A STUDY OF GRADES AND TEST SCORES IN A SELECTIVE ADMISSIONS PROGRAM FOR TEACHER EDUCATION

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PREFACE

This study was concerned with the identification and analysis of relationships which existed, at the time of application for admission to Teacher Education, between the various grades, scores, and ratings which were used as criteria for admission to Teacher Education at Oklahoma State University. The study showed how ratings and scores from standardized tests compared with other existing measurements. The study was a descriptive study.

The study was the first step in a longitudinal study. As such, data needed to be gathered which would not be analyzed in the present study but which would provide a foundation for the studies which would follow. Some of these data were presented in the description of the data but were not treated in the statistical analysis. To provide a foundation for future studies, an analysis of certain data forming the bases of these studies was a purpose of the present study.

Indebtedness is acknowledged to the many persons who participated in various ways in the development of the study. Helpful suggestions and constructive criticisms were received from each member of the Advisory Committee: Dr. W. Price Ewens, Dr. Victor Hornbostel, Dr. Idella Lohmann, Dr. Kenneth D. Sandvold, and Dr. John E. Susky. Special recognition is due Dr. W. Price Ewens, the Committee Chairman, for guidance in selecting the problem, securing the data, and interpreting the results. Appreciation is expressed to Dr. Victor Hornbostel for his assistance in the statistical treatment of the data

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CHAPTER I

THE PROBLEM

This study examined the grade point averages and test scores used in the procedures for selective admissions to the Teacher Education program at Oklahoma State University at Stillwater, Oklahoma.

Need for the Study

Academic learnings and the skills necessary for the communication of those learnings are criteria used for selective admissions to the Teacher Education program at the University. Statements of educators express the belief that teachers should have a command of appropriate knowledges and intellectual skills if effective teaching is to take place: good teachers have trained intelligence and know the intellectual and cultural heritages (44, p. 88); effective teaching cannot take place without subject matter knowledge (62, p. 3); if the teacher does not know the subject, he cannot teach it (56, p. 273); communicating knowledge to others depends upon one's mastery of that knowledge (23, p. 88); it is only the teacher with mastery of the knowledge in the subject who can structure and restructure that knowledge so that every student, regardless of individual differences can be guided to learn as much as he is able to learn (73, p. 264). Possession of subject matter knowledge and possession of the intellectual skills needed to use that knowledge appeared on lists of teachers' characteristics

(59, p. 388), (25, p. 18), (29, p. 46), (75, p. 196), (21, p. 208), (11, p. 88).

The literature reviewed several studies of the characteristics of teachers. These studies sought to identify and define those characteristics which can be associated with effective teaching. A number of the studies presented in the literature were surveys of the selective admissions procedures used in institutions of higher learning for admission to the Teacher Education programs. These surveys indicated what teacher characteristics were used as criteria in the screening procedures and what means were used to evaluate these characteristics. A few studies of the selective admissions programs in specific schools were reviewed as they related to this study.

More studies are needed of factors involved in the selection of those who will become teachers. These studies should seek answers to such questions as: What basic characteristics of individuals are essential for effective teaching? How can these characteristics best be identified and measured? What level of academic achievement is necessary for success in the profession? What knowledges and intellectual skills are needed and how can they be measured?

This study, which examined the procedures being used to measure knowledges and intellectual skills of those who apply for admission to Teacher Education at Oklahoma State University, was needed by the Council on Teacher Education at the University for the purpose of evaluating the total program of selective admissions to Teacher Education and to Student Teaching. The study was the first step in a longitudinal study of the procedures being used.

Setting of the Study

A program of procedures for admission to Teacher Education and to Student Teaching at Oklahoma State University has been developed under the leadership of the Council on Teacher Education (68). The Council is composed of staff members from the several colleges responsible for Teacher Education. The procedures include screening for admission to the Teacher Education program during the second semester of the sophomore year and a second screening at the time of admission to Student Teaching.

> The admission program involves screening procedures designed to guarantee that the potential teacher is proficient in speech, that he has achieved reasonable mastery of his work in general education as determined by grades and scores on the STEP [Sequential Test of Educational Progress] ... (68, p. 1).

In the procedures the degree of mastery of work in "general education" is determined by the total grade point average, an essay examination, and the writing, mathematics, social studies, and science subtests of the STEP. To be admitted to Teacher Education, the student applies for admission during the second semester of the sophomore year. If the student is in the College of Arts and Sciences or the College of Education, the application is filed in the office of the Director of Student Personnel of his College. If the student is enrolled in the College of Agriculture, the College of Business, or the College of Home Economics, the application is filed in the office of the Department Head concerned with Teacher Education.

The criteria for admission to Teacher Education include the following: (1) a satisfactory rating on the speech test; (2) a score at/or above the 15th percentile on the STEP in writing, mathematics,

science, and social studies (a GPA of 2.0 or above will be accepted in any area in lieu of a STEP score below the 15th percentile); (3) a rating of satisfactory on the essay examination; (4) a total GPA of 2.0 or above; (5) the approval of the applicant's advisor.

An application form with the above information and other pertinent data is filed in the office of the Director of Education. This office then notifies each applicant if he is approved or rejected for Teacher Education.

Purposes of the Study

Generally stated, it was the purpose of this study to examine those criteria in the screening procedures used for admission to the Teacher Education porgram at Oklahoma State University which are concerned with the mastery of general education both content and skills.

More specifically, the study was to determine the relationships between the standardized test scores of the STEP and the GPA's in the areas of specific interest: English, mathematics, social studies, and science. The total GPA's were to be considered in relation to the standardized test scores in each of the areas. The scores on the essay examination were to be studied in relation to the total GPA's, the English GPA's, and the STEP writing scores.

The position of the STEP cut-off point was to be evaluated. The GPA to be required for admission in the area of a disqualifying STEP score was to be evaluated.

