

A STUDY OF THE RELATIONSHIP BETWEEN GRADUATE
AND UNDERGRADUATE SCHOLARSHIP AT THE
INDIANA STATE TEACHERS COLLEGE

by

William G. Brown

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I. INTRODUCTION

A. Purpose of This Study

The purpose of this thesis is to undertake a comparative study of the grades made in graduate work with those made in college work by students who have fulfilled all requirements for their masters' degrees. This major purpose has been divided into five smaller ones to make the presentation of the material less difficult. They are:

1. To analyze the difference between college and graduate school scholarship.
2. To measure the effect that some outside factors have on work done in the graduate school.
3. To determine if any college subject is the key subject by which graduate school grades may be calculated.
4. To discover if the grade in any subject in the college curriculum predicts the success or failure of a student in writing a thesis.
5. To study the relation between teaching experience and graduate scholarship.

B. Sources of Data

In 1927 a graduate department was formed at Indiana

State Teachers College. Between its founding and November, 1933, one hundred and fifty-eight persons completed all of the requirements for their masters' degrees. It is to be noted that many more had finished their classwork, but had not completed their theses; others had finished their theses, but had not done all of their classwork; and still others had met both of these requirements, but had not taken their graduate examinations. Those whose records were incomplete were not fit subjects for this study.

All of the material for this thesis was taken from the records on file in the Graduate Office of the Department of Education with the exception of 79 which, because parts of them were missing, were taken from the permanent records in the Office of the Registrar.

C. Procedure Followed in This Study

The data from the permanent record were copied on mimeographed data sheets. These were numbered for the eighteen points needed in this study and spaced for an outline of a single record each. The grades were then made into index numbers by weighting the letters as follows: A-4, B-3, C-2, D-1, and dividing the sum of them by the number of quarter-hours they represented.

The results of the above process were organized into 77 points under the heading, "Analysis of Thesis

Material". This (Appendix A) covers the entire range of the study. Each point was meant to indicate an individual fact in the study. The writer has since found that when several of these points are compared they may support or refute one another.

D. The Place of This Study in the Field of Education

Along the road of progress in the attaining of knowledge in the field of education are found many obstacles. In the process of writing a thesis a student does not attempt to remove all of these in a single effort, but rather makes it his goal to take away one or two. It is therefore apparent that any contribution, regardless of how small it may be, makes the path of those who follow more certain.

One may be inclined to ask what obstacle the present writer expects to remove. The answer is this: His task does not lie with these obstacles. Rather, his job is to open a new path. This fact was not known to the writer until he had collected his data and made an attempt to prepare a bibliography of work that had already been done. After combing all available sources with the aid of Indiana State Teachers College librarians, he was forced to the conclusion that none existed.

This naturally precludes any inference that this study is a final and complete document, that it can in any way be considered to have begun to exhaust the possibilities of the field being investigated, or that what is presented here may not be likely to deviate from perfect accuracy.

The writer has used everything at his command to insure the accuracy, the completeness, and the clearness of this work. It is his sincere desire that it will be probed for errors, be torn apart for imperfections, be tried from all angles, and most of all, that others will make the path he has started into a broad smooth highway.

E. The Organization of This Study

In the preparation of this study the first thing to engage the attention of the writer was the relation that exists between work done in college and that done in the graduate school. The interest then spread to other important questions that arose in regard to these institutions. Realizing that there is a natural order, the writer has attempted to arrange the various phases of this work so that they answer the questions that may arise.

F. Limitations of This Study

This study includes all of the records that were available in November, 1933. The writer believes the

tabulation to be accurate within 2.0 points. No study was made of the individual courses in a subject. The interpretations are believed to be in accord with current opinion. However, due to the lack of the steady-influence of previous studies, this work may be more likely to deviate from perfect accuracy than it should.

II. PRESENTATION, ANALYSIS, AND SUMMARY OF DATA

A. The Relation Between College and Graduate School Scholarship

PURPOSE: To analyze the difference between college and graduate school scholarship.

It has been the consensus of opinion for many years that students do better work in graduate school than they do in college, but up to this time no definite facts have been given on the subject. Many questions accompany this opinion. The chief ones are: Is it true that students do accomplish better work in the graduate school than they do in college? If it is true, to what is the difference due? Is this difference an indication of inconsistency in the practices of the school? Can this difference, if such exists, be turned to advantage in making better teachers and administrators?

The writer has analyzed the available material and is able to answer these questions with a reasonable degree of accuracy. Analysis of the scholarship as indicated by average scholarship indices proves that the consensus of opinion was right. The analysis in TABLE I shows a difference between the average graduate school scholarship index and the average college scholarship index of 18 between the means, -20 between the medians,

45 between the modes, and 16 quartile between the deviations. Furthermore, the range in the graduate school is only 33 while that in the college is 61. The mean scholarship index of all work done in the graduate school shows a substantial increase over that done in college. That this increase is not confined to a few students is indicated by the greater rise of the median, which is the grade made by that person whose record was surpassed by exactly as many persons' records as his surpassed.

Realizing it might have been possible that these changes were isolated in the subjects where the interest might be the greatest, the writer has tested and found otherwise by comparing with a standard in the form of the scholarship indices from a course that is found in both the college and in the graduate school. Education was used, and the results so parallel with the results found by analyzing the complete records that no further discussion of them is justified.

The difference may be due to a large number of things. We must realize that the typical person who attended graduate school prior to 1932 did so only after a few years of experience in the field of teaching, and

then he probably did most of his work during the summer sessions. Let us picture a young man who graduates from college. He has never known responsibility, and he has never taxed himself to his capacity in school, where the loose discipline has been generous in demanding nothing of him that he could not or would not give willingly. This young man goes into the field to teach. He finds himself suddenly called upon to be dignified, to discipline others, to give freely of his time and effort, to meet the problems of life, and above all, to use what he has been or should have been learning. Is it any wonder that a changed young man comes back to school the following summer? He knows the value of time, what to get from school, and that high grades are financial assets.

Maturation also plays its part in changing scholastic habits of students. Although the present writer has not made a study of the idea, it seems to be true that the average student gets his graduate degree at about thirty years of age, which allows for a great deal to happen to him between the late adolescence of college graduation and the full maturity of thirty.

Finally, the difference can be attributed to the realization on the part of instructors that they are dealing with a set of mature-minded people. The ease with which we learn and the amount we learn from being

exposed to any series of experience is in large part determined by what we already know and to what we have previously been exposed. Hence, when an instructor gives a lecture to a class he has every reason to expect his graduate students to get more from it than his college students do. This is not necessarily an indication of inconsistency on the part of the school.

