rankings of State Training School Graduates Enrolling at Rose</td>
<td>17</td>
</tr>
<tr>
<td>IV.</td>
<td>Average High School Rankings of Wiley Graduates Enrolling at Rose</td>
<td>18</td>
</tr>
<tr>
<td>V.</td>
<td>Average High School Rankings of Garfield Graduates Enrolling at State</td>
<td>20</td>
</tr>
<tr>
<td>VI.</td>
<td>Average High School Rankings of Gerst-meyer Graduates Enrolling at State</td>
<td>21</td>
</tr>
<tr>
<td>VII.</td>
<td>Average High School Rankings of State Training School Graduates Enrolling at State Teachers College</td>
<td>22</td>
</tr>
<tr>
<td>VIII.</td>
<td>Average High School Rankings of Wiley Graduates Enrolling at State</td>
<td>23</td>
</tr>
<tr>
<td>IX.</td>
<td>College Achievement of Local Students at Rose Polytechnic</td>
<td>28</td>
</tr>
<tr>
<td>X.</td>
<td>Number of Failures at Rose by Local Students and Ratio of Credit Points to Credits</td>
<td>31</td>
</tr>
<tr>
<td>XI.</td>
<td>Scholarship Achievement at the State Teachers College</td>
<td>34</td>
</tr>
</tbody>
</table>
XII. Percentage of Students Averaging Different Grades at State Teachers College..... 38

XIII. Measures of Work Done at State by Students Graduating from Different High School Courses of Study......................... 41

XIV. Rankings of Students from Different Courses in their High School Classes..... 42

XV. College Achievement of Students on the Commercial Course at State............... 43

XVI. College Achievement of Students on Practical Arts Course at State............. 45
## LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Distribution of Students Enrolled at Rose According to Rank in High School Classes</td>
<td>19</td>
</tr>
<tr>
<td>2.</td>
<td>Showing what per cent of the Total 404 Students Enrolled were from the Lowest Third, Middle Third, and Highest Third Respectively</td>
<td>24</td>
</tr>
</tbody>
</table>
INTRODUCTION

A. Considerations Leading to the Study

1. Numerical Importance of Terre Haute Students.
   Because of the proximity of the Terre Haute high schools to the Rose Polytechnic Institute and to the Indiana State Teachers College, a large number of Terre Haute students enroll in these colleges. This gives to Terre Haute an importance in both the educational world and the engineering world that is out of proportion to the population. At least, this is an importance engendered through numerical strength, if for no other reason. Because of this the local high schools have a duty thrust upon them that few other high schools have.

2. Success of Students from Small High School as Compared with Success of Students from Large High Schools When Some Variables are More Nearly Equal. Several studies have been made of the relative merits of the work done in the large and small high schools of this state and other states. Among these studies is one by Wayne H. Ely\(^1\) in our own graduate school. In this study when he eliminated the students from the high schools with an enrollment between one hundred and three hundred students he found that "The students from the large high schools have a marked superiority when compared to the students from the small high schools". The only factor considered

\(^1\)Wayne H. Ely, "Scholastic Success of Students from Small High Schools versus Students from Large High Schools," M. A. Thesis, Indiana State Teachers College (1930), p. 37.
in this study was that of size of the high school. Success was measured by the students' success in their freshman classes at the Indiana State Teachers College. In another study James H. Barr found practically the same thing. He included in his study the personnel of instruction and administration, housing and equipment of schools, curricular and extra-curricular advantages, the final success of the schools, and the success of their graduates in college. He concluded that the larger high schools in Indiana are superior to the smaller high schools.

In view of the fact that these and other studies were made of high schools with so many, and such a wide range of variable factors no definite conclusion should be reached that size alone has much to do with the success of a school's graduates. It is undisputed that on the average the smaller high schools labor under difficulties not usually encountered by the larger high schools. As a rule the larger high schools have better trained staffs of teachers, better administrative systems, better equipment and housing conditions, and a greater variety of curricula. This is largely because the total amount of taxable property in a community that needs a large high school is usually much greater than the taxable property in a community that supports a small high school.

In addition to the variable factors directly related

---

to the schools there are social and economic factors that should be considered. The problems of the farming districts are separate and distinct from those of the industrial districts, the mining districts, the manufacturing districts, and each of these is different from the others. Then, too, there is an economic variation found between the separate districts, and between communities of the same district. Two communities might be in the agricultural district yet one be blessed with an abundance of rich, fertile soil that is very valuable, while the other have a large area of untlillable, infertile waste-land.

The Terre Haute high schools included in this study are the Indiana State Teachers College Training School, the Wiley High School, the Garfield High School, and the Gerstmeyer High School. The first named is a comparatively small high school, while the others would be classed as large high schools. We have a situation in which, to a large extent, the students come from the same community thus decreasing to a minimum, yet not altogether eliminating, those variables of local interests, local occupations, taxable amount of property, and economic well-being of the community. Of these, there can be but little doubt that the economic factor is the most variable in the schools studied.

In addition we have a situation in which the small high school does not suffer through a comparison of its teaching staff or administrative personnel. Its students are adequately housed when compared to the other three
high schools, and the equipment is similar. We do have a typical small high school situation in that there is only one curriculum for all students.

3. Students from a Trade High School Compared with Students from Academic High Schools. While the Gerstmeyer High School is called the Gerstmeyer Technical High School, it is more properly speaking a trade school in that it prepares its students for various trades; printing, auto mechanics, commerce, electrical, wood working, and so on. It is not a technical high school in that it does not include technical courses in physics, chemistry, mathematics, and other scientific subjects. These subjects are taught but are no more technical than the courses given in the other high schools.

For the same reasons outlined in the second section of this chapter there is afforded an unusual opportunity to study the results achieved by a trade high school as with academic high schools. One other variable, that of occupational interest, would be more important in this comparison than would ordinarily be true when considering ordinary high schools. Many of the pupils at Gerstmeyer are going with the intention of receiving training in some trade that will enable them to make a living at the conclusion of their high school course of study, or when the compulsory attendance school law will allow them to quit school. Because of this there are far fewer Gerstmeyer graduates enrolling at the Rose Polytechnic Institute or the Indiana State Teachers College than from any
of the other high schools, in proportion to the number of graduates. This is to be considered no reflection upon the Gerstmeyer High School. It must be emphatically understood that this study does not attempt to evaluate the success of the high schools in taking care of those who do not go to college. Gerstmeyer was formed and is administered with those students in mind who do not intend to continue through the entire four years of high school, or at the most, with those who do not intend to go to college. Gerstmeyer has a mission to fulfill, a function to perform, that is distinct from that of the other high schools. There probably can be no question but that the work is well done. It was organized to meet the same condition Leonard V. Koos had in mind when he said, "It is urged only that wide variation in occupational interest...requires emphatic recognition on the part of those responsible for the secondary schools, a recognition which has thus far in the development of secondary education not been sufficiently accorded".⁴

B. The Problem

The major problem of this thesis is to determine the comparative success achieved by the Terre Haute high schools in preparing their students for college as measured by the success achieved by their graduates in their

⁴Leonard V. Koos, American Secondary Schools (Boston: Ginn and Company, 1927), III, p. 112.
first-year work at the Indiana State Teachers College and the Rose Polytechnic Institute. When that success is determined it is hoped that the following questions will be at least partly answered:

1. As a group, do the students from any one high school do distinctly better work than those from any other high school in Terre Haute?

2. How does the college work done by those students graduated from the State Training School compare with that done by those students graduated from the larger high schools of Terre Haute?

3. How does the college work done by those students graduated from Gerstmeyer Technical High School compare with that done by those students graduated from the academic high schools of Terre Haute?

4. Are students who complete the work of any one high school course of study better qualified for college work than those who complete the work of other courses of study?

   a. Do students who continue in college upon a similar course of study, such as commercial, industrial arts, or home economics, do better work than those students who follow a different line of work than that pursued in high school?

C. The Scope

The first-year college records of those classes graduated in the years 1928, 1929, 1930, 1931, and 1932 were used. It was felt by the author that going back to
any previous period would yield little of value in that we would get back to a period of time in which students were in high school under conditions that would not be sufficiently similar to present day conditions, methods, practices, and procedures. Those students in the 1928 classes for the most part started their high school careers in 1924. Then, too, a sufficient number of cases was found, in the main, to serve the purposes of this thesis.

