ACADEMIC ABILITY OF SELECTED EDUCATION AND NON-EDUCATION
STUDENTS GRADUATING FROM DRAKE UNIVERSITY IN 1967

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by
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ACADEMIC ABILITY OF SELECTED EDUCATION AND NON-EDUCATION STUDENTS GRADUATING FROM DRAKE UNIVERSITY IN 1967

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Approved by Committee:

[Signatures]

Dean of the Graduate Division
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CHAPTER I

INTRODUCTION

Constantly expanding fields of knowledge and rapidly advancing scientific and technological discoveries in the American society of today present difficult challenges to the already crucial role of the teaching profession in the attainment of the educational goals of our democratic way of life. The rapidity and complexity of these changes indicate that children now in school will, as adults, live in a world radically different from that of today. To provide the type of education which will enable tomorrow's citizens to adapt to and function effectively in such a changed society, the teaching profession must attract competent, intelligent persons capable of, and interested in, providing those experiences which will enable each individual to develop fully his interests and abilities and to become a useful productive member of society.

I. THE PROBLEM

Statement of the problem. To gain a better perspective of the type of students entering the field of education at Drake University, this study made a comparison of selected education and non-education students on the
basis of high school class rank, Cooperative School and College Ability Test scores, and Graduate Record Examination scores. Comparisons were made to determine whether education students ranked higher or lower than non-education students on Graduate Record scores and to determine whether there was a relationship between these scores and ratings of academic ability at the beginning of college training.

Importance of the study. Countless studies have been made in attempts to determine the qualities of a good teacher. However, many of these studies have not produced significant results. "Despite the critical importance of the problem and a half-century of prodigious research effort, very little is known for certain about the nature and measurement of teacher personality and teaching effectiveness."1 This indicates there may be no one pattern of traits necessary and no single type of personality needed for a person to become a capable teacher.

Although specific trait characteristics of a good teacher may not have been successfully delineated, the necessity for high academic aptitude and achievement has been established. The National Commission on Teacher

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Education and Professional Standards stated that "there is general agreement on the importance of high-level achievement, emotional stability, and the characteristics generally found in excellence of professional achievement in any field."¹ There is considerable evidence that such characteristics are of greater importance in the teaching profession than in many other professions.

Educators have become concerned that the most capable students have been attracted to other professions rather than entering or remaining in the teaching profession. To correct this trend, those responsible for preparing teachers must scrutinize and re-evaluate their education programs and policies. It has been found that colleges and universities which maintain high admission and retention standards to the teacher education program attract students of academic aptitude equal to that in other areas; but, if admission standards are low, the students of lowest academic ability are attracted to education.² "State-by-state studies have


for several years indicated that wherever certification standards are advanced (or even announced prior to enforcement) enrollments in teacher education jump disproportionately to the increase in the over-all college population.\textsuperscript{1} Thus, selective admission and retention in the teacher education programs are seen as a means of improving the quantity as well as the quality of qualified teachers.

Objective data such as tests and other quantitative measures must be utilized, in addition to subjective data, in this selection and retention process. Ebel contended that if excellence in education is to be attained, measurement will be the means of attainment.

If intellectual excellence becomes the primary goal, measurements will be used increasingly in all aspects of the selection and education of prospective teachers. Research leaves little doubt that tests and measurements can help education toward excellence, if that is where educators want it to go.\textsuperscript{2}

A comparison, then of the academic abilities of education and non-education students of Drake University would provide an indication of the caliber of students being attracted to the College of Education in this institution. All colleges and universities involved in preparing teachers

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\textsuperscript{1}Lindsey, \textit{op. cit.}, p. 65.

must continuously examine and evaluate their selection and retention policies, for these policies affect the quality of their products and the effectiveness of their programs.