While ACT (American College Test) scores are not part of the screening procedures, most students applying for admission to Teacher Education have taken this battery of tests and have scores on file at

the University. The relationships between these scores in the areas of English, mathematics, social studies, and science and the STEP scores and GPA's in these areas were to be examined. The ACT scores were also to be studied in relation to the total GPA's.

Scope of the Study

The subjects in the study were 428 students at Oklahoma State University who took the STEP in February, 1966 as a part of the screening procedures for admission to the Teacher Education program. This group included 33 subjects from the College of Agriculture, 92 from the College of Arts and Sciences, 24 from the College of Business, 220 from the College of Education, and 59 from the College of Home Economics.

The three measures of academic knowledges and skills, including communication skills, used in the study were standardized test scores, grade point averages, and ratings. The standardized test scores included the STEP and ACT scores in the areas of writing or English, mathematics, social studies, and science. The total GPA's and the GPA's in English, mathematics, social sciences, and science earned by the end of the first semester of the 1965-66 school year were used. Ratings on an essay examination, which was administered at the same time as the STEP, and a speech test were also used.

Limitations of the Study

The study was limited to those students at Oklahoma State University at Stillwater, Oklahoma who, as applicants for admission to Teacher Education, took the STEP in February, 1966.

Only those Colleges concerned with the education of teachers: the

Colleges of Agriculture, Arts and Sciences, Business, Education, and Home Economics, were included in the study.

The teacher characteristics being studied were limited to knowledges and abilities related to the intellectual and cultural heritages and the communication thereof.

The means of measuring these knowledges and abilities and communication skills were limited to an essay examination, a speech proficiency test, STEP and ACT scores, and GPA's.

The areas of knowledges and abilities studied were English, writing, speaking, mathematics, social studies, and science.

Correlation studies were limited to those subjects for whom scores and GPA's were available.

The findings of the study were limited by the accuracy of all records used and by any variance which existed between the practices of the several Colleges in implementing the procedures.

Questions to be Answered

1. Were subjects who had scores below the 15th percentile rank on the STEP in any area admitted to Teacher Education on the basis of GPA's at or above 2.0 in the area of the low score?
2. What were the correlations between the total GPA's and the STEP raw scores in writing, mathematics, social studies, and science?
3. What were the correlations between the total GPA's and the ACT standard scores in English, mathematics, social studies, and science?

4. What were the correlations between the STEP raw scores and the GPA's in English, mathematics, social sciences, and science?
5. What were the correlations between the ACT standard scores and the GPA's in English, mathematics, social sciences, and science?
6. What were the correlations between the raw scores on the STEP and the standard scores on the ACT in each area?
7. What were the correlations between the ACT composite scores and the total GPA's?
8. What were the correlations between the ratings on the essay examination and each of the following: total GPA's, English GPA's, and raw scores on the writing test of the STEP?
9. Were the subjects who were rejected on the basis of the ratings on the essay examination the same subjects who were rejected on the basis of total GPA's?
10. Were the subjects who were rejected on the basis of the ratings on the essay examination the same subjects who had GPA's below 2.0 in English?
11. Were the subjects who were rejected on the basis of the ratings on the essay examination the same subjects who had scores below the 15th percentile rank on the writing test of the STEP?
12. Were the subjects who were rejected on the basis of scores on the STEP the same subjects who were rejected on the basis of total GPA's?

13. Were the subjects with scores below the 15th percentile rank on the STEP the same subjects who had GPA's below 2.0 in the areas of the low STEP scores?
14. How many subjects in addition to those who were rejected would have been rejected if GPA's of 2.5 had been required in lieu of STEP scores below the 15th percentile rank?
15. How many subjects in addition to those who were rejected would have been rejected if GPA's of 3.0 had been required in lieu of STEP scores below the 15th percentile rank?
16. How many subjects in addition to those who were rejected would have been rejected if the STEP cut-off point had been placed at the 20th percentile rank and a GPA of 2.0 had been required in lieu of STEP scores below the 20th percentile rank?
17. How many subjects in addition to those who were rejected would have been rejected if the STEP cut-off point had been placed at the 20th percentile rank and GPA's of 2.5 had been required in lieu of STEP scores below the 20th percentile rank?

Definition of Terms

ACT. ACT is the acronym for American College Test. This is a battery of four tests of educational development and academic potential. The four subtests are English usage, mathematics usage, social studies reading, and natural science reading (1, pp. 2, 3). The test is not

a test of factual knowledge alone, but also tests reasoning ability, critical thinking, and problem solving skills, as well as understandings of basic concepts and the ability to formulate and test hypotheses (1, p. 3).

> Each year the professional staffs of three organizations collaborate in developing and scaling three new forms of the ACT battery. Under the direction of the American College Testing Program's research staff, Science Research Associates of Chicago develops the new test forms and the Measurement Research Center of Iowa City performs the scaling and equating of new and old forms (1, p. 6).

The test is administered five times each year at testing centers throughout the United States and Canada under the supervision of The American College Testing Program, Inc. (70, p. 6). The test is administered to those students in their senior year in high school who are planning to attend institutions of higher learning. The scores on the test are reported to three institutions named by the student as those institutions which he is considering attending. The scores reported are in standard score form and in percentile ranks. Norms for college-bound high school seniors are used in determining the scores which are reported to the colleges.

GPA. GPA is the acronym for grade point average. The grade point average is determined by dividing the total points earned by the number of hours attempted. The points earned are computed on the basis of four points for each hour of A, three points for each hour of B, two points for each hour of C, one point for each hour of D, and zero points for each hour of F.

STEP. STEP is the acronym for the Sequential Test of Educational Progress. The STEP, like the ACT, is a test of educational development. Two assumptions upon which the tests are based are that the "... focus

of education is upon development of critical skills and understandings." and that "the success of education is to be measured in terms of the individual student's ability to apply his school-learned skills in solving new problems" (63, p. 5). The subtests include writing, mathematics, social studies, and science. The writing test is a test of English usage. The scores are reported in raw scores and in percentile ranks. The test is produced by The Cooperative Test Division of Educational Testing Service (24, p. 62).