Only the years 1930, 1931, and 1932 were used in showing that representative groups from each high school enrolled at the State Teachers College and at the Rose Polytechnic Institute. It was not until 1930 that the local high schools started to keep either a rank in class (Garfield), an average percentage of marks received (Wiley), or a scholarship index (Gerstmeyer and State Training School). It was also felt that these three years would be sufficiently indicative of whether representative groups enrolled at each college from each high school.

D. Limitations

1. Lack of Intelligence Quotients. It was felt by the author that the greatest weakness of the entire study is the lack of intelligence quotients. These were only available for those students who had taken the intelligence tests at the State Teachers College, but are not available in the high schools. For this reason we do not know how much of the superior showing of the State Training School students, or academic course students, might
be attributed to superior native intelligence. If we assume the student with an intelligence quotient of 160 will be at, or very near, the median of his class, the studies in Chapters III and IV can be taken as indicating probable native intelligence.

2. Size of Certain Groups. Another limitation of this study is the small number of students found in certain groups. There are far too few Gerstmeyer or State Training School students enrolled at the Rose Polytechnic Institute to give reliable measures of the work done by students from these high schools. The same is true, but to a less degree, of the number of students from Gerstmeyer or the Training School enrolled at the State Teachers College. The small number of students who are graduated from the Training School naturally creates the limitation for this school. As previously pointed out, few of the Gerstmeyer students are in high school for the purpose of pursuing college preparatory work, hence very few of these students enter a college.

E. The Purpose

Inasmuch as Terre Haute does occupy a position unique for its size in the educational and engineering worlds it behooves not only the citizens of Terre Haute but the personnel of the colleges involved to do all in their respective powers to prepare adequately the Terre Haute high school graduates for college. While the duty may not be relished by the local citizens because of economic condi-
tions, nevertheless the duty is one that should be ful-
filled, not only for the sake of the students directly
involved but for the well-being of the state and the
nation as a whole. For this reason especial effort should
be directed toward determining which high school best pre-
ares its students, why it best prepares them, what courses
of study seem to be the best preparatory courses, and what
should be done toward bettering that which is now being
accomplished, or the courses of study now being followed.
This thesis can only lay the foundation for many more
studies along this line, can only prove the beginning of
perhaps long years of work all directed toward bettering
the college preparatory work in the high schools of Terre
Haute, which will in turn better enable the Terre Haute
students to attain the educational and engineering leader-
ship their numerical strength entitles them.
II. PROCEDURE

A. Selecting Data

Only the marks received in the freshman year in college were used in this study because it was felt that high school training is more directly reflected in this year of college work than in any other. After the first year, the first month, even the first day, the college itself is in a measure responsible for the success of its students.

B. Obtaining College Data

1. At the Rose Polytechnic Institute. Access was had to the records of the students at the Rose Polytechnic Institute. From these records it was first determined which students were from our local high schools. The individual record of these students was then studied to determine (1) the number of credits earned in his freshman year, and (2) the number of credit points earned in the same period. The amount of class time spent in a certain subject determines the number of hours credit a student earns in each subject. For instance, those students satisfactorily completing the course in algebra, trigonometry, or chemistry would earn three credits for each course, while satisfactory completion of the course in mechanical drawing or elements of engineering would yield them but one credit. The marks received in each
course are then weighted and multiplied by the amount of credit earned to obtain the number of credit points. In credit points, a grade of "A" is worth three times the number of hours credit the course carries, a grade of "B" is worth twice the number of hours credit, while a grade of "C" is worth, in credit points, the same as the number of credits. A grade of "D" is passing, but the student earns no credit points for this grade.

Under the faculty rules it is necessary that a student earn at least nine credits and nine credit points each semester to remain in school and in good standing. If this condition is met, there is nothing to bar a student from taking more than the usual four years to complete any given course.

The total number of credits and credit points earned by each local high school student was copied from the students' records on file in the registrar's office at the Rose Polytechnic Institute. In a few cases, students had been given one or two credit points for participating in athletics, or for being a member of the band. As these were not indicative of scholarship, they were deducted from the total number of credit points earned by these students as shown by the school records.

2. At the Indiana State Teachers College. The "New Students' Register" on file in the registrar's office of the Indiana State Teachers College was first consulted to locate those students registering from the local high schools for the school terms from June, 1928, up to and including
the January term of 1933. Each student's record card was then studied to determine (1) the course upon which he was enrolled, (2) the total number of hours credit earned, and (3) the mark received in each course. From the latter two the scholarship index was computed for each student in the same manner as is practiced by those at the Teachers College. Each mark was weighted in the following manner: A-4, B-3, C-2, D-1, F-0. The total of these weighted marks was then divided by the total hours credit undertaken to give the scholarship index.

3. At the High Schools. From each separate high school was obtained a list of students graduating each year from 1928 to 1932, inclusive. The January and June classes of 1933 were not included because these students could have little or no college record at this time. These lists were made from the official records on file in the registrar's office of each high school. In addition, a record was made of the course upon which each student was graduated.

From the registrar at the Wiley High School was obtained an official copy of the standing in percentages of all students in each class graduated from that institution during the years studied.

From the principal at Garfield High School was obtained the ranking of each student in his respective class from the year 1930 up to and including the June class of 1932. These ranks were determined by the number of A's, B's, C's, D's, or F's a student made compared with the other members of his class.
A scholarship index of each student graduating during this same period was furnished by the principals at both the Gerstmeier High School and the State Teachers Training School. These indexes are also on file in the principal's office at each institution.
III. HIGH SCHOOL REPRESENTATION
AT THE ROSE POLYTECHNIC INSTITUTE

Before drawing any valid conclusions it was felt that it would first be necessary to know whether or not the student groups attending both the Rose Polytechnic Institute and the Indian State Teachers College were fairly representative of the high school classes from which they came. Accordingly, a study was made of the mean rankings for each group enrolling at each institution from each high school, and is here presented.

A. Garfield High School

While the number of students enrolling from this high school at the Rose Polytechnic Institute was not as great as was hoped, certain definite conclusions can be drawn. Table I shows the mean rank of each high school class since 1930, the mean rank of those students enrolling at the Rose Polytechnic Institute from each class, and the division of each enrolled group into the upper, middle, or lower third of their high school class. It can be seen that there is a distinct tendency toward a rather select group of students from the Garfield High School. Eighteen of the twenty-eight students enrolled at Rose were in the upper third of their high school class. The year 1932 may be peculiar, and to some extent should be disregarded, but even so, there would still have been ten students in the upper third of their high school classes, with only nine
in the other two thirds. One other peculiar fact is that more students were enrolled from the lower third than from the middle third of the high school classes.

### TABLE I

**AVERAGE HIGH SCHOOL RANKINGS OF GARFIELD GRADUATES ENROLLING AT ROSE**

<table>
<thead>
<tr>
<th>Year</th>
<th>Class</th>
<th>No. in Class</th>
<th>Mean Rank of Class</th>
<th>Mean Rank of Those at Rose</th>
<th>No. in First Third of Class</th>
<th>No. in Middle Third of Class</th>
<th>No. in Lower Third of Class</th>
<th>Total From Each Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>1930</td>
<td></td>
<td>120</td>
<td>60.5</td>
<td>50.5</td>
<td>5</td>
<td>2</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Jan.</td>
<td>28</td>
<td>14.5</td>
<td>4.667</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>June</td>
<td>118</td>
<td>59.5</td>
<td>61.187</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>1931</td>
<td>Jan.</td>
<td>32</td>
<td>16.5</td>
<td>9.0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>1932</td>
<td>June</td>
<td>121</td>
<td>66.0</td>
<td>20.875</td>
<td>7</td>
<td>1</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>Totals</td>
<td></td>
<td>429</td>
<td></td>
<td></td>
<td>18</td>
<td>4</td>
<td>6</td>
<td>28</td>
</tr>
</tbody>
</table>

**B. Gerstmeyer High School**

Though one of our larger high schools, the number of students graduating from this school and enrolling at the Rose Polytechnic Institute is much smaller in proportion than from any other local high school. Table II indicates that when one does continue at the Rose Polytechnic Institute he is from the better group of students in his graduating class. Five of the seven students enrolling in the years
1930, 1931, and 1932 were in the first third of their class, while the other two were in the middle third.