Teaching must become a profession worthy of its high responsibilities and must attract to it enough capable young people to staff the schools as the American goal of education for all is approached. There must be careful consideration of who should enter the profession as well as of what makes up the best programs of preparation.¹

II. LIMITATIONS

The study was limited to a comparison of high school class rank, Cooperative School and College Ability Test scores, and Graduate Record scores obtained for selected Drake University students who would graduate in June of 1967. A random sample of twenty was chosen from each of four groups. These four groups were (1) Elementary Education majors, (2) Secondary Education majors, (3) Liberal Arts majors taking education courses for certification, and (4) Liberal Arts majors not taking education courses. The sample was chosen from those who had completed at least two years at Drake, were under thirty years of age, and for whom complete data were available. The data were compiled

from the college records of the students.

Although the scope of this study was limited to a comparison of selected indicators of academic ability and achievement, it was realized that other objective and subjective factors must be considered in obtaining a complete perspective of the students involved. It was assumed that the individuals included in this study were representative of the group from which they were selected.

III. PROCEDURE

A review of related studies and literature was made. Names of students scheduled to graduate from the Colleges of Education and Liberal Arts in June, 1957, were obtained and were divided into four groups. The groups were (1) Elementary Education majors, (2) Secondary Education majors, (3) Liberal Arts majors taking education courses for certification, and (4) Liberal Arts majors not in education. College files were used in obtaining high school class rank, Cooperative School and College Ability Test scores, and Graduate Record scores for these students. Students who had attended Drake for less than two years or who were over thirty years old were eliminated, as it was felt these students were not representative of the typical Drake student.

The names of those for whom all data were available were given a number. Twenty numbers were selected at random.
for each group. Names represented by these numbers were then included in the sample for each group.

After the sample had been selected, the high school class rank for each student was converted into a percentile rank. Then, for each of the four groups, the mean scores were computed for the high school class rank; verbal, quantitative and total scores of the Cooperative School and College Ability Test; and verbal and quantitative scores of the Graduate Record Examination. The means of the four groups were then compared and ranked on each of these measures of academic ability and aptitude.

The data were analyzed to determine whether the relative ranking of the four groups on these measures of academic ability and aptitude at the beginning of college training was related to that obtained at the end of training. From this comparison and analysis, conclusions were drawn and reported.
CHAPTER II

REVIEW OF THE LITERATURE

There is general agreement among educators of the necessity of attracting and training persons who could become competent teachers. There is less agreement as to the means of selecting and preparing those persons. In 1953, Stout made a survey of admission and retention practices of the four year institutions preparing teachers. Of the 785 institutions responding to the questionnaire, five-sixths believed in selective admission. Whereas three-fourths of the institutions used objective tests and inventories, only 314 of these used these tests for admission purposes. ¹ Although the majority of the responses expressed belief in selective admission, two-fifths of the institutions granted admission to the teacher training program to all who sought it. Forty-five per cent of the remaining 471 institutions excluded only from one to ten per cent and only nineteen institutions excluded more than twenty-five per cent for admission to the teacher education program. ² Such statistics led Ebel to observe:

Some educators of teachers believe so firmly that the school's mission is to educate each person to the

¹Stout, op. cit., p. 304. ²Ibid., p. 306.
limit of his capacity—which, if taken literally is an impossible goal—that they have serious doubts about denying to anyone who wants to become a teacher the opportunity to try.1

Of those 314 institutions using selective admission procedures to the teaching program, fifty-eight per cent used academic grades as a basis for evaluation. Emotional stability and personal-social-ethical fitness were considered in forty-five per cent of the institutions.2 Scholastic standards for admission to the teacher education program compared favorably with those in other areas. Only six of the 785 institutions had lower grade point admission standards and fourteen per cent required a higher grade point average than did other colleges in the same institutions.3

Included in Stout's study was a survey of retention policies in the teacher education programs. It was found that in 157 of the 785 institutions fewer than seventy-five per cent of those admitted to the program completed it. In two-thirds of the institutions, over seventy-five per cent completed the program. In half of the institutions, seventy-five per cent or more of those certified to teach upon graduation did go into teaching.4

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1 Ibid., op. cit., p. 16. 2 Stout, op. cit., p. 306. 3 Ibid., p. 313. 4 Ibid., p. 306.
On the basis of this survey, Stout determined that those institutions maintaining a definite and continuous plan of selection and evaluation during their teacher training programs produced a higher quantity and quality of teachers. These plans included definite objective tests and measures as well as specific subjective observations. These data were used, together with student's academic records, in selecting and guiding those students judged capable of becoming successful teachers.\footnote{Stout, \textit{op. cit.}, p. 317.}

This brief view of the admission and retention policies being followed in colleges and institutions preparing teachers provides a background for a review of the studies which have been done comparing the intellectual and academic ability of students in such programs to students in other college curricula.