This change is advantageous for making better teachers and administrators. In addition to what a person may know or may have experienced, in order to succeed he must have confidence. The writer does not mean conceit or cocksureness, but rather the knowledge that one can do things, that one need not be daunted by any obstacle, no matter how large, and finally the faith in oneself which is at once the gentle urge and the merciless lash of the energetic person.

Many of the things that affect us most in the field of education are of that abstract and unmeasurable nature to which we cannot apply statistics. We know that they exist, but we cannot describe them. They are characteristics of all good teachers, yet we cannot impart them one to another. These are the factors that play a large part in this study and it is to be feared that the field of education will have to be developed much farther than it is at present to place them at our command.

TABLE I

COMPARISON OF THE AVERAGE SCHOLARSHIP
INDICES MADE IN THE GRADUATE SCHOOL WITH
THOSE MADE IN COLLEGE

	Mean	Median	Mode	Probable error	Average deviation	Range	Quartile deviation	Number of cases
Average graduate scholarship index made by all students.....	87	90	95	3	6	33	88	158
Average college scholarship index made by all students.....	70	70	50	1	10	31	71	158
Average grade made in Education in the graduate school.....	86	87	93	3	7	43	86	158
Average grade made in Education in college...	73	71	50	1	12	68	71	153

B. The Effect of Some Outside Factors on
Graduate School Scholarship

PURPOSE: To measure some of the effects that certain outside factors have on work done in the graduate school.

In the course of passing through life each of us plays many and varied parts. These are all influenced by circumstances that come to bear on us from time to time. Some of them are so short and transitory that we can never hope to capture them for observation, but there are some external influences which we either bring on ourselves deliberately or they are of such fundamental character as to be readily available as a basis on which we can build lines of classification. Some of these are the institution of marriage, the difference in the sexes, and certain periods of practical experience secured by the individual by dint of some expense of time and effort.

In the makeup of a student these are especially important. Some of them act for his best interest, others do the opposite, while still others have no outcome either way. It is the object of the present study to determine just what effect some of these factors have on the students whose records were made available for this study.

The present writer has touched somewhat on the relation of scholarship in certain subjects to success in the graduate school. However, the results he found were not in any sense conclusive, due to the small number of cases involved. In five years an entire thesis can be written on this subject.

It is sometimes said that a major in a given subject in college can secure a better grade for less effort in that subject than a major in another subject can. This will make an excellent study which can be planned to cover the entire range of graduates from Indiana State Teachers College.

In Part D of Chapter II an attempt is made to analyze the factors that determine success or lack of it in writing theses. Of course, this study cannot be made until there has accumulated more material than there is at present. At that time it will make an excellent thesis.

It is the writer's sincere hope that these studies will all be made in time, and that they shall prove a source of value to the profession and to the individuals who seek to carry them out.

1. A Study of Grades Made in Indiana State Teachers College by Students From Indiana State Teachers College Compared With Those From Other Colleges. Perhaps the best illustration of this idea is the change of students from one college to another.

Do students who go to Indiana State Teachers College Graduate School from colleges other than Indiana State Teachers College make better grades than those from Indiana State do?

The answer is clearly positive. According to the records, students from other colleges have scholarship indices of from 2 to 12 points higher in the different measures. (TABLE II) Graduates from Indiana State Teachers College make records that average mean 72, median 79, mode 95, quartile deviation 70, and a range of 70. Those from other colleges made records of mean 86, median 93, mode 96, quartile deviation 88, and with a range of only 25. The question of why this is true hinges on something rather abstract, but understandable nevertheless.

The theory is that many times students in college do not do their best because of the small effort they are called upon to expend in securing the means of staying there, but when these students have a year or two of experience they have different ideas. The fact that they

journey some distance to secure this training adds to their sincerity. Facing new instructors, amongst new friends, and living in a strange atmosphere, cause these students to make every effort to put forward their best. A good follow-up study would be to secure the records of students from Indiana State Teachers College who have attended other schools and analyze them with the purpose of determining whether their work in the next school was proportionately better or not.

Theoretically, another and equally important factor that enters is that tendency of institutions to regulate the amount and quality of work which they accept from other institutions. This has an effect that is thought to be due in large part to the practice of students changing from one college to another to take advantage of the prestige of a degree from one institution along with the low expenses of the other, where they do their first work. The result is that the privilege of changing is limited to those with records above a certain level. There may be one qualification necessary for this statement. It is the opinion of some that many people spend their summers attending various large schools, not with the idea of getting degrees, but largely for the pleasure, experience, and contacts which they are enabled to make. Although it is true that these

students invariably excel in their work, occasionally one will be found who makes poor grades. Since they seldom get ranking above the bachelor's degree, few of these have been included in this thesis.

TABLE II

A COMPARISON OF GRADES MADE BY STUDENTS
 FROM OTHER COLLEGES WITH THOSE MADE BY
 STUDENTS FROM INDIANA STATE
 TEACHERS COLLEGE

	Mean	Median	Mode	Probable error	Average deviation	Range	Quartile deviation	Number of cases
Average scholarship index of students from Indiana State Teachers College.....	72	79	95	2	6	61	70	129
Average scholarship index of students from other colleges.....	86	93	96	2	4	25	88	29

2. A Study of the Women's Grades Compared With Those of the Men. In this day of woman suffrage, the single standard, and many other movements which tend to show that modern woman has come into her own, questions are often asked regarding how she is faring in comparison with man. The present writer has found that women, as a group, have outdistanced men by a small margin in the competition of college records.

According to studies made by Thompson¹, women are better at rote memory than men are, and since a large portion of college work is memorization, they are enabled to make better records than men. Some of this is also thought to be the result of the art and cunning which women have developed through the ages. Finally, in the majority of cases they are given care and training that is almost universally neglected in the training of men. In view of these facts it is not any wonder that the young woman is able to outstrip her brother in classes. Women are, in the course of their training, protected from distracting stimulation, and in almost every case, the necessity to earn any part of their college expenses.

¹Helen B. Thompson (Woolley), "Psychology Norms in Men and Women", The University of Chicago Contributions to Philosophy, Vol. IV (1903), No. 1.

The range of the scholarship index numbers of the men is wider by 12 points than that of the women. Furthermore, there are the records of 101 men and of only 57 women. This seems to indicate that, in the graduate school at least, a few more cases might tell a different story. The only possible solution is to repeat the study when there are more cases available.