**TABLE II**

**AVERAGE HIGH SCHOOL RANKINGS OF GERST-BEYER GRADUATES ENROLLING AT ROSE**

<table>
<thead>
<tr>
<th>Year</th>
<th>Class</th>
<th>No. in Class</th>
<th>Mean Rank of Class</th>
<th>Mean Rank of Those at Rose</th>
<th>No. in First Third of Class</th>
<th>No. in Middle Third of Class</th>
<th>No. in Lower Third of Class</th>
<th>Total Enrolled From Each Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>1930</td>
<td>June</td>
<td>72</td>
<td>36.5</td>
<td>26.4</td>
<td>3</td>
<td>2</td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>1931</td>
<td>Jan.</td>
<td>11</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>1931</td>
<td>June</td>
<td>81</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>1932</td>
<td>Jan.</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1*</td>
</tr>
<tr>
<td>1932</td>
<td>June</td>
<td>81</td>
<td>41.0</td>
<td>12.75</td>
<td>2</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Totals</td>
<td></td>
<td>265</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>7</td>
</tr>
</tbody>
</table>

*Not included in the totals as no rankings were available for the January, 1932, class.

C. Indiana State Training School

As shown in Table III, the students enrolling at the Rose Polytechnic Institute from the State Training School represent a more normal distribution than those from any of the other schools. In fact, this is the only school for which the distribution curve would be positively skewed. This fact must be borne in mind when studying
the achievement of these students at the Rose Polytechnic, as well as the fact that the number of students is too small to make the study reliable.

TABLE III

AVERAGE HIGH SCHOOL RANKINGS
OF STATE TRAINING SCHOOL GRADUATES ENROLLING AT ROSE

<table>
<thead>
<tr>
<th>Year</th>
<th>Class</th>
<th>No. in Class</th>
<th>Mean Rank of Class</th>
<th>Mean Rank of Those at Rose</th>
<th>No. in First Third of Class</th>
<th>No. in Middle Third of Class</th>
<th>No. in Lower Third of Class</th>
<th>Total Enrolled From Each Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>1930</td>
<td>June</td>
<td>18</td>
<td>9.5</td>
<td>9.25</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>1931</td>
<td>June</td>
<td>26</td>
<td>12.5</td>
<td>15.6</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>1932</td>
<td>June</td>
<td>26</td>
<td>13.5</td>
<td>24.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td></td>
<td>70</td>
<td></td>
<td></td>
<td>2</td>
<td>5</td>
<td>3</td>
<td>10</td>
</tr>
</tbody>
</table>

D. Wiley High School

As there are more students graduated from this school than from any of the others, there are more students enrolling at Rose from this school. Here, again, the tendency is for the better students to continue at Rose. Table IV presents the summary for these students.
TABLE IV
AVERAGE HIGH SCHOOL RANKINGS
OF WILLY GRADUATES
ENROLLING AT ROSE

<table>
<thead>
<tr>
<th>Year</th>
<th>Class</th>
<th>No. in Class</th>
<th>Mean Rank of Class</th>
<th>Mean Rank of Those at Rose</th>
<th>No. in First Third of Class</th>
<th>No. in Middle Third of Class</th>
<th>No. in Lower Third of Class</th>
<th>Total Enrolled from Each Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>1930</td>
<td>June</td>
<td>251</td>
<td>126.0</td>
<td>109.925</td>
<td>9</td>
<td>7</td>
<td>4</td>
<td>20</td>
</tr>
<tr>
<td>1931</td>
<td>Jan.</td>
<td>34</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1931</td>
<td>June</td>
<td>236</td>
<td>118.5</td>
<td>113.348</td>
<td>10</td>
<td>7</td>
<td>6</td>
<td>23</td>
</tr>
<tr>
<td>1932</td>
<td>Jan.</td>
<td>39</td>
<td>20.0</td>
<td>8.3</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>1932</td>
<td>June</td>
<td>185</td>
<td>93.0</td>
<td>64.227</td>
<td>6</td>
<td>3</td>
<td>2</td>
<td>11</td>
</tr>
<tr>
<td>Totals</td>
<td></td>
<td>745</td>
<td></td>
<td></td>
<td>28</td>
<td>17</td>
<td>12</td>
<td>55</td>
</tr>
</tbody>
</table>

E. Conclusions

There is a distinct tendency for the students enrolling at the Rose Polytechnic Institute, and coming from our local high schools, to be, as a group, of higher average rank than the average of their respective high school classes. This is distinctly shown in the histogram, Figure 1, and is true for all schools with the possible exception of the Training School. The group from this school presents nearly a normal distribution. On the whole, the students enrolling at the Rose Polytechnic Institute are above the average of high school students, as out of a total of 100 students from our local high schools, 51 are in the upper third of
their high school classes, 28 in the middle third, and 21 in the lowest third.

Figure 1. Distribution of students enrolled at Rose according to rank in high school classes.
IV. HIGH SCHOOL REPRESENTATION

AT THE INDIANA STATE TEACHERS COLLEGE

A. Garfield High School

As a group, the Garfield students enrolling at the State Teachers College are above the average of their classes. There are, as shown in Table V, 42 students of the group of 94 who were in the upper third of their high school classes, 27 in the middle third, and 25 in the lower third.

<table>
<thead>
<tr>
<th>Year</th>
<th>Class</th>
<th>No. in Class</th>
<th>Mean Rank of Class</th>
<th>Mean Rank of Those at State</th>
<th>No. in First Third of Class</th>
<th>No. in Middle Third of Class</th>
<th>No. in Lower Third of Class</th>
<th>Total Enrolled From Each Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>1930</td>
<td>June</td>
<td>120</td>
<td>60.5</td>
<td>57.43</td>
<td>12</td>
<td>8</td>
<td>10</td>
<td>30</td>
</tr>
<tr>
<td>1931</td>
<td>Jan.</td>
<td>28</td>
<td>14.5</td>
<td>9.2</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>1931</td>
<td>June</td>
<td>118</td>
<td>59.5</td>
<td>48.84</td>
<td>12</td>
<td>8</td>
<td>5</td>
<td>25</td>
</tr>
<tr>
<td>1932</td>
<td>Jan.</td>
<td>32</td>
<td>16.5</td>
<td>8.5</td>
<td>5</td>
<td>0</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>1932</td>
<td>June</td>
<td>131</td>
<td>66.0</td>
<td>56.0</td>
<td>11</td>
<td>9</td>
<td>8</td>
<td>28</td>
</tr>
</tbody>
</table>

| Totals | 429 | 42 | 27 | 25 | 94 |
B. Gerstmeyer High School

Though the same negative skewness is apparent among the rankings of the Gerstmeyer students, a study of the comparative means in Table VI will give a better indication of the superiority of those enrolling at the State Teachers College than does a study of their distribution in their high school classes. Though this superiority is not as marked as in the case of the other high schools, the Gerstmeyer students are slightly above their class averages.

TABLE VI
AVERAGE HIGH SCHOOL RANKINGS
OF GERSTMeyer GRADUATES
ENROLLING AT STATE

<table>
<thead>
<tr>
<th>Year</th>
<th>Class</th>
<th>No. in Class</th>
<th>Mean Rank of Class</th>
<th>Mean Rank of Those at State</th>
<th>No. in First Third of Class</th>
<th>No. in Middle Third of Class</th>
<th>No. in Lower Third of Class</th>
<th>Total Enrolled From Each Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>1930</td>
<td>June</td>
<td>72</td>
<td>36.5</td>
<td>40.83</td>
<td>1</td>
<td>6</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td>1931</td>
<td>Jan.</td>
<td>11</td>
<td>6.0</td>
<td>9.0</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>1931</td>
<td>June</td>
<td>81</td>
<td>41.0</td>
<td>36.715</td>
<td>5</td>
<td>4</td>
<td>5</td>
<td>14</td>
</tr>
<tr>
<td>1932</td>
<td>Jan.</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>1932</td>
<td>June</td>
<td>81</td>
<td>41.0</td>
<td>33.357</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>Totals</td>
<td></td>
<td>265</td>
<td></td>
<td></td>
<td>10</td>
<td>12</td>
<td>9</td>
<td>31</td>
</tr>
</tbody>
</table>
Here, again, the tendency for a better than average group to enroll at the State Teachers College is manifested. Table VII shows there were 16 out of 34 enrolled who were in the upper third of their high school classes, with 9 each from the middle and lowest thirds.