Significance of the Study

The study will be used by the Council on Teacher Education at Oklahoma State University at Stillwater, Oklahoma as one of the means of evaluating the program of procedures for admission to Teacher Education. The study was the first step in a longitudinal study designed to determine the effectiveness of the selective admissions and retention procedures being used at the University. The study should provide data for later projects developed in the longitudinal study.

Those faculty members who are responsible for the preparation of teachers at this University should find both the descriptive data and correlational findings relative to their respective Colleges valuable in student advisement.

Other institutions of higher learning which have programs of Teacher Education should find the study a resource as they develop or study their programs for the selective admissions of teachers to Teacher Education.

CHAPTER II

REVIEW OF THE LITERATURE

Few issues are of greater concern to educators than the quality of the education being provided for children. The children of each generation become the lawmakers, doctors, scientists, and teachers who shape the world in which they and succeeding generations live. Their education is of vital importance. Of what should it consist?

What are the purposes of education? Cohen says:

> They should include the objective and universal requirements of culture and civilization as such; knowledge and insight for their own sakes; the assurance that new generations will have access to all of value that man has wrought, to what man intrinsically is and what his worth can be ... (26, p. 11).

"The intellectual efforts of previous generations have left us with a wonderfully righ cultural heritage" (54, p. 58). Through the process of education each generation is to learn all of value which preceding generations in the society have learned or have created. It is the duty and obligation of teachers to continually interpret and organize this knowledge and to see that it is transmitted to the next generation (54, p. 58). Bruner (23, p. 88) says that "... communicating knowledge depends in enormous measure upon one's mastery of the knowledge to be communicated." If, then, teachers are to transmit the intellectual and cultural heritages, they must first possess these heritages (44, p. 88).

Pitzer (54, p. 57) says a second "... function of education is to train the student to think," to develop in the student those

intellectual skills which enable him to use the knowledges, which he acquires, efficiently and effectively. The teacher must then not only have knowledge, which is the raw material for thinking, but must also have those intellectual skills necessary for translating that knowledge into action (66, p. 57).

If the two purposes of education presented above are to be realized, teachers must possess the intellectual and cultural heritages and must have the intellectual skills needed for the understanding, communication, and use of the knowledges in these heritages. What has research said about these knowledges and skills as they relate to teachers? What has been done to assure that those who do teach do have these characteristics?

Two kinds of studies have been reviewed: studies of the characteristics of teachers, and studies of the selective admissions practices which have been used by Colleges of Education.

Studies of Teacher Characteristics

Educators have for a number of years sought to identify the distinguishing characteristics of those teachers who were classified as good teachers. In the studies, which have been developed, opinions of individuals, tests and rating scales, and observation of teacher activity have been used as ways of finding teacher characteristics.

The studies which used the opinions of individuals used questionnaires, check sheets, and written descriptions as means of obtaining a list of those characteristics which individuals considered important. Administrators and supervisors, school board members, teachers, students, former students, and school patrons were asked to identify or

describe the characteristics of the "best teachers."

Did these individuals consider the possession of academic knowledges and intellectual skills to be necessary characteristics of good teachers? Did scholarship and knowledge of the subject to be taught find places on the lists of characteristics which were compiled from these studies? How did the various groups surveyed differ in the value placed upon these characteristics?

Book (20, pp. 241, 242) reported in 1905 that he collected 829 English compositions, describing the best teacher, from senior high school students in Massachusetts, Rhode Island, New York, Indiana, Illinois, Colorado, Montana, and Utah. He found scholarship listed as one of the characteristics of helpful teachers. "No favorite teacher was described who lacked this qualification. Other things being equal, the scholarly teacher is the favorite" (20, p. 256).

Superintendents of schools and presidents of school boards were asked by W. N. Anderson to rank fifteen characteristics of teachers. Six-hundred-three questionnaires were returned in this study reported in 1917. Scholarship and education were ranked first by both groups (6, pp. 83-90).

Dolch (31, p. 196) asked three classes of university freshmen in 1920 to write a paper "My Best High School Teacher." There were few girls in the class so their papers were not considered. Of the 82 men whose papers were used in the study, 69 listed "knew how to teach" and 39 listed "knew the subject" as characteristics of their best teacher. Davis (30, pp. 240-43) gave a similar assignment to two education classes of 38 juniors and 38 seniors at the University of Michigan in 1926. Of the thirty-five qualities that "make a teacher a

real success," which were reported, teaching ability was first, masterful knowledge of the subject taught was sixth, and general knowledge or culture was seventh. Birkelo (18, pp. 453-456) also used college students in his study reported in 1929. He submitted a brief questionnaire entitled "My Best Teacher or the Teacher That I Remember Best" to 614 students in two state teacher colleges, one liberal-arts college, one state agricultural college and a junior college located in the states of North Dakota, Minnesota, and Iowa. The questionnaire contained 24 desirable traits from which the subjects were to select and rank ten. Knowledge of the subject matter taught appeared on 51.6 per cent of the lists, skill in teaching appeared on 69.0 per cent of the lists, and ability to make points clear in instruction on 74.9 per cent.