One such study, conducted by Truxler in a ten year period from 1935-1944, found the average intelligence among freshmen in teachers' colleges consistently and significantly lower than the average of those in liberal arts colleges and equal to those in junior colleges. His findings were based on results of American College Examination scores. He converted these scores to Otis Intelligence Quotient Equivalents and then estimated the average difference between
the mean of those in teachers' colleges and those in liberal arts was 3.8 Intelligence Quotient points.¹

In another ten year study, Wellborn found a difference in the mean score on the American College Examination of 11.33 points favoring the liberal arts students over the education college students. The results of this study were based on the scores of 25,000 liberal arts freshmen and 3,500 education college freshmen. Wellborn felt such a variance could not be attributed to chance.²

A longitudinal study conducted by Bicknell produced similar results. This study consisted of 1,279 undergraduates in sixteen upstate New York colleges who were beginning teacher education programs in 1949-1950. On the basis of his study, Bicknell felt these institutions were not retaining the most capable students in their education programs. For example, the mean score on the American College Examination for one hundred women graduates who married

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or took non-teaching jobs was 123.71 whereas the 268 women graduates who began teaching had a mean score of 117.66. The nineteen women who changed from education during college had a mean score of 133.1. Of the 617 men involved in the study, 263 graduates entered teaching jobs. The mean score of this group was 118.64. This mean was approximately the same as that of the students who withdrew because of failure to achieve a satisfactory academic record. The group of thirty men who transferred out of education had a mean score of 123.29 which was the highest mean score of all male groups in the study.2

In the fall of 1957, 4,532 freshmen of New York Municipal Colleges were subjects of a study by Hitzel and Dubnick. Teacher education students and other liberal arts students were compared on the basis of high school grade averages and American College Examination raw scores. No significant difference was found between the high school grade averages of either men or women in teacher education or liberal arts. The mean grade average for men in teacher education was 82.87 and that of men in liberal arts was 82.32. Women in education had a mean score of 85.92 and

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2 Ibid.
women in liberal arts had a mean of 85.91.¹

However, on both the American College Examination quantitative and gross scores, both men and women in teacher education had lower mean scores than did those in liberal arts. Men in teacher education had a mean quantitative score of 45.14 compared to a mean quantitative score of 48.25 of the men in liberal arts. The quantitative mean score for women in education was 42.72 whereas that of women in liberal arts was 43.71. When gross scores were compared for these groups, the mean for men in education was 116.57 and men in liberal arts had a mean of 120.35. When gross scores of women in education and women in liberal arts were compared, the former group's was 113.79 and the latter's was 117.16.²

Members of one graduating class from the University of Arkansas were used in a study conducted by Northern in an effort to see how prospective teachers compared with students preparing to enter other occupations. Included in this study were the students in the Colleges of Education, Agriculture, Business Administration, Arts and Sciences (B.A. degree), Arts and Sciences (B.S. degree), and Engineering. These groups were compared on the basis of eight variables. Data used were (1) scores on the American Council

¹Hitzel, op. cit., p. 79. ²Ibid.
of Education Psychological Examination, (2) scores on the Barrett-Ryan-Schrammel English Test, (3) cumulative grade point average from high school, (4) college freshmen grade point averages, (5) college sophomore grade point averages, (6) college junior grade point averages, (7) college senior grade point averages, and (8) college cumulative grade point averages. Mean scores were obtained by curricular groups on each variable and were then compared.\(^1\) It was found that the mean scores of the education groups were consistently lower than those of the other groups.\(^2\)

Four variables, the American College Examination, the Barrett-Ryan-Schrammel English Test, high school grade point average, and college cumulative grade point average, were used to compare the men and women in each group as measures of ability, English usage, high school achievement, and college achievement. Results suggested that women were significantly superior to men on the English scores and high school achievement.\(^3\) The mean scores of all groups of men were consistently superior to those of the men in the Education College. On each of these four variables, this group ranked lowest except in the English test in

\(^1\) E. F. Norton, "How Well Do Prospective Teachers Compare With Students Preparing to Enter Other Occupations?" The Journal of Teacher Education, 11 (December, 1958), 362.