TABLE VII

AVERAGE HIGH SCHOOL RANKINGS
OF STATE TRAINING SCHOOL
GRADUATES ENROLLING AT
STATE TEACHERS COLLEGE

<table>
<thead>
<tr>
<th>Year</th>
<th>Class</th>
<th>No. in Class</th>
<th>Mean Rank of Class</th>
<th>Mean Rank of Those at State</th>
<th>No. in First Third of Class</th>
<th>No. in Middle Third of Class</th>
<th>No. in Lower Third of Class</th>
<th>Total Enrolled from Each Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>1930 June</td>
<td>16</td>
<td>9.5</td>
<td>8.857</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>1931 June</td>
<td>26</td>
<td>13.5</td>
<td>11.00</td>
<td>7</td>
<td>3</td>
<td>4</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>1932 June</td>
<td>26</td>
<td>13.5</td>
<td>10.7</td>
<td>7</td>
<td>3</td>
<td>3</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td>70</td>
<td>16</td>
<td>9</td>
<td>9</td>
<td>34</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

D. Wiley High School

As can be seen from Table VIII, there is also a tendency in this group for the average student of the group enrolling at the State Teachers College to be better than the average high school student. There are 93 of the enrolled students who were in the upper third of their
high school classes, 86 from the middle third, and 66 from the lowest third. A comparison of the means reveals a slight superiority of the group enrolling at State over the whole class averages.

TABLE VIII
AVERAGE HIGH SCHOOL RANKINGS OF WILEY GRADUATES ENROLLING AT STATE

<table>
<thead>
<tr>
<th>Year</th>
<th>Class</th>
<th>No. in Class</th>
<th>Mean Rank of Class</th>
<th>Mean Rank of Those at State</th>
<th>No. in First Third of Class</th>
<th>No. in Middle Third of Class</th>
<th>No. in Lower Third of Class</th>
<th>Total Enrolled from Each Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>1930</td>
<td>June</td>
<td>251</td>
<td>126.0</td>
<td>113.11</td>
<td>39</td>
<td>36</td>
<td>26</td>
<td>101</td>
</tr>
<tr>
<td>1931</td>
<td>Jan.</td>
<td>34</td>
<td>17.5</td>
<td>17.61</td>
<td>3</td>
<td>2</td>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td>1931</td>
<td>June</td>
<td>236</td>
<td>118.5</td>
<td>116.82</td>
<td>26</td>
<td>22</td>
<td>23</td>
<td>71</td>
</tr>
<tr>
<td>1932</td>
<td>Jan.</td>
<td>39</td>
<td>19.0</td>
<td>16.71</td>
<td>5</td>
<td>5</td>
<td>2</td>
<td>12</td>
</tr>
<tr>
<td>1932</td>
<td>June</td>
<td>185</td>
<td>93.0</td>
<td>80.49</td>
<td>20</td>
<td>21</td>
<td>11</td>
<td>52</td>
</tr>
<tr>
<td>Totals</td>
<td></td>
<td>745</td>
<td></td>
<td></td>
<td>93</td>
<td>86</td>
<td>66</td>
<td>245</td>
</tr>
</tbody>
</table>

E. Conclusions

As a group those students enrolling at the Indiana State Teachers College from our local high schools are better than the average of their respective high school groups. Out of a total of 404 students enrolled during the three years studied, there were 161 students from the upper third of their high school classes, 134 from the middle third, and 109 from the lower third. This is pictured graphically in Figure 2.
Figure 2. Showing what per cent of the total 404 students enrolled were from the lowest third, middle third, and highest third respectively.
V. SCHOLARSHIP ACHIEVEMENT
AT ROSE POLYTECHNIC

In making the study of scholarship at the Rose Polytechnic Institute the records for the five years from 1928 to 1932, inclusive, were consulted. As explained in Chapter II, the students at Rose earn a varying number of hours credit for each course satisfactorily completed. The number of hours credit is multiplied by 1, 2, or 3, depending upon whether the student receives a grade of "C", "B", or "A", respectively, to determine the number of credit points earned.

A. Mean Number of Credits Earned

It is necessary that a student earn 144 credits for graduation. It is expected that the student earn an average of 36 credits per year. From Table IX, it can be seen that the students from the State Training School most nearly attain this average, earning an average of 34.45 credits. The students from this small high school are on the average 5.6 credits ahead of the students from the largest of the schools, Wiley High School, at the end of the first year.

Second in rank are those students from Gerstmeyer High School, the trade school. As the number of students from both the Training School and Gerstmeyer is so small, there is little to be gained in computing the reliability of the measures for these schools. The lack of intelligence quotients for these students must also be taken in consideration when studying these schools. By consulting Tables
I to IV, inclusive, we see that on the average the students from Gerstmeyer rank highest in their high school classes, with the students from State averaging lowest in their classes, than do the students from any of the other high schools. If those lower ranking students from the small school can make a better showing than those higher ranking students from the other schools, surely one is justified in saying they are better trained for the work at the Rose Polytechnic Institute.

B. Variability in Number of Credits Earned

There is a much greater degree of variability among those students from Wiley High School than from any of the other high schools, with those from the Training School showing the least variability. The standard deviation of those students from Wiley is 11.02 credits, with a standard deviation of only 5.01 credits for the students from State. This is due partly to the greater number of failures from Wiley than any other school, which will be discussed later.

C. Mean Number of Credit Points Earned

The students from the Training School also average highest with respect to grades than those from any of the other schools. They earn an average of 59.64 credit points as compared with an average of only 41.955 credit points for those students from Wiley, as shown in Table IX. The students from Garfield attain second rank with an average
of 48.33 credit points, with the Gerstmeyer students a close third with 46.62 credit points.

D. Variability in Number of Credit Points Earned

As is to be expected, Table IX shows those students from Wiley are also more variable with respect to credit points earned. The standard deviation for this group is 30.24 credit points, with the students from Gerstmeyer least variable, having a standard deviation of 25.15 credit points. The students from the Training School rank second with a standard deviation of 28.72 credit points, with the Garfield students a close third with 27.79 credit points.
### TABLE IX

COLLEGE ACHIEVEMENT
OF LOCAL STUDENTS
AT ROSE POLYTECHNIC

<table>
<thead>
<tr>
<th>Measure</th>
<th>Garfield</th>
<th>Gerstmeyer</th>
<th>State</th>
<th>Wiley</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number from each school</td>
<td>55</td>
<td>17</td>
<td>11</td>
<td>100</td>
</tr>
<tr>
<td>Mean number credits per pupil</td>
<td>31.04</td>
<td>32.94</td>
<td>34.45</td>
<td>28.835</td>
</tr>
<tr>
<td>Standard error of mean number of credits</td>
<td>±1.155</td>
<td></td>
<td></td>
<td>±1.102</td>
</tr>
<tr>
<td>Standard deviation number of credits</td>
<td>8.5675</td>
<td>7.770</td>
<td>5.013</td>
<td>11.021</td>
</tr>
<tr>
<td>Standard error of standard deviation</td>
<td>± .817</td>
<td></td>
<td></td>
<td>± .779</td>
</tr>
<tr>
<td>Mean number credit points per student</td>
<td>48.33</td>
<td>46.62</td>
<td>59.64</td>
<td>41.955</td>
</tr>
<tr>
<td>Standard error of mean number of credit points</td>
<td>±3.747</td>
<td></td>
<td></td>
<td>±3.024</td>
</tr>
<tr>
<td>Standard deviation of number of credit points</td>
<td>27.786</td>
<td>25.157</td>
<td>28.719</td>
<td>30.244</td>
</tr>
<tr>
<td>Standard error of standard deviation</td>
<td>±2.649</td>
<td></td>
<td></td>
<td>±2.139</td>
</tr>
</tbody>
</table>
E. Ratio of Credit Points to Credits

In the study of the ratio of credit points to credits, shown in Table X, it is interesting to note that, while the Wiley students earn the least number of credits and credit points, they rank third in the scholarship ratio. This would indicate that in the courses in which they do earn credits and credit points they average a little higher than do the students from Gerstmeyer. Here the effect of failure would not be apparent. When a student fails a course he earns no credits nor credit points, hence these courses are not included in this index. For the same reason, this index is not a scholarship index. As in the other measures, the students from the Training School again take first rank with a ratio of 1.731, Garfield second with 1.557, Wiley third with 1.455, and Gerstmeyer last with 1.415. Interpreted, this index means that in those courses in which the students make passing grades they average between a grade of "B" and "C". An average grade of "C" would give an index of 1.0, while an average of "B" would give an index of 2.0.