Another interesting fact is that among the women are six Catholic Sisters. These women devote themselves to lives of piety and meditation. None of the worldly distractions detracts their attention from their class-work. As a result, practically all of them have straight A records. To compare their records with those of other women would be unfair, but to compare them with those of the men would be worse. Since the group is too small to warrant an individual study at present, the writer has included their records with those of the women.

The findings of this portion of the study may be summarized as follows:

1. Women have higher scholarship indices than men.
2. The scholarship indices of the men are spread over a wider range than those of the women.
3. Catholic Sisters make higher grades than any other group included in this study.

TABLE III

A COMPARISON OF GRADES MADE BY
MEN WITH THOSE MADE BY WOMEN

	Mean	Median	Mode	Probable error	Average deviation	Range	Quartile deviation	Number of cases
Average scholarship index made by men.....	84	85	50	1	9	61	85	101
Average scholarship index made by women.....	89	90	75	13	3	53	88	57

3. A Study of the Grades Made in College Education Compared With Those Made in Graduate Education. In Indiana State Teachers College every student takes courses in education both in the college and in the graduate school. Hence, education is the only subject taken by everyone. The rule holds here, as in most other cases, that graduate school work is of a much higher grade than college work. It shows increases between the means of 14, between the medians of 16, between the modes of 43, and between the quartile deviations of 15. The range in the graduate school is only 43, compared with 68 in the college. It is to be noted that this range, as given, may be interpreted to represent the number of points which it covers from 100 down, because in both groups there are index numbers up to 100.

It is the writer's theory that courses in education in college lay before the embryo teacher certain formulae, results of research, and philosophical principles that are designed to give him the foundation he may need in the field of teaching. Those in the graduate school give him these things, but more advanced in type plus instruction in administrative procedure and practices. When a student first enters college, he is seldom even slightly acquainted with what he is facing in the subject of education. After several years in the field of teaching, he takes the advanced courses with a solid background

of facts. He is capable of grasping the ideas that are put forward by his instructors, of weighing them against his own experiences, and of rejecting them entirely if he finds them wanting or incompatible with what he knows to be true.

This may be interpreted to mean that the quality of grades in this field is determined by the amount of background which the individual is able to put into it. Consequently, in order to prepare better teachers and better administrators the practice should be to teach education along with the subject matter of each course, instead of in special education and methods courses.

The conclusions of this portion of the study may be summarized as follows:

1. Students make better grades in graduate school education than they do in college education.
2. This may be due primarily to the amassing of experience in the subject and to the methods of learning it.
3. It may be interpreted as a strong argument for teaching education in connection with other work rather than in separate courses.

TABLE IV

A COMPARISON OF GRADES MADE IN
COLLEGE EDUCATION WITH THOSE
MADE IN GRADUATE EDUCATION

	Mean	Median	Mode	Probable error	Average deviation	Range	Quartile deviation	Number of cases
Average index number of grades made in college Education.....	73	71	50	1	12	68	71	153
Average index number of grades made in graduate school Education.....	86	87	93	2	7	43	86	158

4. The Relation of Grades in Individual College Subjects to Grades in the Graduate School. Perhaps the greatest single indication of success from year to year is the progress made in one subject as compared with that made in another subject. To be sound, this study must of necessity include a large number of cases in each subject. Since there are so few, too few to give statistical weight to the results, the present writer has made all grades of the subjects taken by a majority into index numbers.

It is noted that science more clearly approaches the Graduate Scholarship Index than does either English or social studies, the other subjects taken by a majority of students. The writer believes that this is explained by the fact that most students know science is difficult and expect to work, while those who take only a small amount, to meet the requirements for graduation, have a wholesome respect for it and try to gain all they can from the few hours they take.

The writer believes that social studies is one of the best liked subjects in the entire college curriculum, and that there is a faulty idea held by students about it being ridiculously easy. It does not seem to have the glamour of science, nor the commercial possibilities of some other subjects, nor are dazzling new principles

of teaching applied to it. Naturally, students facing the subject with these views cannot be expected to put their best into what they do. They are handicapped before starting.

It is believed that English bears the heaviest brunt of unpopularity amongst the students. Somewhere early in the school career of the child there seems to be a period when he is especially susceptible to influence concerning his like or dislike of English. Some reach maturity with a love for good literature and a tolerance of grammar, while others, equally brilliant and in many cases, of superior training, simply do not like good literature, and are repelled by everything even remotely suggesting the principles of English. This seems to explain why the majority of English majors make better grades than any other subject-group, while all English as a whole stands lower than any other subject-group. In other words, those who like the work strive to get all they can from it, while those who do not like it try to do the least they can and still meet requirements. It is regrettable that this condition exists but it indicates that there is a need for more intensive study on the part of teachers in the lower grades. Also, an extensive campaign should be carried on by

English teachers and others to change the reputation of the subject from dry, monotonous, and pointless experiences to lively, varied, and interesting activities.

TABLE V

A COMPARISON BETWEEN GRADES MADE
 IN INDIVIDUAL COLLEGE SUB-
 JECTS AND GRADUATE SCHOOL
 SCHOLARSHIP

6

	Mean	Median	Mode	Probable error	Average deviation	Range	Quartile deviation	Number of cases
Average graduate school scholarship index.....	87	90	95	2	6	33	71	158
Average index number of grades in college English.	66	65	50	.5	17.4	70	65	155
Average index number of grades in college social studies.....	69	70	50	2	1.3	75	67	153
Average index number of grades in college science.	81	71	50	11	15.4	75	70	154

5. The Effect of Practice Teaching on Grades in The Graduate School. Many years ago there was no such thing as supervised teaching. Students acquired knowledge in college and were expected to know instinctively how to teach it. Later, the study of teaching revealed the fact that most of the important things in teaching are abstractions that cannot be imparted, but that must be innate and developed through actual experience in the classroom. Naturally an attempt was made to give this experience by observation and under guidance. The outgrowth of these attempts is our modern system of supervised teaching in which, under the supervision of competent critics, a student is given six months' experience that is estimated by some authorities to be equivalent to three and one-half years of teaching unsupervised.

Among those who have completed courses in the Indiana State Graduate School are many who have had practice teaching and many more who have not. A question arises as to whether those who have had practice teaching are more successful in the graduate school than those who have not. Analysis of available data indicates that no decision can be reached. However, it is the task of future students to determine this more accurately.