In 1929 Jordan (47, pp. 27-43) reported a study in which 150 high school seniors, 120 teachers, and 100 supervisors and a similar number of patrons were asked to rank the 46 traits in a list compiled by Dr. W. W. D. Sones and students of the University of Pittsburg. Intelligence was ranked second by high school students, first by teachers, second by supervisors, first by school patrons in Indiana and second by patrons in Pennsylvania. The traits were to be nominated for a place in the 15 most important characteristics. Scholarship was the twenty-fifth characteristic most chosen by high school students for a position in the 15 most important characteristics. It was the ninth most chosen by teachers, twentieth most chosen by supervisors, thirty-first most chosen by patrons in Indiana, and thirty-ninth most chosen by patrons in Pennsylvania. High school students were also subjects in Ryle's study reported in 1928 (60, pp. 82-85). In this study, two senior

English classes were asked to write compositions giving the qualities they admired in teachers. Forty-eight compositions were turned in listing a total of 25 qualities. A thorough knowledge of the subject taught ranked eighth and general knowledge was fourteenth.

A major study, the Commonwealth Teacher-Training Study, was completed in 1928. One of the concerns of this study directed by W. W. Charters (25, p. iii) was the identification of traits of competent teachers. Over one hundred administrators collected data from several thousand teachers-in-service attending summer school. An equal number of administrators collected data from other groups of people. From these interviews and from analysis of literature, a list of eighty-five traits was compiled. This list was telescoped into a master list of twenty-five traits. One of the twenty-five traits was good judgment which was defined as discretion, foresight, insight, and intelligence.

Another of the twenty-five traits was scholarship. The report of the study included a list of the twenty-five traits showing the rank importance of each trait for the teachers of four different grade levels. Good judgment was ranked fourth for primary grades, third for intermediate grades, first for junior high school, and second for senior high school. Scholarship was ranked twenty-first for primary grades, twenty-first for intermediate grades, sixteenth for junior high school, and fifth for senior high schools (25, p. 18).

A second major study was completed in 1952. This study, concerned with excellent teachers and their qualities in South Carolina, was directed by J. McT. Daniel (29, p. iii). Questionnaires were sent to three groups of people asking about the characteristics of the most excellent teacher in their experience. One group was composed of

administrators and supervisors. A second group included teachers and patrons, while the third group was made up of pupils. "Seventy-three per cent of the school superintendents included scholastic or cultural qualities, as knowledge of subject, and general scholarship," in their lists of the characteristics of excellent teachers (29, p. 25). In the opinions of superintendents, excellent teachers had above average scholastic ability. The high school principals agreed with the superintendents in the ranking of scholarship. Sixty-seven per cent of the white and 64 per cent of the Negro elementary principals included scholarship as one of the qualities. Fifty-five per cent of the county superintendents and state supervisors and 58 per cent of the teachers included scholarship and cultural qualities on their lists (29, pp. 26, 27). Forty-three per cent of the white eleventh grade pupils, 22 per cent of the white eighth grade pupils, 20 per cent of the eleventh grade Negro pupils, and 10 per cent of the eighth grade Negro pupils listed scholarship and culture as qualities of excellent teachers (29, p. 146).

Witty (75, p. 196), using the Quiz Kids radio show, conducted a survey of children's opinions concerning the characteristics of good teachers. The children were in grades one through twelve. Unusual proficiency in teaching a particular subject was one of the twelve traits cited by the children. In the 14,000 letters received in the 1946 survey, this trait was ranked twelfth of the twelve; in the 33,000 letters in the 1947 survey, the trait was ranked fourth of the twelve; and in the 35,000 letters received in the 1948 survey, fifth of twelve.

Booker's study, which was reported by Bretsch in 1955 (21, p. 208), included 162 teachers, supervisors, and recent education graduates.

These subjects were asked what personal characteristics teachers should have. Nine traits were given. Of these, scholastic ability was sixth and speech and English usage were eighth.

Hall's study was approached from the viewpoint that "... any valid criteria for teacher success ultimately rests with the product of the teaching effort after the student has ..." left that classroom (41, p. 1). He used as subjects 1217 undergraduates from Ohio State University and Capital University in Columbus who had been in the same teachers' classrooms during their school years. They listed the three best teachers and the three worst teachers of their experience, stated where and when these teachers were encountered, gave the subjects which they taught, described the perceived effects of their teaching, and made character sketches of each. Only descriptions of high school teachers were analyzed. This included 125 best and 76 worst teachers. Findings of the study included the following: 28 per cent continued an interest in the subject taught by the best teacher, six per cent majoring in the subject; 11 per cent said the best teacher taught the subject matter to them while they were in class, four per cent said the subject matter was taught well enough that later courses were easier or they were placed in advanced status; 14 per cent said the best teachers taught academic skills which could be used then and later; 32 per cent said they lost interest in the subject while in the class of their worst teacher; 22 per cent said their worst teacher did not teach the subject matter while they were in class. Some of the worst teachers were characterized as knowing their subject and no worst teacher was characterized as being "... stupid or ignorant of subject matter ..." (41, p. 3).

The studies which have been presented thus far have been of the

"number-counting" type. The desirability of the teacher characteristics identified was a matter of individual opinion. Beginning in the thirties, rating scales and tests were used in the identification and evaluation of the characteristics of effective teachers. Academic achievement of both pupils and teachers became part of the evaluative process. Statistical analyses of the data were used in most studies.

In the early studies of teaching efficiency, supervisors and administrative officials visited the teachers' rooms and made estimates of the efficiency of the teachers. On rating scales, a weighted judgment was recorded by the rater theoretically making the evaluation more objective. The rating scales were made up of lists of teacher characteristics which were to be checked by the rater.

In 1930, Barr and Emans (12, pp. 60-64) analyzed 209 rating scales collected from cities of more than 25,000 inhabitants, state departments of education, and departments of education in universities in 46 states. They found 200 different items which were listed five times or more. Use of English was among the characteristics named most frequently, it was used 87 times, scholarship 67 times, intellectual capacity 25, knowledge of subject matter 20, grasp of subject matter 13, general scholarship seven, and knowledge of the subject six. Items involving scholarship and professional preparation were listed a total of 301 times. The list of 200 items was telescoped to a list of 25 traits which then was compared to the list of 25 traits in the Charters' (25, p. 18) study. Good judgment which included discretion, foresight, insight, and intelligence had an average rank of three in the Charters' study and a rank of 20 in the Barr-Emans's study. Scholarship had an

average rank of 17 in the Charters' study and 10 in the Barr-Emans' study.