F. Number of Failures

In Table X is also presented the number of students from each high school who are dismissed from the Rose Polytechnic Institute because of failure to meet the scholarship requirements. This would not be the entire number of failures because the students graduating from high school in 1930, 1931, and 1932 are still in college
hence liable to failure. The table indicates, though, that by far the greater number of failures occur in the first year. This study certainly indicates the need for some means of selection before the students enroll at Rose, for better guidance on the part of the high school authorities, or for better high school preparation. As shown in the table, 38% of all the students enrolling from Wiley, and who stay in school long enough to establish some kind of a college record, are dismissed from Rose at some time in their college career for failure. Of those who fail, 53% fail their first semester, and 74% fail the first year. Garfield students make the second largest number of failures with 17, or 30.91% of those enrolling. Of these, 56.8% fail during their first year. The State students again make the best showing with only 2 failures, or 18.18%, both being in their first year. As is also shown in the table, there is an additional number of students, especially from Wiley, who enroll but for some reason do not stay long enough to establish any college record.

G. Conclusions

The study indicates that the students from the larger high schools, Wiley and Garfield, earn an average of fewer credits than do those students from either the small high school, State, or the trade school, Gerstmeyer. As the number of students from the latter two institutions is small this can only be taken as an indication. The average student from Wiley would require five years to complete the
TABLE X

NUMBER OF FAILURES AT ROSE BY LOCAL STUDENTS AND RATIO OF CREDIT POINTS TO CREDITS

<table>
<thead>
<tr>
<th>School</th>
<th>Ratio Credit Points to Credits</th>
<th>Number Failed</th>
<th>% Failed</th>
<th>Number Failed First Term</th>
<th>Number Failed First Year</th>
<th>% Failed First Year</th>
<th>Number Enrolled but with No College Record</th>
</tr>
</thead>
<tbody>
<tr>
<td>Garfield</td>
<td>1.557</td>
<td>17</td>
<td>30.91</td>
<td>5</td>
<td>10</td>
<td>16.18</td>
<td>2</td>
</tr>
<tr>
<td>Gerstmeyer</td>
<td>1.415</td>
<td>4</td>
<td>23.53</td>
<td>1</td>
<td>1</td>
<td>11.76</td>
<td>0</td>
</tr>
<tr>
<td>State</td>
<td>1.731</td>
<td>2</td>
<td>18.18</td>
<td>1</td>
<td>1</td>
<td>16.18</td>
<td>0</td>
</tr>
<tr>
<td>Wiley</td>
<td>1.455</td>
<td>38</td>
<td>38.0</td>
<td>20</td>
<td>28</td>
<td>28.0</td>
<td>11</td>
</tr>
<tr>
<td>Totals</td>
<td>1.501</td>
<td>61</td>
<td>33.33</td>
<td>27</td>
<td>40</td>
<td>21.86</td>
<td>13</td>
</tr>
</tbody>
</table>
the course at Rose, the average Garfield student four and three quarters years, the average Gerstmeyer student four and one half years, while the average State student would require four and one fourth years.

The State students make the better grades, with Garfield, Gerstmeyer, and Wiley students ranking second, third, and fourth, respectively.

There is less variability among the State students, with Gerstmeyer, Garfield, and Wiley students ranking second, third, and fourth, respectively, in the number of credits earned. In the number of credit points earned, the Gerstmeyer students are the least variable, with Garfield, State, and Wiley following in the order named.

The State students have a better ratio of credit points to credits than any of the other students, with Garfield second, Wiley third, and Gerstmeyer students, last. This last fact, combined with the least amount of variability seems to indicate the Gerstmeyer students seldom attain the higher rankings in scholarship at Rose.

The percentage of failures is much too large, especially in the first year. To save the students' time, money, self-respect, and mental well-being, more effort should be made to keep those students who are incapable from ever enrolling at the Rose Polytechnic Institute.
VI. SCHOLARSHIP ACHIEVEMENT
AT INDIANA STATE TEACHERS COLLEGE

In making the study of the scholarship achievement at the State Teachers College, the students' records for the five years, 1928 to 1932, inclusive, were used. A sufficient number of cases was found to give apparently reliable measures. There were 170 students enrolled from Garfield, 48 from Gerstmeyer, 63 from the Training School, and 461 from Wiley High School. A summary of the results is presented in Table XI, and Table XII. In this study, the complete number of hours work attempted, and all grades earned by the students, are used, hence the indexes are actual scholarship indexes. A straight "A" average would yield an index of 100, a "B" average, an index of 75, a "C" average, an index of 50, while an average of "D" would give an index of 25. As it is necessary to have an average of "C" or better to complete the teaching courses, an average below that making one ineligible for practice teaching, an index of 50 or over can be considered satisfactory.

A. Average Scholarship Index of Local Students

As was the case at the Rose Polytechnic Institute, the students from the State Training School have the best average scholarship index. These students have an index of 62.738, which is approximately at the midpoint between a "B" and "C" average mark. This is shown in Table XI. The Garfield students rank second with an average index
of 55.853, Wiley third with 51.318, and the Gerstmeyer students a poor fourth with an average index of 44.792. This last group is the only one for which the index shows less than a "C" average.

**TABLE XI**

**SCHOLARSHIP ACHIEVEMENT AT THE STATE TEACHERS COLLEGE**

<table>
<thead>
<tr>
<th>School</th>
<th>Number of Students</th>
<th>Mean Scholarship Index</th>
<th>Standard Error of Mean</th>
<th>Median Scholarship Index</th>
<th>Standard Error of Median</th>
<th>Standard Deviation</th>
<th>Standard Error of Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Garfield</td>
<td>170</td>
<td>56.853</td>
<td>±1.372</td>
<td>56.25</td>
<td>±1.715</td>
<td>17.891</td>
<td>±.9703</td>
</tr>
<tr>
<td>Gerstmeyer</td>
<td>48</td>
<td>44.792</td>
<td>±2.643</td>
<td>45.64</td>
<td>±3.304</td>
<td>18.313</td>
<td>±1.669</td>
</tr>
<tr>
<td>State</td>
<td>63</td>
<td>62.738</td>
<td>±2.08</td>
<td>62.50</td>
<td>±2.60</td>
<td>16.509</td>
<td>±1.471</td>
</tr>
<tr>
<td>Wiley</td>
<td>461</td>
<td>51.318</td>
<td>±.901</td>
<td>52.08</td>
<td>±1.226</td>
<td>19.342</td>
<td>±.637</td>
</tr>
</tbody>
</table>

**B. Reliability of the Average Scholarship Index**

As can be seen in Table XI, the average scholarship indexes are quite reliable. The indexes for Wiley and Garfield are the most reliable because of the larger number of cases included. For Wiley, the chances are 68 in 100 that the true average does not diverge from the obtained average by more than .9008 of a point. If the true average were this much lower than the obtained average, the index would then be 50.4, really a "C" average. We are practically certain
that the true average will not diverge from the obtained average by more than three times the standard error, or in this case, 2.7 points. It is interesting to note that the obtained average, plus or minus the standard error, will in no case overlap the next ranking school, either above or below. In order of their ranking, together with their standard errors, the averages for each school are:

- State Training School  62.738 ± 2.08
- Garfield High School  55.853 ± 1.372
- Wiley High School  51.316 ± 0.901
- Gerstmeyer High School  44.792 ± 2.643

C. Variability of Local Students at State

Table XI also shows those students coming from the Training School to be the least variable, by a small fraction, than any of the local students. As their scholarship index is also much above that of the other students, this means a much larger number of the students from the Training School do better work than those from any of the other schools.