\(^2\) Ibid. \(^3\) Ibid., p. 369.
which the men in Education ranked next to the lowest. Of the twenty differences between means of men in Education and those of other groups on the four variables, only one was in favor of the Education group and it was not statistically significant. Of the nineteen differences in favor of the other groups, seventeen were statistically significant at the one per cent and five per cent levels.\(^1\)

When the mean scores of men and women combined were computed for each curricular group, the education group was consistently lowest. When the groups were ranked in terms of mean scores on each of the eight variables, each rank was then assigned a numerical value. On this basis, the B.A. degree group received forty-seven points, the B.S. degree group forty points, the Agriculture group received thirty-seven, Engineering received twenty-four, Business Administration received eighteen and Education received twelve points.\(^2\)

A study comparing teacher education students and non-teacher education students on measures of academic aptitude and achievement was made at Ohio State University. The five measures of academic aptitude and achievement used were the Ohio State Psychological Examination, Ohio

\(^1\text{Ibid., p. 393.}\) \(^2\text{Ibid.}\)
State Mathematics Screening Test, Ohio State English Placement Test, American College Test, and Cumulative grade point averages. Data were compiled from the records of all freshmen enrolled in the fall of 1962, juniors enrolled in the fall of 1963, and seniors being graduated in June of 1963. The colleges of Education, Agriculture, Arts, Commerce, and Engineering were represented in this study.\(^1\)

When a comparison was made of the Ohio State Psychological Examination scores of freshmen enrolled in the fall of 1962, the mean for education freshmen was 79.9 whereas the mean for non-education freshmen was 84.2.\(^2\) Scores of this test were also compiled for juniors enrolled in the fall of 1963. It was felt this comparison was important because many students transfer from other colleges, both on and off campus, to teacher education at this time. The mean for education juniors on this test was 81.95 compared to a mean of 88.64 for non-education students.\(^3\) A comparison of the scores of this test was also made of seniors graduating in June of 1963 and it was found that education students had a mean of 86.48 and non-education

\(^1\)Collins Burnett and Paul Macinn, "A Comparison of Teacher Education Students and Non-Teacher Education Students on Measures of Academic Aptitude on Achievement," The Journal of Teacher Education, XVII (Fall, 1966), 316.

\(^2\)Ibid., p. 314.

\(^3\)Ibid., p. 315.
students had a mean of 90.23.\(^1\) On each comparison of this
test, then, it was observed that non-education students
had the higher mean.

When the freshmen of the fall of 1962 were compared
on the Ohio State University Mathematics Test, freshmen
in the College of Education had a mean score of 16.17 where-
as that of freshmen in the remaining four colleges was 20.09.
A comparison of juniors on this test showed a mean of 17.23
for the education group and a mean of 21.82 for the non-
education group.\(^2\) Again, in both comparisons, non-education
students had the higher mean.

A third test used was the Ohio State University
English Placement Test. When freshmen scores were compared,
the mean of education students was 61.58, which was slightly
higher than the mean of 60.88 for non-education freshmen.
It was felt that this difference was due, in part, to the
fact that more women than men enroll in the College of
Education and that women, as a group, seem more proficient
than men in English composition.\(^3\) At the junior level, a
comparison of the two groups showed the difference of the
means to be not significant. The mean of the education
group was 62.94 compared to a mean of 62.85 for the non-

\(^1\) Ibid., p. 316. \(^2\) Ibid., p. 315. \(^3\) Ibid.
education group. The fourth measure used was the American College Test. A comparison of scores showed a mean of 20.36 for education freshmen and a mean of 22.42 for non-education freshmen. The results again favored the non-education students.