The 590 teachers, who were the subjects of Anderson's (4, pp. 22-29) study in 1931, all graduated from Upper Peninsula of Michigan High School and from the teacher training program at Northern State Teachers College in Michigan. Of this group, 480 received two or three year teaching certificates and 110 completed the program for the degree. Supervisor's ratings of these teachers were correlated with their high school grades and with their college grades. For those without the degree, the coefficients of correlation were .10 for high school grades and .19 for college grades. For the teachers with degrees, the correlations were .22 for high school grades and .21 for college grades. For all teachers, the correlations were .12 for high school grades and .19 for college grades.

In a study by Barr and others (16, pp. 71-141) in 1935, 99 teachers and their pupils in grades two through seven in five Wisconsin cities were used in a study checking the validity of seven different rating scales and ten measures of teachers' qualities commonly associated with teaching success. The criteria for teacher efficiency were the rating scales and the gain in pupil achievement as measured by the Stanford Achievement Test. The coefficients of correlation were uniformly low. They concluded that either the Stanford Achievement Test measures were not adequate criteria or the instruments used to measure teaching ability were not valid.

Barr (14, p. 205) reported that Martin found in 1944 that "... superintendents' ratings were an unsatisfactory criterion of teaching efficiency, at least unpredictable."

Seagoe administered twenty-one tests including tests of intelligence and special abilities and achievement to persons preparing to become elementary teachers. "The linguistic factor in intelligence, general culture, knowledge of contemporary affairs ..." were the most selective (14, p. 205). Barr (10, pp. 218-221) listed a number of tests of intellectual ability and achievement to be used for identifying effective teachers. Some of these were: College Aptitude Test, Cooperative English Test, Cooperative General Achievement Test, Cooperative Culture Test, Miller Analogies Test, National Teacher Examination, Ohio State University Psychological Test, Otis Self-Administering Test of Mental Ability, and the Stanford Achievement Tests.

Stuit's study, which was reported by Barr (9, p. 187) in 1940, compared the scholastic grades of 100 teachers rated successful by superintendents and 100 rated less successful. The successful teachers had higher grades. Of the successful, 11 per cent of the grades were below 80 and 19 per cent were above 90. Of the less successful, 33 per cent of the grades were below 80 and 13 per cent were above 90.

Jones (46, pp. 153-180) studied 46 women who graduated from the University of Wisconsin in 1951, '52, and '53; and who were teaching in secondary schools within 100 miles of Madison. She found that those teachers rated as good teachers on the basis of the practice teaching grade, the placement bureau rating, and the principal's M-Blank rating, made higher college grade point averages in both professional courses and in courses in their major teaching field than did those teachers rated as average.

In 1955, Knoell made a second attempt to relate teacher success with word fluency (15, p. 260). In the first study, reported in 1953,

Knoell administered nine tests of word fluency to 38 teachers. After a year of teaching, the subjects were rated by the principals and two outside observers using the Wisconsin M-Blank. In this study, she found two of the nine tests "significantly related" to teaching success at coefficients of correlation .28 and .46 (38, p. 572). In the 1955 study, she used 38 fluency variables. She found 28 negative correlations with teacher effectiveness and no positive correlations that were significant.

Morsh, Burgess, and Smith found that student's rating of their instructor's subject matter knowledge correlated significantly with the instructors' proficiency test scores. They found little relationship between student gains and the instructor's intelligence and knowledge of subject matter. They also found little relationship between supervisor's or fellow instructor's estimates of the instructor's effectiveness and student gains. Barr reported this study in 1958 (15, p. 257).

In a study of the relationship between eight measures of factors which were thought to be related to teaching efficiency and the teacher's efficiency ratings after one year of teaching, Hult (14, p. 204) found negative correlations with the Henmon-Nelson Test of Mental Ability, the Cooperative Reading Comprehensive Test, and the Cooperative General Culture Test. She found a positive correlation of .44 with the total university grade point average. The criteria of teacher success were practice teaching marks and the ratings of five supervisors in the first actual teaching position (43, p. 176).

A series of related studies were developed by Rostker, Rolfe, LaDuke, and Hellfritzsch in the thirties and early forties. In these studies, the pupil achievement was used to measure teacher success.

Rostker (57, pp. 6-51) conducted a study during the 1936-'37 school year in which the criteria of teaching ability were the measurable changes produced in pupils. Twenty-eight teachers of seventh and eighth grade social studies classes in non-departmentalized schools were the subjects of the study. These teachers were given the units to be used for study. The unit objectives and broad topical outlines were provided for them. The 375 pupils were pre-tested with the Kuhlmann Anderson Intelligence Test, the Traxler Silent Reading Test, and the Wrightstone and Hill's Tests of social studies. The posttests were the Wrightstone and Hill's Test of social studies. A number of tests were administered to the teachers. These included: The Teachers College Psychological Examination, The American Council Civics and Government Test, Morris Trait Index L, and the Stanford Educational Aptitudes Test. The teachers were rated on the Almy Sorenson Rating Scale for Teachers, the Michigan Education Association Teacher Rating Scale, and the Diagnostic Teacher Rating Scale. Rostker (57, p. 50) found that the intelligence of the teacher was the highest single factor related to teaching ability as measured by pupil achievement. Knowledge of the subject matter was significantly associated with pupil gain. "The correlations between supervisory ratings of teachers and the criteria of teaching ability used in this study, are statistically insignificant" (57, p. 50).

Rolfe (55, pp. 52-74) conducted a study similar to the Rostker (57, pp. 6-51) study. Fifty-seven teachers in one and two room rural schools were to teach citizenship units to 404 seventh and eighth grade pupils. The same pretests, posttests, and rating scales were used as were used in the Rostker study. A few additional tests were used.