As the standard deviation in a normal distribution, when measured off above and below the average, marks the limits of the middle 68.26%, and this is approximately true of less symmetrical distributions, the upper and lower limits marking off this 68.26% for each school are:

\[ \text{State Training School: } 62.738 \pm 2.08 \]
\[ \text{Garfield High School: } 55.853 \pm 1.372 \]
\[ \text{Wiley High School: } 51.316 \pm 0.901 \]
\[ \text{Gerstmeyer High School: } 44.792 \pm 2.643 \]

---

State Training School  79.247 - 46.229
Garfield High School  73.744 - 37.962
Wiley High School  70.660 - 31.976
Gerstmeyer High School  63.105 - 26.479

It at once becomes apparent that there is a distinct difference in both the upper and the lower limits of this 68.26% for each school, as compared with the other schools.

D. Reliability of the Standard Deviations

As Table XI shows, the standard error in no case is as much as two points, that for Gerstmeyer being the least reliable, with a standard error of 1.869. This means that the chances are 68 in 100 that the true standard deviation lies between 16.444 and 20.182 for Gerstmeyer, and so on for the rest of the schools. That for Wiley is, of course, the most reliable, the standard error of the standard deviation being only .637, in this case.

E. Grade of Work Done

In Table XII is presented a further analysis of the grade of work done by the local high school graduates in the State Teachers College. It would seem that no school has what might be considered, in all respects, a satisfactory record. As it is the author's contention that all those who are unable to do satisfactory work should be weeded out before they get as far as college, and as the faculty regulations of the school forbid anyone with an
average of less than "C" to take practice teaching courses, then averages of less than "C" are to be deemed unsatisfactory. Of course, if such an ideal were to be reached, a grade of "C" would no longer represent average work, but inferior work, a grade of "B" would be average, and a grade of "A" would represent superior work. There are 77.8% of the Training School students doing "C" or better work, 62.9% of the Garfield students, 55.5% of the Wiley students, and only 35.4% of the students from Gerstmeyer. Conversely, there are 22.2% of the students from State doing unsatisfactory work, 37.1% of those from Garfield, 44.5% of those from Wiley, and 64.6% of those from Gerstmeyer doing unsatisfactory work at the State Teachers College.

In the upper levels, the Training School has nearly twice the percentage of students doing "B" or better work than any other school. There are 30.2% of these students in this group, as compared with 17.1% of the students from Garfield averaging above "B", 13.02% of the Wiley students, and only 4.17% of the Gerstmeyer students.
TABLE XII

PERCENTAGE OF STUDENTS AVERAGING DIFFERENT GRADES AT STATE TEACHERS COLLEGE

<table>
<thead>
<tr>
<th>School</th>
<th>% Above B &amp; Average</th>
<th>% Above C &amp; Less than B</th>
<th>% Above D &amp; Less than C</th>
<th>% Less than C or above &amp; Satisfactory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Garfield</td>
<td>17.059</td>
<td>45.882</td>
<td>34.706</td>
<td>3.777</td>
</tr>
<tr>
<td>Gerstmeyer</td>
<td>4.167</td>
<td>31.25</td>
<td>54.167</td>
<td>0.417</td>
</tr>
<tr>
<td>State</td>
<td>30.159</td>
<td>47.619</td>
<td>20.635</td>
<td>1.587</td>
</tr>
<tr>
<td>Wiley</td>
<td>13.015</td>
<td>42.516</td>
<td>35.575</td>
<td>8.894</td>
</tr>
</tbody>
</table>

F. Conclusions

The students from the State Training School seem to be more adequately prepared for the work at the State Teachers College than do the students from any of the large high schools. Attention should again be called to the lack of intelligence quotients for all students. How much of this superiority is due to higher native intelligence ratings, if any, we do not know. Familiarity with the methods, teachers, procedures, equipment, and similar factors have an influence that is unmeasured.

The students from the trade school, Gerstmeyer, seem to be least fitted for the work at the Teachers College than the students from any of the other high schools. This indicates that those students contemplating a college career had better attend an academic high school.

There are more students from the Training School in
the upper grade levels, with the smallest number in the failing group. The students from Gerstmeyer are the only ones a majority of whom do not do satisfactory work at the Teachers College. Here, as in the study of scholastic achievement at the Rose Polytechnic Institute, better guidance, and need for more adequate preparation before going to college seem to be needed in the high schools. It would seem much better to discourage a student from attempting work he cannot do, rather than allow him to try such work and make a failure of it.
VII. COMPARATIVE SUCCESS AT STATE TEACHERS COLLEGE
OF HIGH SCHOOL STUDENTS GRADUATED
FROM DIFFERENT COURSES OF STUDY

Only the Wiley and Gerstmeyer High School records were used in the comparative study of the results achieved by the students graduated from a general or an academic course of study. No distinction is made in the records at Garfield High School between a general and an academic course of study, while the Training School does not offer a choice in courses of study.

The records of students graduated from Garfield, Gerstmeyer, and Wiley are included in the study of the commercial course, and practical arts course students.

A. Comparative Measures at State Teachers College

As shown in Table XIII, the mean scholarship index of those students at the State Teachers College graduating from the commercial courses of our local high schools is highest. This index is 55.22, with that for the academic course students from Gerstmeyer and Wiley a very close second, it being 55.13. As all the students from the Training School should, perhaps, be properly included as academic course students, this slight difference would be more than offset by the higher ranking students from the Training School, as shown in Chapter VI.

The standard error for the commercial course students is twice the size of that for the academic course students, it being ± 2.58, as compared with ± 1.27. This further
indicates that this slight difference is not reliable. The students from the general courses of study rank third with a scholarship index of $48.02 \pm 1.25$, and the students from practical arts courses are last with an index of $40.26 \pm 2.235$.

There is a little less variability among the practical arts students, as the standard deviation for the group is $17.024 \pm 1.581$. The commercial course students are second with $17.881 \pm 1.325$; the academic course students, third, with $18.535 \pm .898$; and the general course students most variable with a standard deviation of $18.656 \pm .985$.

TABLE XIII
MEASURES OF WORK DONE AT STATE BY STUDENTS GRADUATING FROM DIFFERENT HIGH SCHOOL COURSES OF STUDY

<table>
<thead>
<tr>
<th>Course of Study</th>
<th>Number of Cases</th>
<th>Mean Scholarship Index</th>
<th>Standard Error of Mean</th>
<th>Standard Deviation</th>
<th>Standard Error of the Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic</td>
<td>213</td>
<td>55.129</td>
<td>$\pm 1.27$</td>
<td>18.535</td>
<td>$\pm .998$</td>
</tr>
<tr>
<td>General</td>
<td>222</td>
<td>48.018</td>
<td>$\pm 1.252$</td>
<td>18.656</td>
<td>$\pm .985$</td>
</tr>
<tr>
<td>Commercial</td>
<td>46</td>
<td>55.218</td>
<td>$\pm 2.581$</td>
<td>17.881</td>
<td>$\pm 1.325$</td>
</tr>
<tr>
<td>Practical Arts</td>
<td>58</td>
<td>40.259</td>
<td>$\pm 2.235$</td>
<td>17.024</td>
<td>$\pm 1.581$</td>
</tr>
</tbody>
</table>

B. Comparative Rankings in High Schools

Table XIV shows that the academic course students at
both Wiley and Gerstmeyer High Schools, and continuing at the State Teachers College, rank higher than the students on any other high school course of study. The commercial course students at Wiley, and the general course students at Gerstmeyer take second rank, with the practical arts students, in both schools, last.