When cumulative grade point averages were compared, however, the results favored education students. When the cumulative grade point averages for juniors in 1963 were compiled, the education students had a mean of 2.55 whereas that of non-education juniors was 2.45. Seniors in education had a mean grade point average of 2.77 and seniors in non-education areas had a mean average of 2.73.

In summary, when education and non-education students at Ohio State University were compared on five measures of academic aptitude and achievement, non-education students scored higher on the Ohio State University Psychological Examination, the Ohio State Mathematics Screening Test and the American College Test. The education students maintained a higher grade point average and, as freshmen, performed better on the English Placement Test. All differences, except the comparison of the two groups as juniors on the

1Ibid. 2Ibid. 3Ibid. 4Ibid., p. 316.
English Placement Test, were significant at the five percent level or above.¹

Such results in studies comparing the academic abilities and achievements of education students with non-education students do not provide a very favorable indication of the caliber of persons being attracted to the teaching profession. Nor does the fact that students taking the advanced test in Education of the Graduate Record Examination get lower scaled scores than those taking any other advanced tests. Ebel stated that eighty-three per cent of those taking the advanced test in education received a scaled score of five hundred or less; whereas, only thirty-five per cent of those taking the test in mathematics received a score of five hundred or less.² Similar results are found in the norms of the various curricular groups on the Miller Analogies Test.³

However, whereas excellence in academic ability and achievement must be a goal of the teaching profession, it is but one of the qualifications to be sought in the potentially competent teacher. The National Commission on Teacher Education and Professional Standards recommended that "the selective processes at least be based on evaluation

¹ Ibid. ² Ebel, op. cit., P. 17. ³ Ibid.
of emotional maturity, moral and ethical fitness, health, demonstrated ability to work with children and youth, academic achievement, demonstrated competence in speech and basic skills and professional interest and motivation."¹

Recognizing the vital importance of defining the criteria for identification and selection of potentially capable teachers, some institutions have undertaken projects to determine and evaluate the goals of their education programs and to develop patterns which will best help them attain these goals. One such extensive project was the Elementary Education Research Project conducted by the elementary education faculty of Ball State University. In this eight year longitudinal and cross-sectional study of selected elementary education students, the subjects were comprehensively studied through four years of college and the first year of teaching. Objective data were obtained through seven standardized tests and subjective data were obtained from seven subjective professional judgements.²

This wide range of data provided a basis with which "to determine with clarity the characteristics of the product they hoped to produce, namely, a competent teacher" and

¹Lindsey, op. cit., p. 203.

to provide evidence of curricular changes necessary to produce this product.¹

Only through extensive studies of the intellectual and psychological abilities of the people entering the teaching profession can progress be made in the effort to determine and define the criteria with which selection can be made of the type of student capable of becoming a competent teacher, and to develop those programs by which such students can become proficient educators. The total teaching profession must accept this responsibility so that excellence in education is attained and maintained in the "preparation, entrance into the profession and continued effective performance in it".²

¹Ibid., p. 21. ²Lindsey, op. cit., p. 303.
CHAPTER III

PRESENTATION AND ANALYSIS OF THE DATA

Procedure. Colleges and universities must continually examine and evaluate their admission and retention policies in order to attract and retain those students most capable of becoming competent, effective teachers. To provide a prospective of the type of students entering the field of education at Drake University, this study made a comparison of selected education and non-education students on the basis of high school class rank, Cooperative School and College Ability Test scores, and Graduate Record Examination scores. Comparisons were made to determine how education students ranked with selected non-education students on Graduate Record scores and to determine whether there was a relationship between these scores and ratings of academic ability at the beginning of college training.