At present it is a requirement for graduation that one have at least two terms of practice teaching, but it

was not always that way. Practically all of those who have not had practice teaching are persons who were graduated from college ten or more years ago. Two-thirds of those who have secured their graduate degrees have come from this group. Certain difficulties always attend the study of college records that date back more than a very few years. This is due to the fact that college administration is in a process of constant change and unless a very accurate record is kept of the changes in systems of grading, it is very difficult to translate the grades of one period into the terms of another. Since, as the writer has pointed out before, success in the graduate school is greatly increased by experience, it follows that these older graduates from college should present better graduate records than the younger ones. This is true by a slight margin of three between the means, but in consideration of the larger number in the group it might have been much more. Thus it can be inferred that supervised teaching is a very valuable asset to the student who is intent on entering the field of teaching, that those who are without its advantages fail to get the most out of their early years of experience in the field of education, and finally that all data at present available tend to favor supervised teaching as an invaluable aid to the educator of tomorrow.

TABLE VI

A COMPARISON BETWEEN THE GRADES IN PRACTICE
TEACHING AND THE GRADUATE SCHOOL SCHOL-
ARSHIP INDEX

	Mean	Median	Mode	Probable error	Average deviation	Range	Quartile deviation	Number of cases
Average graduate school scholarship index.....	87	90	95	2	6	33	71	158
Average index number of grades made in practice teaching.....	84	87	75	11	12	50	73	56

6. The Effect of High School Experience on Grades in the Graduate School. This study and the following one are inserted in the interest of the student, who, on graduation, seeks to obtain a position in locations most favorable to his future success as regards the studies he pursues in the graduate school.

It is a custom among laymen to look with a little more respect on a high school teacher than on a grade school teacher. This is due to the fact that a college education has for some years been required of high school teachers. Grade school teachers until recently were required to have only two years of college work. Also, the activities carried on in high school are of a more mature nature and it is commonly believed that because the children are larger they are more difficult to teach. Of course, those are only superficial measures and do not stand the tests of the scientific method, but an analysis of available data does indicate that those who have high school experience to their credit do manage to make better graduate school records than those who do not.

It must be noted that in making this study, no analysis was made of the small group who have had both grade and high school experience.

When the American system of education was being developed, there was a great lack of competent teachers -

a condition that persisted until the present decade. Consequently, the requirements for entering the profession have, until recently, remained lower than those of other professions. Since hiring officials have, in most cases, been untrained laymen, it has followed that those who impressed them most favorably were given the more coveted positions in the schools. In some cases grade school teachers attained the dignity of high school teachers by promotion, but these are so few in number that they were omitted from this study.

According to the writer's analysis, those records showing high school experience averaged mean 90, median 93, mode 75, range 51, and quartile deviation 89. Those without high school experience averaged mean 84, median 87, mode 50, range 61, and quartile deviation 83. This clearly indicates that the first group is comprised of a superior grade of students as far as their capacity for doing graduate work is concerned. Yet, this throws absolutely no light on the question of whether high school experience is better for an administrative career than grade school experience.

In regard to the present question, it is possible that the real difference lies in those qualities that impressed lay officials in the early teaching days of the student. Since work along this line is being very efficiently carried on by modern research workers, it

loses its significance in the present study.

However, the writer does want to point out that a few facts tend to favor teaching in the high school as a proper training for graduate work in preparing for certain fields of administration. The person who intends to do administrative work in junior or senior high school should have experience in teaching in those institutions, else how can he expect to understand the problems that come up in the course of his work? Along the same line, the person who intends to do administrative work in grade schools should have at least some experience teaching in the grades. It seems to follow that the person who is intending to perform higher administrative duties should be experienced in all departments of the public schools. These things are true because, in modern education, where the child-centered idea is practiced theoretically, problems are constantly brought before administrators that demand a keen insight into the problems which the teachers must face. At present, requirements for administrators include certain superficial conditions that are intended to approach the real needs. It is to be hoped that the future will bring the application of scientific measures to the problems and the evolution of a plan whereby the minimum of experience required for a position can be as fairly placed and demanded for a given position as the amount of training is now.

TABLE VII

A COMPARISON OF THE GRADUATE SCHOLARSHIP INDICES
 OF THOSE WHO HAVE HAD HIGH SCHOOL TEACHING EX-
 PERIENCE WITH THOSE WHO HAVE NOT

	Mean	Median	Mode	Probable error	Average deviation	Range	Quartile deviation	Number of cases
Average graduate school scholarship index.....	87	90	95	2	6	33	71	158
Average index number of grades made by students with high school experience.....	90	93	75	1	11	51	89	29

✓ 7. The Effect of Rural School Experience on Grades in the Graduate School. Many young teachers hesitate between the open air and healthy enthusiasm of the country and the comfortable smugness of the city in seeking their fields of work. Health, beauty, and a rustic life close to nature are to be found in the country, but comfort, society, and aesthetic joys abound in the city. These things are not as characteristic of those places, whether one or the other, as they once were, due to the automobile, the rapid strides of science, and the breaking down of the barrier between the city and the country. Nevertheless, they still maintain individual atmosphere, each of its own, that tends to affect all in range of its influence. Whether or not this influence affects the future career of teachers as students is one of very vital importance. An analysis of the records of graduates of Indiana State Teachers College indicates that those who have taught in rural school make better records than those who have not. Those who have rural experience average means of 81, medians of 91, modes of 95, and quartile deviations of 92, while those who have not, average means of 70, medians of 73, modes of 75, and quartile deviations of 73.

In this country it is claimed that where a simple life can be pursued which pays great dividends in health,

nature plays an important part in all everyday activity. Under such conditions sleep is a habit, and good students are made into better students. They come to realize by actual contact that there is something in life not created by the hand of man. On the other hand, ✓ a semi-rustic life lays a heavy hand on the smooth polished veneer of the college man. He is likely to forget the clever phrases that he once bantered so freely with his chums, to lose the carefully developed meticulousness of dress and manners, and most of all, he may tend ✓ to grow inward for lack of a proper means of expression for certain tendencies that his college training has developed in him.

Should the writer be questioned concerning whether rural experience is desirable for administrators or not, he would be forced to answer that teachers, good or bad, must have certain innate qualities, which are brought out by the condition under which they work in varying degrees, depending upon the individual.