Though the number of students included in the study is too small to make any reliable conclusion, there is a tendency for the commercial course students from Garfield to be rather evenly distributed throughout their high school classes, while the practical arts students seem to come from the upper levels of their classes. A larger number of cases would perhaps change this latter tendency.

### TABLE XIV

**RANKINGS OF STUDENTS FROM DIFFERENT COURSES IN THEIR HIGH SCHOOL CLASSES**

<table>
<thead>
<tr>
<th>Course of Study</th>
<th>Median Percentage at Wiley</th>
<th>Mean Scholarship Indexes at Gerstmeyer</th>
<th>Class Rankings of the Garfield Students</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Upper Third</td>
</tr>
<tr>
<td>Academic</td>
<td>87.0</td>
<td>2.94</td>
<td></td>
</tr>
<tr>
<td>General</td>
<td>85.8</td>
<td>2.69</td>
<td></td>
</tr>
<tr>
<td>Commercial</td>
<td>86.8</td>
<td>2.35</td>
<td>5</td>
</tr>
<tr>
<td>Practical Arts</td>
<td>81.6</td>
<td>2.32</td>
<td>4</td>
</tr>
<tr>
<td>All Students</td>
<td>85.2</td>
<td>2.41</td>
<td></td>
</tr>
</tbody>
</table>
C. Work Done by Commerce Students at State

As shown in Table XV, those students who were graduated from high school on an academic course do slightly better than those students who were graduated from a commercial course and continue those subjects at the State Teachers College. There is considerably less variability among those students who were graduated from a commercial course than from either the academic or the general course of study. Those students who were graduated from a general high school course, and entered State Teachers College on the commercial course, have the poorest mean scholarship index, it being equivalent to slightly less than a "C" average.

**TABLE XV**

**COLLEGE ACHIEVEMENT OF STUDENTS ON THE COMMERCIAL COURSE AT STATE**

<table>
<thead>
<tr>
<th>High School Course of Study</th>
<th>Number of Cases</th>
<th>Mean Scholarship Index</th>
<th>Standard Error of the Mean</th>
<th>Standard Deviation</th>
<th>Standard Error of the Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial</td>
<td>21</td>
<td>55.119</td>
<td>± 3.695</td>
<td>15.009</td>
<td>± 2.316</td>
</tr>
<tr>
<td>Academic</td>
<td>46</td>
<td>56.739</td>
<td>± 2.965</td>
<td>20.107</td>
<td>± 2.096</td>
</tr>
<tr>
<td>General</td>
<td>41</td>
<td>49.085</td>
<td>± 2.974</td>
<td>19.045</td>
<td>± 2.103</td>
</tr>
</tbody>
</table>
D. Work Done by Practical Arts Students at State

There were not enough students enrolling on the practical arts courses at State from our local high schools to make a reliable study. Attention is directed to Table XVI as merely indicating the tendency of practical arts students. It will be noted that those graduated from high school from the academic courses rank better at State, with those from the high school practical arts courses making the poorest showing. Not only do the practical arts students make the poorest showing in high school, but the course, also, does not seem to fit them for work in the State Teachers College. As many of these students are from the lower sections of their high school classes, it seems a probability that, if the intelligence quotients of these students were available, they would prove to have the lowest average intelligence quotients. This may be true, too, because school averages are composed so thoroughly of marks made in "book subjects", while these students have a special aptitude for work with their hands. But even so, this does not explain the fact that those students who were graduated from the high schools on the two "book subject" courses, the academic and the general, should do so much better than the high school practical arts students when all come to the State Teachers College and enter upon the practical arts course of study.
On the average, the work done by the practical arts students at the State Teachers College, and in their high school classes, is the poorest.

Those students who were graduated from high school on an academic course do slightly better work on the
commercial course at the Teachers College than do those students whose college preparation included commercial work. Those students who were graduated from general high school courses do poorest on the commercial course at the State Teachers College.

Those students who were graduated from an academic high school course do better on the practical arts course at the State Teachers College than either the students from a high school practical arts course, or general course.

There is a possibility, and a probability, that those students of superior native intelligence elect in high school the academic course of study. This is not determined by this thesis. Yet, this variable does not seem to account for all the difference in work done at the State Teachers College, hence the conclusion that the old style academic course is the best college preparatory course, for the Indiana State Teachers College, at least.
VIII. GENERAL SUMMARY AND CONCLUSIONS

The average of those students who are graduated from our local high schools and continue at both the State Teachers College and the Rose Polytechnic Institute is above the average of students in our local high schools.

The students from our small high school, the State Training School, are better prepared for the work at the State Teachers College and the Rose Polytechnic Institute than those students from any other high school, as judged by their college records.

Those students from the trade school, Gerstmeier High School, are most poorly prepared for the work at the State Teachers College, while the students from Wiley High School are most poorly prepared for the work at the Rose Polytechnic Institute, as judged by their college records. This last fact is also borne out by the larger number of failures from Wiley, and the number of students who enroll at the Rose Polytechnic Institute but do not remain there even one semester.

The percentage of students who do unsatisfactory work at the State Teachers College is too large from all the high schools, with the possible exception of the Training School. Even in this case, nearly one-fourth of the students have an unsatisfactory average in the Teachers College. Approximately two-thirds of the Gerstmeier graduates, one-half of the Wiley graduates, and forty per cent of the Garfield High School graduates do unsatisfactory work.
As judged by the State Teachers College records, those students who were graduated from an academic course of study in high school do better work than those from any other course, with those graduated from a commercial course a close second. These students also do better work in their high school careers. Those students graduated from a practical arts high school course are least prepared for the work at the State Teachers College, even when the practical arts course is continued in college, as judged by their college records.

It seems to make little difference, as far as average scholarship is concerned, whether those students on the commercial course at the Teachers College were graduated from a high school commercial, or an academic course, with the latter group doing slightly better work. This is true for all students enrolled at the Teachers College, regardless of the course they are entered upon, though in this case there is a very slight margin in favor of the commercial students, when the students from the State Training School are excluded.

On the whole, then, one can conclude that those students from the small high school, the Teachers Training School, are best prepared for college work at the State Teachers College and the Rose Polytechnic Institute, and those students from the trade school, Gerstmeyer High School, are least prepared. As to courses of study, the old-fashioned academic course still seems to be the best college preparatory course.
IX. INTERPRETATION, APPLICATION, AND RECOMMENDATIONS

A. Interpretation

When blessed with equal teaching staffs, administrative officers, school buildings and equipment, the small school does not send a product to the Rose Polytechnic Institute or to the State Teachers College that is inferior to that from the large high schools. Some variable, other than mere size, seems to account for any general inferiority of the small high school graduate. In fact, the smaller classes at the State Training School seem to create a better product than that from any of the large high schools in this city.

Students who contemplate a college career should not enroll in a trade school, especially those students in Terre Haute who contemplate going to the Indiana State Teachers College. These students are not adequately prepared for the academic work of a teachers' college.

For some reason, unknown to the author and undisclosed by this study, the graduates of Wiley High School are least fitted for the difficult and exacting work required in the mathematics and science courses offered at the Rose Polytechnic Institute. The author doubts that it is due to lack of native intelligence, but is inclined to believe the reason is to be found either in the discipline and morale of the school, the teaching or administrative staffs, the school equipment, the
standards maintained in the separate studies, or a combination of some of these factors. Dr. Prentice, president of the Rose Polytechnic Institute, thinks that all high school students should be better taught how to work and study. Perhaps this is more true for the Wiley High School graduates than for some of the others.

The results of the study indicate that the students from the State Training School are less variable, more evenly prepared for college work than those from any other school. Once more, attention should be called to the fact that this may be due to a higher average intelligence quotient. This would indicate that more attention is paid to individual differences of the students at the Training School. The converse of this is true at the Wiley High School. These students are the most variable both at the State Teachers College and the Rose Polytechnic Institute. This would seem to indicate that perhaps the degree of a pupil's fitness for the college work depends to a larger extent upon the pupil himself, with less attention paid to his individual needs, wants, and interests by the teaching staff at this school. This is of course, the author's interpretation and may not be justified were all facts known.