The sample for this study was selected from a list of those students who were scheduled to graduate from the College of Education and Liberal Arts at Drake University in June, 1967. Students on this list were divided into four groups. These groups were (1) Elementary Education majors, (2) Secondary Education majors, (3) Liberal Arts majors who were taking education courses for certification,
and (4) Liberal Arts majors who were not in education. High school class rank, Cooperative School and College Ability Test scores, and Graduate Record scores of these students were obtained from the college files. Students who had attended Drake for less than two years, who were over thirty years old, or for whom complete data were not available were eliminated.

Names of those students in each group for whom all data were complete were assigned a number. Twenty numbers were selected at random for each group and names represented by these numbers were then included in the sample for each group. Due to the limited number of students in two groups for whom all data were available, and in order to provide adequate groups from which random samples could be chosen, twenty was selected as the sample size for each group.

After the sample selection of the four groups was completed, the mean scores for each group were computed for the high school class rank; verbal, quantitative, and total scores of the Cooperative School and College Ability Test; and verbal and quantitative scores of the Graduate Record Examination. The means of the four groups were then ranked and compared on each of these measures of academic ability and aptitude.

Analysis of the data. The first comparison of the four groups was made of the high school class rank. In the
college files, the number of students in the graduating class and the individual student's numerical standing within that group were indicated. These were converted to a percentile rank for comparison purposes in this study. A ranking of the means on the basis of high school class rank produced the following results:

<table>
<thead>
<tr>
<th>High School</th>
<th>Percentile Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liberal Arts in Education</td>
<td>79.4</td>
</tr>
<tr>
<td>Secondary Education</td>
<td>71.6</td>
</tr>
<tr>
<td>Elementary Education</td>
<td>69.2</td>
</tr>
<tr>
<td>Liberal Arts</td>
<td>68.0</td>
</tr>
</tbody>
</table>

Those students in Liberal Arts who were taking education courses for certification had the highest mean high school class rank whereas the group of Liberal Arts students had the lowest mean.

The next measure used for comparison was the Cooperative School and College Ability Test. This test was administered to all students entering Drake University during the period in which students in this study were matriculating. Students who transferred into Drake were not required to take this test, which was a factor limiting complete availability of data for many students. Scores for this test were recorded in the college files in terms of percentile bands. Percentile bands, developed by the Educational
Testing Service to reduce the possibility of error due to chance, consist of "a range of percentile scores that may, in effect, be regarded as having a designated probability of including the examinee's true score."\(^1\) It was determined that the chances were two to one that the student's true score would lie within the interval of the appropriate percentile band.\(^2\) The percentile bands provide an indication of the student's percentile ranking based on national norms. Thus, if a student's score was recorded, for example, as 60-70, he would rank above sixty to seventy-eight per cent of the students taking the test.

In order to get a single score, the scoring tables which had been used to change the raw score to a converted score and then to a percentile band were obtained from the Counseling and Testing Center at Drake University. These tables were then used to find the conversion score represented by the percentile band. The student in the 60-70 percentile band would have a conversion score of 302 or 303. If more than one conversion score fell within one percentile band, the higher score was used. Thus, a single score was derived for this study.

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\(^{2}\)Ibid.
Three scores, verbal, quantitative, and total, were obtained from the Cooperative School and College Ability Test. The verbal score, based on two tests, measured (1) developed ability to understand single sentences, and (2) word knowledge. Mental abilities represented by this score were memory for word meanings and reasoning ability.1 When the means of the four groups were compared on this score, the following results were found:

<table>
<thead>
<tr>
<th>Conversion Score</th>
<th>Percentile Band</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liberal Arts in Education</td>
<td>307</td>
</tr>
<tr>
<td>Liberal Arts</td>
<td>305</td>
</tr>
<tr>
<td>Secondary Education</td>
<td>301</td>
</tr>
<tr>
<td>Elementary Education</td>
<td>295</td>
</tr>
</tbody>
</table>

The mean converted scores of these four groups were also presented in terms of percentile bands to indicate the relative ranking of these groups based on national norms. It was seen that Liberal Arts students in education had the highest mean whereas Elementary Education students had the lowest mean.

The second score of the Cooperative School and College Ability Test, the quantitative score, was based on the student's ability to perform numerical computations rapidly.