Rolfe found that rating scales used by experienced and competent supervisors gave positive correlations with pupil gains and that intelligence as measured by the American Council Psychological examination was not related to teacher effectiveness. He concluded that there appeared to be considerable evidence that the teachers in the rural schools in his study did not contribute as much to pupil success as do teachers in single grade rooms.

LaDuke (49, pp. 75-100), using the same tests as were used in the Rostker and Rolfe studies, used as subjects 34 teachers in one teacher schools and their 200 seventh and eighth grade pupils. He found a correlation of .61 between the intelligence of the teachers and teaching efficiency as measured by pupil achievement. He found that ratings by superintendents and supervisors did not agree with pupil gains. He also found differences between the ratings by the supervisors on the same teachers.

Hellfritzsch (42, pp. 166-199) used the data from the Rostker and Rolfe studies. Using factor analysis of the 19 teacher ability factors investigated, he found they could be accounted for by four factors. Two of these factors were (1) general knowledge and mental ability, and (2) teacher rating scale factor. He concluded that teacher rating in Rostker's study had

> little in common with any of the other teacher abilities measured, including the ability of the teacher to promote pupil gorwth. The rating assigned to a teacher on one of these scales is dependent either upon teacher traits not measured here, upon characteristics of the rater rather than the teacher, or upon an interaction of these. The ratings are not acceptable as a substitute for pupil growth in evaluating the educative process.
>
> The pupil gain index of teaching ability PGTA is dependent upon only the GKMA [general knowledge mental abilities] factor in this study. This indicates that

> the better teachers tend to be more generally informed, of greater mental ability, possessing more knowledge of their subject matter. ... (42, p. 184).

From the Rolfe data Hellfritzsch found that the four factors were uncorrelated with each other, in the one room rural schools which Rolfe studied. He found that the teacher factor provided for 44 per cent of the variance in pupil achievement in the Rostker study and 24 per cent of the variance in the Rolfe study. He found also that the pupil factor provided for 27 per cent of the variance in the Rostker study and 48 per cent of the variance in the Rolfe study.

Studies of teachers' activities or behaviors have been used in the search for those characteristics which distinguish good teachers from average or poor teachers. The Charters' study (25) included the compilation of a master list of 1001 teacher activities. In this study, the activities were not related to personal qualities of the teachers.

Ryans' study of teacher characteristics is largely a study of teacher behaviors. Teacher behaviors in this study were characterized by psychological and sociological values such as warm, friendly, aloof, liberal, and authoritarian. This study, which was reported in 1960 in Characteristics of Teachers (59), was described by Wood (59, p. vii) as a massive study carried out in a rigorously scientific manner. The problem of the research was finding those characteristics possessed by teachers who were classified as poor, average, or good teachers. The study extended over a period of six years, included approximately 100 separate research projects, and involved 6,000 teachers. These teachers represented 1,700 schools in about 450 school systems (59, p. 6). The techniques included observations by trained observers and the development and administration of paper-and-pencil tests and inventories for

identification of behaviors and attitudes, verbal intelligence, and emotional stability (59, p. 368). One of Ryans' postulates read, "Teacher behavior is a function of personal characteristics of the individual teacher" (59, p. 21). In his discussion of this postulate, Ryans pointed out that the behavior of teachers was determined in part by personal characteristics of the teacher some of which were intellectual and had "... their sources in both the genetic (unlearned) and experiential (learned) backgrounds of the individual" (59, p. 21). One of the propositions of the study stated that, "Certain characteristics are correlated with grades or marks earned by the teacher when in college" (59, p. 25). In one of the research projects of 1,640 teachers, those teachers who evaluated their college academic achievement as outstanding had "F ratios significant at the .05" level with most of the scales of desirable teacher behavior patterns (59, p. 312). High or good teachers in the combined elementary and secondary groups tended to "... possess strong interest in reading and literary affairs; ... [and to] manifest superior verbal intelligence ..." (59, p. 398). Low or poor teachers tended to "... manifest less high verbal intelligence ..." (59, p. 398). In his generalizations regarding outstanding teachers, Ryans said that "superior intellectual abilities, [and] above-average school achievement ... appear to apply very generally to teachers judged by various kinds and sets of criteria to be outstanding" (59, p. 366).

Another dimension has been added to the teacher behavior studies in the teacher-pupil interaction studies. Since early 1950's, there have been a number of these research studies (3, p. 130). Interaction results "... when two or more persons behave overtly toward one another

so that each receives some impression or perception of the other distinct enough to incur reaction" (3, p. 130). Three systems for observing interaction were described by Amidon and Simon (3, pp. 130-132). These systems were entitled cognitive, affective, and multidimensional. The teacher-pupil interaction studies, for example Flanders' (28, pp. 197-218), do not appear to relate the interaction or the teacher behavior within the interaction to specific teacher characteristics.

Analysis and Implications of Teacher Characteristics Studies

Nathan Monroe reported in 1846 on the qualifications of the teacher in terms of disposition, health, and appearance (75, p. 193). Book's (20, p. 256) study in 1905 added academic knowledges and ability to these qualifications. More recent studies, such as the Wisconsin studies (11), included affective factors as the most significant in the evaluation of teachers. The teacher-pupil interaction studies (3, pp. 130-132) looked at the behaviors of teachers (cognitive, affective, or multidimensional) as they related to, affected, or promoted pupil reaction. Earlier number-counting studies gave way to studies in which the data were treated by such statistical procedures as factor analysis, test of significance, correlation, and analysis of variance. The coefficient of correlation was perhaps the most widely used. Criteria employed in evaluating teachers' effectiveness included opinions, ratings on rating scales, scores on standardized tests of the teachers' abilities and of pupil achievement, and analysis of the teachers' behavior in the teaching situation.