TABLE VIII

A COMPARISON OF THE GRADUATE SCHOOL SCHOLARSHIP INDICES MADE BY STUDENTS WHO HAVE RURAL SCHOOL TEACHING EXPERIENCE WITH THOSE WHO HAVE NOT

	Mean	Median	Mode	Probable error	Average deviation	Range	Quartile deviation	Number of cases
Average graduate school scholarship index.....	87	90	95	2	6	33	71	158
Average index number of grades made by students with rural school teaching experience.....	88	91	95	4	8	46	92	57

8. The Effect of Administrative Experience on Grades in the Graduate School. Prior to 1922 there were no administrative licenses in Indiana. Since licenses have been required, the amount of training necessary to secure them has been raised several times. Consequently, a measurable percentage of the records included in this study show some administrative experience. These records average slightly higher than those of the remainder of the students, probably due to three things more than any others; they are already experienced in the work; they are more mature, averaging well above thirty years; and they are a hand-picked group who have been made administrators because they were superior teachers and because they have traits that promise to make them successful administrators. An analysis of their records show that they average means of 89, medians of 92, modes of 75, range of 48, and quartile deviations of 87.

The question as to whether a student does better classwork in the graduate school if he has experience in administration than if he has not, must accordingly be settled affirmatively, but as to whether or not the same student makes a better administrator later on must remain in question. There are good arguments on both sides.

A student who is made into an administrator without training in administration must learn many things by the

trial and error method. He observes things in parts and not as wholes; he does not recognize the work that others have done in his field; and he is not acquainted with the tools of his task. On the other hand he develops a splendid self-reliant spirit; he learns patience; and best of all he retains what he learns.

A student who studies administration prior to entering the field should make the better administrator. The knowledge is imparted to him with an economy of time and a minimum loss of effort on his part. While every problem he may expect to meet cannot possibly be covered in his courses, yet he is made master of a sufficiently large bibliography to find material on any problem that challenges him.

TABLE IX

A COMPARISON OF THE GRADUATE SCHOLARSHIP INDICES MADE BY STUDENTS WHO HAVE EXPERIENCE IN SCHOOL ADMINISTRATION WITH THOSE WHO HAVE NOT

	Mean	Median	Mode	Probable error	Average deviation	Range	Quartile deviation	Number of cases
Average graduate school scholarship index.....	87 3	90	95	2	6	33	71	158
Average index number of grades made by students with experience in administration.....	89	92	75	2	6	48	87	60

C. The Relation Between Individual Subjects in
College and Graduate School Scholarship

PURPOSE: To determine if any college subject is the key subject by which graduate school grades may be calculated.

In view of the fact that there are certain consistencies and inconsistencies between graduate school and college records, it seems to follow that there may be one or more subjects, from the analysis of which, the possibilities of success in the graduate school may be predicted.

Actually the writer made no discovery of any significance along this line. He wishes to point out that in using the records of those who have been successful in obtaining their degrees only one-half of the story is told. A more complete study made from all available graduate records might give different outcomes.

In order to notice some of the differences and similarities, the writer has recorded a few of the more apparent cases in TABLE XII. Some work in all the subjects given is required of each college graduate. However, in the material from which this study was taken, not all of them were found in each individual record. The means vary from 66 to 84, the medians from 65 to 87, the quartile deviation only from 65 to 73. These indicate

that different results may be attained by separating majors in given subjects from others.

College English grades do not show any appreciable tendency toward indication of the possibilities of graduate school success or failure. Since English is taken in all grades from the kindergarten through college, it seems that one's status as a student would be indicated by one's grades in that subject. However, there are no measures for likes and dislikes, for individual differences, nor for the personality idiosyncracies brought on by contact with various instructors. Therefore, these important influences must be omitted from this study, but the difficulties brought on by them remain as insurmountable barriers to more certain and accurate work along this line. What is said of English is also true of social studies and science. In themselves they do not indicate anything, but when a way is discovered to measure abstract factors and to record them, it is certain that by correcting for these influences some one or more of these subjects will be found to indicate what chances for success, or lack of it, exist for each student in the graduate school.

Practice teaching is the only subject from which any definite assumptions can be made at present. More people averaged 75 in practice teaching than in any other grade. The lowest grade in practice teaching was 50,

while there was a range of 50. The quartile deviation was 73 as compared with the mode of 75 which indicates that the grades were well distributed. Finally, the mean of 84 and the median of 87 indicated that the grades were massed at the higher end of the range.

Practice teaching is not usually taken until the fourth year of college work. For this reason it is supposed to be the finest expression of personality, character, and scholarship. Students realize that it is the testing ground for future teachers and their interest is high because they know how important these two terms are. The grade made may, because of these things, be used as a measure of the mastery of the student of his college work and the tendencies he has developed as a student. These are almost ideal circumstances under which to seek a key to the student's further work. The development of this idea must be left by the present writer to be worked out by experts, but a few of the possibilities are worthy of note. Some of these will be found in the last chapter of this study.

TABLE X

A COMPARISON OF THE GRADES MADE IN INDIVIDUAL COLLEGE SUBJECTS WITH THOSE MADE IN THE GRADUATE SCHOOL

	Mean	Median	Mode	Probable error	Average deviation	Range	Quartile deviation	Number of cases
Average graduate school scholarship index.....	87	90	95	2	6	33	71	158
Average index number of grades in college English.....	66	65	50	.5	17	70	65	155
Average index number of grades in college Social Studies.....	69	70	50	2	1.3	75	67	153
Average index number of grades in college Science.....	81.	71	50	11	15	75	70	154
Average index number of grades in Practice Teaching....	84	87	75	11	12	50	73	56

D. The Relation Between Grades in Individual Subjects and Grades Made on Theses

This study was started with the purpose in mind of finding what subject, if any exists, tends to predict the success which a person may attain in writing his thesis. No subject shows any tendency toward such a quality.

The writer may be criticized for reducing thesis grades to index numbers, but in order to compare them with other grades they had to be reduced to common terms, even though they do represent only eight hours of college credit each.

Thesis grades are very high. Slightly more than half (80) are A's and there are only a few C's (6). Apparently, more emphasis is placed on quality in theses, both by writers and instructors, than is placed on quality in any other course. And, too, a thesis is a private project worked out by the student under the direction of his committee. Consequently, not only a student's scholarship is measured, but also his initiative, his persistence, and his confidence are put to test. Students vary in these characteristics as much as they vary in scholastic ability, but there is no correlation between the two.

If a student, in writing a thesis, used only his scholastic training, it might be assumed correctly that some subject in his college work would indicate the probability that he might write an A, a B, or a C thesis. That

this is wrong, is indicated by the fact that in the records of the graduate school will occasionally be found a student with a record of almost all A's who has written a B or even a C thesis, and even more often by the fact that students with poor records frequently write excellent theses.

Some day we may be able to measure these abstract qualities, but until that time comes, this question, along with many others, must remain unanswered.