1Ibid., p. 151.
and accurately and to solve arithmetic problems. Numerical facility and reasoning ability were the mental abilities represented by this score.\(^1\) When the mean quantitative scores of the four groups were compared, the following results were obtained:

<table>
<thead>
<tr>
<th></th>
<th>Conversion Score</th>
<th>Percentile Band</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liberal Arts in Education</td>
<td>316</td>
<td>68-87</td>
</tr>
<tr>
<td>Liberal Arts</td>
<td>309</td>
<td>55-74</td>
</tr>
<tr>
<td>Secondary Education</td>
<td>309</td>
<td>55-74</td>
</tr>
<tr>
<td>Elementary Education</td>
<td>303</td>
<td>41-63</td>
</tr>
</tbody>
</table>

Again it was seen that the Liberal Arts students in education received the highest mean score and Elementary Education students had the lowest mean score.

The third score considered on this test was the total score, which indicated the "student's general capacity to do the work required of college freshmen and aids in estimating the capacity of the student to undertake the academic work of the next higher level of education."\(^2\)

The following ranking was determined through the comparison of the means of the four groups:

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\(^1\)Ibid.  
\(^2\)Joseph A. Fisher, Counseling and Testing Center release, (Brake University: Office of the Dean of Students), P. I. (unpaginated.)
<table>
<thead>
<tr>
<th>Conversion Score</th>
<th>Percentile Band</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liberal Arts in Education</td>
<td>311</td>
</tr>
<tr>
<td>Liberal Arts</td>
<td>306</td>
</tr>
<tr>
<td>Secondary Education</td>
<td>304</td>
</tr>
<tr>
<td>Elementary Education</td>
<td>298</td>
</tr>
</tbody>
</table>

In summary, on all three scores of the Cooperative School and College Ability Test, the Liberal Arts in Education group had the highest mean score. Also, on all three measures, it was seen that the Elementary Education group had the lowest mean scores. The Liberal Arts group and Secondary education group had equal mean quantitative scores but the Liberal Arts group ranked higher than Secondary Education on the verbal and total scores.

The third measure of academic ability and aptitude on which the four groups were compared was the Graduate Record Examination. The Aptitude Test of this examination, administered in December to all seniors graduating in 1967, was a test of general scholastic ability at the college senior and graduate levels. The test measured both verbal and quantitative abilities, both found to be important for success in graduate study.¹ Test material used to yield

¹Handbook for the Interpretation of GRE Scores 1957-60
verbal and quantitative scores consisted of "verbal reasoning questions, reading comprehension questions drawn from, and bordering on, several fields, and various kinds of quantitative-mathematical materials such as questions on mathematical reasoning, algebraic problems, and the interpretations of graphs, diagrams and descriptive data."¹

Two sets of norms were developed by the National Testing Service for interpretation of the scaled scores. One set of data was based on the performance of graduate students and graduate school applicants who took the tests from May, 1964, through April, 1967. The second set of data was based on the performance of basic reference groups of college seniors from selected institutions.² For this study, the second set of data was considered more appropriate for interpreting scores as all Drake seniors, not just graduate school aspirants, took the test.

When the four groups were compared on verbal ability as judged by this test, the mean scaled scores and percentile rankings were as follows:

<table>
<thead>
<tr>
<th></th>
<th>Scaled</th>
<th>Percentile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liberal Arts</td>
<td>514</td>
<td>61</td>
</tr>
</tbody>
</table>

¹bid. ²bid.
Liberal Arts in Education 484 49
Secondary Education 434 30
Elementary Education 390 14

This was the only comparison in which the Liberal Arts group received the highest mean score. The second highest group was Liberal Arts in Education, which had a mean score thirty points lower. The mean of the Secondary Education group was fifty points below the second group and the lowest group, Elementary Education, was forty-four points below Secondary Education. It was of interest to note that the mean difference between the highest and lowest group was 124 points. This was the widest range on any comparison.