What was learned about teachers from this research? In 1940, Barr (8, p. 182) said there was little agreement among workers relative to

the qualities essential for teaching. In 1950 Sandford and Trump (61, p. 1392) wrote, "Nearly every factor which it is thought may condition success in teaching has been studied, but the investigations have not provided a satisfactory answer to the question ...", what are the qualities necessary for effective teaching? In 1960 Ryans (59, p. 2) said that the questions "What constitutes effective teaching?" and "What are the distinguishing characteristics of competent teachers?" remained unanswered (59, p. 2). He added that "... relatively little progress has been made ... with the details that are necessary for describing the competent teacher or the characteristics of effective teaching ..." (59, p. 2).

Despite these statements, most of the studies seemed to give intelligence and academic knowledge and abilities assured places among the characteristics of good or successful teachers.

Rating scales were developed to provide a more orderly and objective means for evaluating the effectiveness of teachers. Studies which used rating scales and studies which were designed to measure the validity of the scales were as disappointing as the teacher characteristic studies. Some studies showed low but positive correlations between ratings and other measures of teacher success, while others showed no correlations or correlations which were not significant (57, p. 50), (49, p. 100), (42, p. 184). Witty (75, p. 194) quoted Barr as saying in 1940 that whatever it was that the supervisors looked for it was not what pupils thought was good nor did it show up in pupil achievement. Anderson wrote in 1954:

> ... no adequate basis for validation of teacher evaluation exists at present. There is apparently no general agreement as to what is good teaching, and even if there were,

> present day measures lack the reliability necessary for valid criteria (5, p. 69).

In 1961, Barr (11, p. 8) still saw rating of teachers as unreliable. The same teacher being observed by two administrators at the same time could be rated among the best by one observer and among the worst by the other (11, p. 5). Barr said of teacher-educators, administrators, and teachers, that each person "... can be said to have a more or less private system of evaluation all of his own" (11, p. 5). "The bitterest attacks on rating scales pertain to the lack of reliability in the instruments ..." to variations in the ratings from changes in the teacher, in the rater, or in the interpretation of the scales (5, p. 43). Many of these studies were concerned with intelligence and academic knowledges as they were related to what raters termed teacher effectiveness.

It appeared to have been generally assumed that general intelligence and academic knowledge were related to teacher effectiveness (11, p. 125). Many studies found a positive correlation between the effectiveness of teachers and measures of the teachers' intelligence (49), (59), (57), or academic achievement (9), (46). "The relationship between grade point averages and successful teaching has been usually found to be positive, but too low for individual prediction" (11, p. 126). Durflinger points out that it has been difficult to find support for any findings because researchers seldom use the same batteries of tests or populations that could be judged comparable (32, p. 365, 366).

Studies concerned with the identification of the distinguishing characteristics of good teachers and with the validity and reliability of rating scales have been disappointing. The studies of the relationship between teacher intelligence or academic achievement and teacher

effectiveness have been a little more rewarding. When teacher effectiveness is evaluated by means of rating scales and rating scales have not proved reliable, the results of any study using rating scales would be questionable. Pupil achievement was thought by some to be the real measure of teacher effectiveness. Pupil achievement and rating scales do not appear to identify the same teachers as effective teachers. If rating scales are to be used in research, it would seem reasonable to assume that they should be based upon the same objectives as all other instruments or factors included in the research design. Before the characteristics of effective teachers can be identified, the purposes of the school system in which the teachers being studied are working must be considered. Those characteristics which caused the purposes and objectives of the educational program to be realized would appear to be desirable characteristics. It would seem that, if supervisors or administrators, who were rating teachers, were basing their ratings on the same school objectives as the instructional program seeks to achieve, perhaps the ratings would have a higher correlation with pupil achievement as a measure of teacher success. Greater care needs to be given to what is accepted as criteria for teacher effectiveness and to the validity and reliability of the measuring instruments used.

What statistical procedures are best for the analyses of the data in these studies? What about correlation studies? Abell (2, p. 49) stated:

> The main point here is that a correlation coefficient or related measures of covariance are extremely useful, but in the context of teacher ability they must be used with extreme care or they can be misleading.

Barr (7, p. 202) stated that low coefficients of correlation between teacher effectiveness and academic achievement were not without

significance. Low correlations may result because of the selective factors which have been in operation. Ellena pointed out that selection occurred during the secondary school years, at the time of admission to college, again at admission to Teacher Education, at graduation, and at the time of employment (35, p. 23). The range of intelligence would be so narrowed that probably all who reached this point had all the intellectual ability and knowledge needed to be effective teachers (7, p. 202). So low correlation should not be interpreted to mean that these characteristics were not necessary for successful teaching. Barr went on to say that, "One of the most potent causes of low correlations will be found ... in the nature of teaching ability itself" (7, p. 202). Teaching is a very complex process and the skills necessary for teaching are also complex.

For more conclusive results, the designs of the studies need to be more sharply drawn so that the factors being studied could be assumed to have a cause-effect relationship. The statistical analyses used would need to be interpreted in terms of the existing limitations of the study.

What should be studied? What are the basic essentials without which effective teaching or pupil learning cannot take place? Barr and Jones (15, p. 261) stated that "... studies to date have dealt with the surface aspects of teaching and the teacher." Behaviors were studied but underlying abilities, knowledges, and skills which made the behaviors possible should perhaps be studied in relation to the behaviors.

The study reported in this paper was concerned with measures of those knowledges and skills which appear to be basic essentials for teachers.

Studies of Selective Admissions Programs

The selection of those who are to be prepared to teach has been a concern of educators most of this century (61, p. 1390). To develop a program of procedures for the selection of teachers, educators first needed to identify those criteria which would be used. This gave rise to the teacher characteristics studies which have been reviewed. The teacher characteristics selected for the study reported by the writer were possession of academic knowledges and intellectual skills. A review of the studies of selective admissions practices which have been used should reveal what part academic knowledges and intellectual skills have played in the admission or rejection of students who sought to enroll in Teacher Education.