In order that the writer's point might be well understood, TABLE XI is placed at the end of this study. TABLE XI includes four of the college subjects which, due to the nature of the work and their relation to theses as a matter of interest, might be expected to predict somewhat the likelihood of a student's thesis being good, bad, or indifferent. For example, since English is taken in every department of school it would seem to the writer that persons with good grades in college English would also make high grades in their theses. Furthermore, if a thesis is a product of interest and initiative, it seems to follow that grades made in an individual's college major, where interest and initiative are supposed to play an important part, might be indicative of the degree of success the individual is justified in expecting to attain on his thesis. Unfortunately, these things are not true. Any person preparing to write a thesis is an unknown quantity from which anything can be reasonably expected.

TABLE XI

A COMPARISON OF GRADES MADE IN
SOME COLLEGE SUBJECTS WITH
THOSE MADE ON THESES

	Mean	Median	Mode	Probable error	Average deviation	Range	Quartile deviation	Number of cases
Average index number of thesis grades.....	75	100	100	0	12	50	93	158
Average graduate school scholar- ship index.....	87	90	95	2	6	33	71	158
Average college scholarship index.....	70	70	50	1	10	61	71	158
Average index of grades made in college majors.....	63	74	75	2	14	54	72	158
Average index of grades made in college English.....	66	65	50	5	17	70	65	155

E. The Relation Between Teaching Experience
and Graduate Scholarship

PURPOSE: To determine the relationship between teaching experience and graduate school scholarship.

A question which often rises is that concerning the effect of various kinds of teaching experience on work done in the graduate school. This is best answered by a careful study of the various kinds of experience, as shown by the records of people who have completed their graduate work. Other factors being equal, it may be more or less accurately assumed that if those with one kind of experience make better graduate school records than those with another kind of experience, the nature of the first kind is more favorable to a higher grade of work than that of the second kind.

The most satisfactory standard is the average record of all people who have taken their masters' degrees from Indiana State Teachers College. This includes people with all different kinds of experience. Among them are found people with experience in high school, grade school, primary and kindergarten, college, military school, private academy, private tutoring, and administration. For the most part these groups comprise only a few cases each, except those with experience in rural schools, high

schools, and administration. It is on these that this study is based.

This study indicates that teachers who have had experience in high schools and who attend graduate school do better work than others do who have had different kinds of experience or none.

High school teachers deal with maturer students than others do and they work under conditions more nearly identical with the college classroom. These facts naturally point the way to the development of the high school teacher as a student.

The next group in average scholarship rating in the graduate school is the group which includes persons who have had experience in rural schools. As a rule, most rural schools are poorly equipped and teachers are left pretty much to their own ingenuity in providing equipment necessary for modern teaching, such as the library. This seems to the writer to be of value in the development of teachers. Of course, the final test rests with the individual, for some, who are otherwise good teachers as well as good students, lack the invention that is so essential to the rural teacher.

Fresh air, beauty of nature, and healthy friendship abound in the rural districts. These things are conducive

to all-around good health, both physical and mental. It may be that they are also influences in causing the average rural teacher to make a better graduate school record than the average student without rural experience. This is true even when opposed to the fact that the average student goes to teach in a rural school only because he cannot find an urban position suitable for him.

TABLE XII

A COMPARISON OF TEACHING EXPERIENCE WITH
GRADUATE SCHOOL SCHOLARSHIP

	Mean	Median	Mode	Probable error	Average deviation	Range	Quartile deviation	Number of cases
Average graduate school scholarship index.....	87	90	95	2	6	33	71	158
Average index number of grades made by those with high school experience.....	90	93	75	4	8	51	89	57
Average index number of grades made by those with rural school experience.....	88	91	91	1	11	46	92	29
Average index number of grades made by those with experience in school admin- istration.....	85	88	95	10	6	61	75	60

F. Summary

The purpose of this thesis was to study the records of students who have received their masters' degrees from Indiana State Teachers College.

This study was made by changing the grades in these records to index numbers. Then the means, medians, modes, average deviations, quartile deviations, and ranges were computed for the divisions that were found in the outline (Appendix B).

The findings of this study may be summarized as follows:

1. Scholarship in the graduate school is in all cases of a higher grade than that in college.

2. Graduates from other colleges who attend Indiana State Graduate School make better grades than graduates from Indiana State Teachers College.

3. Women make better grades in the graduate school than men.

4. Women make better grades in college than men.

5. Higher grades are made in graduate school education than are made in college education.

6. There is no relation between grades in English, social studies, science, or supervise teaching in the college and success in the graduate school.

7. There is no relation between grades in English,

social studies, science, or supervised teaching in the college and the quality of the thesis which an individual writes.

8. Persons who have high school experience make better grades than those who do not have it.

9. There is no difference between the average grades made by married and unmarried people.

10. Persons with administrative experience make better grades than those without it.

11. Teachers who have taught in rural schools make better grades than those in any other experience group except those who have had experience in high school teaching.

III. RECOMMENDATIONS AND SUGGESTIONS

This study would have been written in vain if, on completing it, the writer were not able to offer some hints concerning the use of it, some suggestions on how those who follow in this line of research should proceed, and to give a word of interpretation concerning the things his study has brought to light. These are included solely to indicate the trend of the writer's thoughts in making this study.

A. How to Use This Study

This study may be used in several ways. The biggest one, as a guide for further research, is treated separately in Part B of this chapter. It may also be used by college administrators as a guide in determining some of their policies, and by teachers in practice in understanding the general trend of grades made by individuals in teaching groups other than theirs.

1. Use by College Administrators.

In writing this study the writer has attempted to make every part bring out something of value, either that was not known or that had not been proved objectively.

In the college there are several classes which are attended by both graduate and undergraduate students. Graduate students do better work than undergraduate

students do and they should, but a double standard should be understood to exist in these classes in order to allow for difference in experience and training as was brought out in Chapter II.

If in the class there are students from other colleges, the instructor should be expected to determine from the student's work just how much actual background and training he has for the course he is taking. While the study has indicated that those who are from other schools make better grades than those from their home school, it is not to be accepted as a universal truth in any sense.

Oftentimes in classes there will be found students who have experience in administration. Use should be made of these students' experiences in the recitations. Also they should be helped to find themselves as students again because it is believed that a few years out of school tends to reduce their efficiency as students. On the other hand, where there are several of these in a class, they should not be permitted to monopolize the recitations to the exclusion of all the rest of the students.

Grades in certain subjects vary as shown by TABLE III. While it is not in any sense certain that these variations are entirely due to any one cause, yet it

is true that there are certain changes that might be brought about to the benefit of all the students. For example, the department of Industrial Arts, that of Commerce, and other special subjects give better grades than other departments give where students do not work in such close contact with instructors. A study should be made of the various departments of the school with the idea of determining what practices each carry on that are favorable to good or bad instruction.