A comparison based on the quantitative score produced the following results:

<table>
<thead>
<tr>
<th></th>
<th>Scaled Score</th>
<th>Percentile Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liberal Arts in Education</td>
<td>492</td>
<td>57</td>
</tr>
<tr>
<td>Liberal Arts</td>
<td>468</td>
<td>45</td>
</tr>
<tr>
<td>Secondary Education</td>
<td>468</td>
<td>45</td>
</tr>
<tr>
<td>Elementary Education</td>
<td>420</td>
<td>26</td>
</tr>
</tbody>
</table>

In this comparison, Liberal Arts in Education again received the highest mean score and Elementary Education received the lowest mean score. Liberal Arts and Secondary Education received equal mean scores. When the rankings on the verbal
score of the Cooperative School and College Ability Test, taken as college freshmen, and on the verbal score of the Graduate Record Ability Test, taken as college seniors, were compared, the same order was maintained. In each case, the Liberal Arts in Education group was the highest, the Liberal Arts and Secondary Education groups had equal mean scores, and the Elementary Education group was the lowest.

When the quantitative rankings on the two tests were compared, it was found that Liberal Arts in Education was highest on the Cooperative School and College Ability Test and the Liberal Arts group ranked second. On the Graduate Record Examination, these positions were reversed and the Liberal Arts group was highest. However, on both tests, the Secondary Education group ranked third and the Elementary Education group was the lowest. There was, then, a relationship in the ranking of the four groups on the scores of these two tests as the general relative ranking of groups was maintained from the beginning to the end of college training.

This relationship was not found when the high school class rank was compared with the rankings on either the Cooperative School and College Ability Test or the Graduate Record test. Whereas, in all other comparisons, but one, the Liberal Arts group ranked second, in high school class rank, it was the lowest.
CHAPTER IV

SUMMARY AND CONCLUSIONS

Examination and evaluation of selection and retention policies must be continual if colleges and universities are to attract and retain those students most capable of becoming competent teachers. To provide a perspective of the type of students entering the field of education at Drake University, this study made a comparison of selected education and non-education students on the basis of high school class rank, Cooperative School and College Ability Test scores, and Graduate Record scores. Comparisons were made to determine how education students ranked with non-education students on Graduate Record scores and to determine whether there was a relationship between these scores and ratings of academic ability at the beginning of college training.

A review of related studies and literature was made. A list of the names of students scheduled to graduate from the College of Education and Liberal Arts at Drake University in June, 1967, was obtained. The names were then divided into four groups, which were (1) Elementary Education majors, (2) Secondary Education majors, (3) Liberal Arts majors who were taking education courses for certification, and
(4) Liberal Arts majors not in education.

College files were used to obtain high school class rank, Cooperative School and College Ability Test scores, and Graduate Record Examination scores for these students. A random sample of twenty for each group was chosen. After the sample was selected, the mean scores for each group were computed for the high school class rank; verbal, quantitative, and total scores of the Cooperative School and College Ability Test; and the verbal and quantitative scores of the Graduate Record Examination. The means of the four groups were then compared and ranked on each of these measures of academic ability and aptitude.

When the ranking of the four groups on the scores of the Cooperative School and College Ability Test, taken as college freshmen, was compared with the ranking of scores of the Graduate Record Examination, taken as college seniors, it was found that the same general ranking was maintained. Liberal Arts in Education, with one exception, ranked highest; Liberal Arts, with one exception, ranked second; Secondary Education generally ranked third; and Elementary Education ranked last, indicating a relationship between these two measures of academic aptitude and ability.

This relationship was not found when the high school rank was compared with the rankings on either the Cooperative
School and College Ability Test or the Graduate Record Examination. The Liberal Arts group, which was higher than both the Secondary and Elementary Education groups in the test comparisons, had the lowest mean high school class rank. The other three groups, however, remained in the same relative positions.

Based on the test scores as measures of academic ability and aptitude, the findings indicated that the College of Education was attracting less capable students than the College of Liberal Arts. However, the highest ranking group was composed of Liberal Arts students who were taking Education courses for certification. This would indicate that the more capable Liberal Arts students were earning teaching certificates perhaps to increase their vocational opportunities.
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