Students little fitted for the courses offered at the two colleges, seem to wander to these institutions merely because they are in their home town. As a result many students attend but a very short time, and often make a
complete failure of the work attempted, soon dropping out of college with perhaps little better idea of what they want to do, or can do next. Too many of our local students, unfitted for the work of our two colleges, enroll at these two institutions.

Though condemned by many as being out-of-date, the academic, or college preparatory course of study really best prepares the high school student for college work at the Teachers College. Perhaps there is a disciplinary value after all in the foreign language and mathematics courses of the academic high school course. This may be true of the training in reasoning given by the bookkeeping courses, and the training in self-control, concentration, and quick thinking given in the typing and shorthand courses, for the students from the commercial courses are practically as well prepared as the academic course students for work at the Teachers College. Of probably more importance, though, is the probability that a better type student, on the average, elects these two courses, hence the superiority would be due to native intelligence rather than the influence of either of the courses.

A practical arts course in high school seems to offer least in college preparatory training. Students contemplating a college career should be discouraged from taking this course. The greater amount of training in reading, in getting the thought from a printed page, in solving problems with the mind given in the "book courses" seems to much better fit the student for college.
B. Application, and Recommendations

In the first place, many more studies need to be undertaken before any very serious recommendations can be made. Some of these studies are suggested in the following sections. Some of the author's recommendations would be:

1. Closer Coordination of Work in Local High Schools. There seems to be no good reason why all high schools in the city public school system should not offer the same general and academic courses, with the same standards of achievement for all schools. As the number of students at Gerstmeyer High School enrolled on these two courses is small, perhaps these students had best be sent to either Garfield or Wiley High School, and Gerstmeyer kept strictly a trade school.

2. Standardization of Records and Office Practice. As the schools are all in the same system, with the exception of the State Training School, it seems the same method of ranking should be used in all schools. This would simplify any investigation or survey that might be desired by the school principals, or by the superintendent of schools. Then, too, if all schools used the same forms and blanks in their system of record keeping, there should be a saving of money to the school city.

3. Study of the Needs of Students Enrolling at Rose. Some study should be made, preferably by the local school authorities, of the work a student should have completed before entering the Rose Polytechnic Institute. This
study would determine the essentials, the fundamentals, of a preparatory course for Rose Polytechnic Institute. No student should be required to take work at Rose, non-credit courses, simply because he did not have the work in high school, with the exception, perhaps, of those students who contemplate some other line of work and later decide to attend the Rose Polytechnic Institute.

4. **A Separate Course of Study for Future Rose Students.** When nearly two hundred students in five years, an average of forty per year, attend the same institution, with a subsequent failure of one-third of these students, a separate course of study is justified, and very much to be desired. Preferably, to keep down expenses, this would be offered in the best equipped of our high school buildings. The author is certain that the administrators and faculty at the Rose Polytechnic would be more than glad to cooperate with the local authorities in establishing such a course. It would not only provide the proper fundamentals, the proper training in exacting and difficult work, but would serve to weed out those incapable of doing the work at that institution while the student still had time in high school to take up another line of work for which he might be better fitted. This course should be given by those teachers best fitted in their particular lines of work, and would probably be begun about the third year in high school.

5. **Study of the Needs of Students Enrolling at State.** The same general recommendations are offered here as in
paragraph three of this section. Because of the greater diversity of work offered at the Teachers College, this would be a much more difficult undertaking than the other study. Surely, though, certain fundamentals such as amount of training in English and grammar, native intelligence required, certain personal qualifications, and so on, could be determined that would hold true for all students regardless of the work contemplated at the Teachers College. But, as this is a state institution, there would be no way of keeping out those undesirables who were determined to enter. The greatest deterrent would have to be the guidance by the high school faculties.

6. A Separate Course of Study for Future State Students. Again the same general recommendations are in order as those pertaining to a Rose preparatory course. Here, the number is so much greater, an average of nearly one hundred and fifty students every year, that it is fully justified. This would not be, perhaps, as elaborate a course as that for Rose, but should certainly include courses in English, literature, how to read, how to study, history and other social sciences, an elementary course in psychology, perhaps, and other courses in sciences.

7. A Study of the Teaching Methods Best Fitting Students for Work at Rose and at State. Perhaps some teaching method such as the laboratory, the Dalton plan, or the old question and answer method is best for these future college students. This would be a long and involved study, but as the number of students involved is so great it should be worthwhile.
If the needs of the students were determined, the best methods of filling those needs, and the very best teachers to use those methods found, the question of a student's success or failure would then be squarely up to the student.

8. A Study of the Reasons for Failure. This should be undertaken at the earliest possible moment, and action taken following the study. We hear much of guidance in theoretical discussions of school work, but the evidence here seems to show that it is lacking in our local schools. Of course the proximity of the two colleges, and parental desires, would offset much of the good advice given by high school faculties, but if we knew the real reasons for failure, some means might be found to counteract them. The problem seems to be as much a one of elimination through proper guidance as it does one of pre-college preparation.

C. Future Research Needed

To the author, this study would be but a minor one of a long list of studies dealing with some phase of the same problem. Before anything concrete can come from this study quite a few others will have to be made, publicity given them, even though toes are stepped upon, and the conditions made known to school authorities and public alike. Among those studies would be these:

1. The reason for failure and success at Rose and State.
   a. Courses requisite for success.
   b. Personal qualifications requisite for success.

2. The fundamental requirements of a good college
preparatory course, both for Rose and State.

3. Best methods of teaching for high school preparatory courses for Rose and State.

4. Personal qualifications necessary for successful college preparatory teaching for Rose and State.

5. Reasons why one school excels another in its college preparatory work.

6. Detailed study of the work done by successful students and by failing students to determine whether the quality of work is due to
   a. Native intelligence.
   b. The influence of any one teacher's work.
   c. Personal characteristics.

7. Amount of school equipment necessary for a satisfactory college preparatory course.

8. Reason for apparent superiority of academic and commercial courses as college preparatory courses.

9. Reasons for failure of practical arts courses as college preparatory courses.

10. Reasons for failure of general courses as college preparatory courses.

11. A comparative study of the students electing the academic, commercial, general, and practical arts courses to determine whether there is a difference in the native intelligence of the students.

12. A study to determine the number of students attending the two colleges because of personal interests, proximity of the colleges, parental desires, and other reasons.
13. A study to determine the lowest high school average indicative of probable college success.

14. Correlation between high school grades and college grades, limited, of course, to Terre Haute schools.

15. A study of the grades made in college in those same subjects, only, that the student studied in high school, such as the grades made in commercial subjects in high school and college. To put the question in another way, why do not the students who are graduated from a commerce or practical arts course do better in those same subjects when they come to State than students who have never studied those subjects?

16. Reasons for the greater amount of variability among students from some high schools than from others.

17. Reasons why students enroll at either of the colleges and then withdraw before completing even one term or semester's work.

18. Comparative study of the average intelligence, social ages, economic environment, past experiences, opportunities to learn out of school such as travel, and similar factors, for the students in our local high schools.

19. Comparative study of the results achieved by those who must do some outside work as compared with those students entirely supported by their parents.

20. A study of the reading ability, including the
ability to get the thought from a printed page, of all college and high school students.

21. A continuation of this study to include more cases, thereby making the results more reliable, and also including the intelligence quotients of all high school pupils, as well as their high school records. These quotients are not now available, so some means would have to be found to induce the school authorities to determine these quotients.

This list is by no means complete but the author believes that it contains the major points necessary to determine what would constitute adequate high school courses for those who will continue their school careers at either the Rose Polytechnic Institute or the Indiana State Teachers College. Other studies, as they develop, would be added to this list, all looking forward to insuring the success of every high school graduate embarking upon either a teaching career or an engineering career from any of our local schools. Those who were not fitted either mentally, socially, physically, or morally would be located before they got as far as the colleges, and induced to attempt some other line of work. The quality, as well as the quantity, of Terre Haute students would be greatly respected in the engineering and educational worlds, and Terre Haute would acquire at least one enviable reputation.
X. APPENDIX

A. Bibliography


Ely, Wayne H. "Scholastic Success of Students from Small High Schools versus Students from Large High Schools." M.A. Thesis. Terre Haute: Indiana State Teachers College, 1930.