Evidently, supervised teaching as it was given to the graduates of Indiana State Teachers College who are included in this study, still lacked something of a motivating power. In practice teaching care must be taken in the future to inspire the student more and to disillusion him less than seems to have been done up to this time. After all, he is a novice, a little bewildered at the feeling of authority for the first time, but in most cases he is earnest enough to try to do his job in the best way he can.

The present work embraces too much, leaves too much unsaid, and is too imperfect to serve as an accurate reference work or as one in which an interested person finds the solution to any particular problem, but other studies that are to follow will prove to be of value in making available to the college administrator the things that

should determine his policies in certain matters, such as the acceptance of credit from other schools, what quality of work and how much can be safely accepted from other schools, the question of whether married students of a given age and standing should be expected to do better work than single students of the same age and standing, and whether students with one kind of experience should be expected to do better in certain subjects than students with another kind and why. At present it is impossible to make these studies, due to the dearth of data, but in a few years the data will have accumulated sufficiently to make all of these and many more that will be of value to the college administrator.

2. Use by Teachers in Practice.

The present work was not planned to be used by teachers in their classes. However, it will prove of value to teachers where personal matters are concerned, in working out the details of their careers, and in determining the effect to be produced by these factors.

It must be borne in mind that a graduate school in a teachers college is the place where administrative procedure and practice are taught. A teacher who does not plan to enter administration might spend his money to better advantage in the liberal arts college of a

university. However, if one does plan to enter administration, reference to the present work will indicate to him most of the outside factors that influence success in this graduate school.

Crises occur in our lives from time to time that force us to decide important issues on the spur of a moment. Those in the life of a teacher usually center around the decision of whether to accept a suddenly vacated position, in what college to do graduate work, or whether to marry or not. It is the author's suggestion that much time can be saved in making these decisions by referring to Chapter II.

Many times high school teachers are inclined to discourage a backward student from attending college. Too little attention is paid to the handicapped child. It is well to hesitate and remember that a student who made a college scholarship index of 39 finished the graduate school creditably and made B on his thesis.

B. Suggestions to Those Who Will Do Further Research in This Field

The writer makes no pretense of having exhausted the possibilities of this field of research. There is much work to be done. Many studies can be made from this material and many important facts lie buried in it.

The author suggests that further research be divided into three parts: that dealing with the secondary school records of people who are successful in getting degrees, that dealing with the college and graduate school records of those who finish their Masters', and finally the follow up, or that dealing with the success in life of those who receive their graduate degrees. These three parts can be divided into many parts, each of which will make a worthwhile thesis when exhausted.

Practically all of the material for Part I researches can be secured from the high school records in the files of the registrar's office. This material can be copied on forms and analyzed for making the study.

Unless one desires to carry the present research out to exhaustion, it is not advisable to do more work on Part II for some years yet. At the present rate of increase a large number of records are being added each year and in five years more it is believed that there will be an accumulation of at least five hundred. However, anyone who desires to do further research is welcome to such material and data as the author has.

Part III is the most important division of this research. It will require a student with money, time in which to work, and patience to run down each individual case. Part III, if entirely worked out by one person,

would make a doctor's thesis but it can be divided into several worthwhile masters' theses.

In addition to the preceding studies there are several others in the field that will add materially to the field of education.

A study should be made of the students from Indiana State Teachers College who do graduate work in other colleges.

The matter of whether practice teaching is a valuable aid to the teacher or not should be settled. We are just past a period in which supervised teaching was optional. A careful study of all the students who finished college in that period made by comparing their grades on the basis of whether they took supervised teaching or not, will determine the relation of grades to the type of student who took supervised teaching, and a follow up will determine what modifications, if any, are brought about by the practice.

In this study it is found that those who have had experience as administrators, on the whole, make better grades than those who have had most other kinds of experiences. Since it is the whole purpose of the school to prepare for life, it would be interesting to know if there is any difference in the quality of an administrator caused by having administrative experience before attending graduate school or not.

Another thing that should be noted is that the records included here are only those of people who were successful in finishing their theses to the satisfaction of their various committees. The other side of the question might be seen if there were included in this study the records of those whose theses did not pass or who failed to complete them.

Even the average college scholarship index does not indicate anything regarding the prospects of a good or a bad thesis.

The writer is forced to the conclusion that, according to the data now available, no indication of the probability of writing a good or a bad thesis can be gained from the study of an individual's college record.

C. Summary of Suggestions and Recommendations

A brief summary of previously stated suggestions reveals these outstanding points:

1. There should exist a double standard for graduate and undergraduate students.
2. Background of students should be known by the teacher.
3. Use should be made of the experiences of students who have served as administrators, but they should not be permitted to monopolize recitations.
4. A study should be made of the various departments of the college in order to determine their fundamental policies.
5. Care must be taken to inspire the student in practice teaching.
6. Further study should be carried on to improve the policies of administration.
7. Teachers should be urged to attend the graduate school of a teachers college only when preparing to enter administration.
8. No student should be discouraged from attending college.
9. A study should be made of the students from Indiana State Teachers College who do graduate work

in other colleges.

10. In the future an exhaustive study should be made of the relation between the grades made in certain subjects and successful thesis work.

11. Studies should be made in several schools of the relation between grades made in certain subjects by students who major in those subjects and other students who take those subjects.

The writer believes that if these suggestions and recommendations are carried out, a better understanding of the student will develop, a closer harmony between the student and the instructor will become possible, and an economy of time and effort will be effected.

APPENDIX A

Analysis of Thesis Material

1. Average Graduate School Scholarship Index.....	86.67
2. Average College Scholarship Index.....	69.42
3. Average Difference.....	17.27
4. Highest Graduate School Scholarship Index.....	100
5. Lowest Graduate School Scholarship Index.....	67
6. Highest College Scholarship Index.....	100
7. Lowest College Scholarship Index.....	39
8. Greatest Increase of Graduate School Scholarship Index Over College Scholarship Index	56
9. Greatest Decrease of Graduate School Scholarship Index Under College Scholarship Index....	23
10. Number of A Grades on Theses.....	80
11. Number of B Grades on Theses.....	72
12. Number of C Grades on Theses.....	6
13. Number of English Minors in Graduate Work.....	18
14. Number of Social Studies Minors in Graduate Work.....	13
15. Number of Science Minors in Graduate Work.....	10
16. Number of Mathematics Minors in Graduate Work.	4
17. Number of French Minors in Graduate Work.....	2
18. Number of Art Minors in Graduate Work.....	1
19. Average Graduate School Scholarship Index of Students From Other Colleges.....	86.26

20. Average Graduate School Scholarship Index of Students from Indiana State Teachers College...	71.62
21. Average Thesis Grade Made by All Students.....	84.38
22. Average Thesis Grade Made by All Students From Other Schools	86.20
23. Average Thesis Grade Made by All Students From Indiana State Teachers College	82.56
24. Minors of Students from Other Colleges	8
English	2
Social Studies	3
Latin	2
Mathematics	1
25. Number of Men Graduated	101
26. Number of Women Graduated	57
27. Average Graduate School Scholarship Index of Men	84.40
28. Average Graduate School Scholarship Index of Women	87.40
29. Average College Scholarship Index of Men.....	66.90
30. Average College Scholarship Index of Women....	70.70
31. Number of Students Who Worked for Administra- tive License	116
32. Number of Students Who Worked for No License..	42
33. Average College Scholarship Index of Those Who Have Taught in Rural Schools	66.38

34. Average Graduate School Scholarship Index of Those Who Have Taught in Rural Schools	87.51
35. Average of College Scholarship Index and Graduate School Scholarship Index of Those Who Have Taught in Rural Schools	78.18
36. Average Thesis Grade of Those Who Have Taught in Rural Schools	87.28
37. Average College Scholarship Index of Those Who Have Not Taught in Rural Schools	69.53
38. Average Graduate School Scholarship Index of Those Who Have Not Taught in Rural Schools....	86.00
39. Average College Scholarship Index and Graduate School Scholarship Index of Those Who Have Not Taught in Rural Schools	77.53
40. Average Thesis Grade of Those Who Have Not Taught in Rural Schools	88.12
41. Number of Cases in Which Graduate School Scholarship Index is Smaller than College Scholarship Index.....	10
42. Number of Cases in Which Graduate School Scholarship Index is the Same as College Scholarship Index	1
43. Average Graduate School Scholarship Index Where College Scholarship Index is Larger.....	79

44. Average College Scholarship Index Where College Scholarship Index is Larger.....	84.50
45. Average Difference Between Graduate School Scholarship Index and College Scholarship In- dex is Larger	5.50
46. Range in Difference 1 (3 cases) to 12 and 15 (1 each)	
47. Average College Scholarship Index of High School Teachers	65
48. Average Graduate School Scholarship Index of High School Teachers	87.17
49. Average Difference Between Graduate School Scholarship Index and College Scholarship In- dex of High School Teachers	21.04
50. Average College Scholarship Index of Students Without High School Experience.....	69.99
51. Average Graduate School Scholarship Index of Students Without High School Experience.....	88.63
52. Average Difference of Students Without High School Experience	16.92
53. Average College Scholarship Index of Students With Administrative Experience.....	69.91
54. Average Graduate School Scholarship Index of Students With Administrative Experience.....	88.63
55. Average Difference of Students With Administra- tive Experience	18.50

56. Average Thesis Grade of Students With Administrative Experience	86.66
57. Average College Scholarship Index of Students Without Administrative Experience.....	68.20
58. Average Graduate School Scholarship Index of Students Without Administrative Experience....	85.06
59. Average Thesis Grade of Students Without Administrative Experience	85.71
60. Average Difference between Graduate School Scholarship Index and College Scholarship Index of Students Without Administrative Experience..	17.53
61. Average College Scholarship Index of Married Students	68.56
62. Average Graduate School Scholarship Index of Married Students	86.44
63. Average Difference of Married Students	16.93
64. Average Thesis Grade of Married Students.....	84.40
65. Average College Scholarship Index of Unmarried Students	70.33
66. Average Graduate School Scholarship Index of Unmarried Students	86.28
67. Average Difference of Unmarried Students.....	18.27
68. Average Thesis Grade of Unmarried Students.....	88.25

69. Average Grade Made by all Students in College Education	73.00
70. Average Grade Made by all Students in Graduate School Education	85.91
71. Average Grade Made by all Students in College English	68.70
72. Average Grade Made by all Students in College Social Studies	69.23
73. Average Grade Made by all Students in College Science	70.30
74. Average Grade Made by all Students in Their College Major	82.64
75. Average Grade Made by all Students in Their College Minor	82.42
76. Average Grade Made by all Students in Their Practice Teaching	66.32
77. Average College Scholarship Index of Students Who Have Had Practice Teaching	66.32
78. Average Graduate School Scholarship Index of Students Who Have Had Practice Teaching	84.81

TABLE XIII

A COMPOSITE OF ALL THE FIGURES
USED IN THE PRESENT STUDY

	Mean	Median	Mode	Probable error	Average deviation	Range	Quartile deviation	Number of cases
Average graduate school scholarship index.....	87	90	95	2	6	33	71	158
Average index number of grades made by students from Indiana State Teachers College.....	72	79	95	2	6	61	70	129
Average index number of grades made by students from other colleges.....	86	93	96	2	4	25	88	29
Average index number of grades made by men.....	84	85	50	1	9	61	85	101
Average index number of grades made by women.....	89	90	75	1	3	53	88	57
Average index number of grades made by all students in college Education.....	73	71	50	1	12	68	71	153

TABLE XIII (Continued)

	Mean	Median	Mode	Probable error	Average deviation	Range	Quartile deviation	Number of cases
Average index number of grades made by all students in graduate Education.....	86	87	93	2	7	43	86	158
Average index number of grades made by all students in college English.....	66	65	50	.5	17.4	70	65	155
Average index number of grades made by all students in college Social Studies.....	69	70	50	2	1.3	75	67	153
Average index number of grades made by all students in college Science.....	81	71	50	11	15.43	75	70	154
Average index number of grades made by all students in Practice Teaching.....	84	87	75	11	12	50	73	56
Average index number of grades made by students with high school teaching experience.....	90	93	75	1	11	51	89	29

TABLE XIII (Continued)

	Mean	Median	Mode	Probable error	Average deviation	Range	Quartile deviation	Number of cases
Average index number of grades made by students with rural school teaching experience.....	88	91	95	4	8	46	92	57
Average index number of grades made by students with experience in school administration.	89	92	75	2	6	48	87	60
Average index number of grades made by students who were married when taking graduate work.....	86	89	75	4	4	51	70	93
Average index number of grades made by students who were not married when taking graduate work.....	86	89	95	4	6	61	82	65
Average index number of grades made in college majors.....	63	74	75	2	14	54	72	158
Average index number of grades made on theses.....	75	100	100	0	12	50	93	158