Barr reported in 1932 a study of the catalogues of 662 institutions offering teacher training and found that 33 used scholarship as the bases for selection, 20 used an English test, and three used achievement tests (13, pp. 99-100).

Stout (65, p. 300) studied the selective admissions programs of 785 institutions of higher education. Data were gathered by means of a questionnaire during the 1952-'53 school year. Five different criteria were reported. General intelligence tied with moral fitness for second place in the rank order of frequency of use. (Emotional stability was first.) She found that at the time of admission to the college one-tenth of the institutions administered standardized tests to prospective teachers in addition to the institution-wide admissions tests. Only six institutions reported that their scholastic standards were lower for admission to Teacher Education than for admission to other professional programs or to a liberal arts program. Fourteen

per cent of the institutions required a higher grade point average for admission to Teacher Education than for admission to the liberal arts program. Two-thirds had the same grade point average for all fields. Not quite two-fifths used tests and inventories for admission to Teacher Education. Almost 20 per cent of all the institutions required above C averages in one or more areas of the student's program at the time of his admission. Only a little more than one-tenth used speech tests for admission to the institution while two-fifths used ability to communicate effectively for admission to Teacher Certification. For admission to Teacher Education, 58.8 per cent used previous academic records, 30.6 per cent used the student's records in prerequisite professional education courses, 21.5 per cent used speech tests, and 25.7 per cent used English proficiency tests (65, pp. 303-305).

In 1958 Edson and Davies (34, pp. 327-334) did a follow-up of the 19 Minnesota Colleges used in the Stout study. In 1953 three colleges required higher grade point averages in Teacher Education than in other areas; in 1958 the number had risen to four. Academic achievement required for admission to Teacher Education in the two studies included:

	1953	1958
No standard until Student Teaching	12	12
C average in academic work	15	13
C average in education courses	8	6
C+ average in education courses	3	4
C average in the major field	6	5
C+ average in the major field	3	5

(34, p. 331).

In 1958 more schools evaluated English proficiency than in 1953 and more used objective tests of academic aptitude and achievement.

Rutherford's study, reported in 1961, was concerned with small state teachers colleges. In teachers colleges admission to the college

is generally interpreted as admission to the Teacher Education program. He studied 57 colleges which had programs to educate and graduate elementary teachers with bachelor's degrees and which had been accredited by the National Council for the Accreditation of Teacher Education (NCATE) and/or a regional accrediting organization. Fifty per cent or more used high school records and entrance examinations for admission to the college. The criteria receiving a high ranking in the opinions of the cooperating schools included: average and above average intelligence, speech free from defects, English usage proficiency, and an average grade of C from high school. An average grade of B from high school for entrance into the college was considered highly desirable (58, p. 3939).

In a study in 1959 of 180 publicly supported institutions accreditated by the National Council for Accreditation of Teacher Education (NCATE), Magee (52, p. 81) found variations in scholarship requirements for admission to upper-level professional work. Sixteen per cent of the colleges which used only the admission to Teacher Education required better than a 2.00 (C) scholarship average in the total program or in specified areas. Eighty per cent of all the institutions reporting considered 2.00 (C) grade point adequate for admission to a program leading to teacher certification. Only 19.5 per cent of the institutions required a grade point average above C in any part of the candidate's program. The required grade point averages above 2.00 and the percentages of institutions requiring these grade point averages were: 1.1 per cent required 2.10, 1.7 per cent required 2.20, 2.8 per cent required 2.25, 1.1 per cent required 2.30, 11.1 per cent required 2.50, .6 required 2.75, and 1.1 per cent required 3.00. Of these minimal

grade point averages above 2.00, in 11 of the 35 institutions the requirements applied only to the major field, in 3 they applied only to the major field and to professional courses, in 2 they applied only to students preparing for secondary school teaching, and in 19 they applied to the total college work completed (52, pp. 83, 84).

Farr, through the use of a questionnaire, surveyed the testing practices of 443 institutions which were members of the American Association of Colleges for Teacher Education (AACTE) (36, p. 140). The following results of the study were reported in the proceedings of the 1965 meeting of the organization:

> One-hundred-fifty-six schools reported the use of tests for the decision of admission to the teacher education program ... The three tests used most frequently for this purpose are the Cooperative School and College Ability Test, the College Entrance Examination Board Scholastic Aptitude Test, and the Cooperative English Test. ... Three tests, the Graduate Record Examination Area Tests, the Cooperative General Culture Test, and the Sequential Test of Educational Progress appear to be used to evaluate the general educational development of the students at the time they apply for the teacher education program (36, p. 142).

Descriptions of the selective admissions programs in individual schools have been reported by several researchers.

Brown (22, p. 252) pointed out that admissions requirements for Teacher Education programs were not new. The first state normal school in the United States opened in Lexington, Massachusetts in 1839. The entrance requirements included examinations in orthography, reading, English, grammar, geography, and arithmetic.

In Lins' study (50, pp. 2-60) of students entering the University of Wisconsin in September, 1939, he found the criterion of the composite freshman and sophomore grade point average appeared to be a valid measure of whether or not a person would be admitted to teacher education.

Criteria evaluated included: rank in high school class, Henmon-Nelson Test of Mental Ability, American Council on Education Cooperative English Test, American Council on Education Psychological Examination for College Freshmen, American Council on Education Cooperative General Culture Test, National Teachers Examination, and the actual University grade point average at the end of the sophomore year (50, pp. 2-60).

In the 1943 report on the Michigan Cooperative Teacher Education Study, Trout described the selection procedures of several universities (69, p. 12). The University of Utah which had had selection for Teacher Education since 1936 included in their screening criteria intelligence test scores, high school records, and college records (69, p. 12). The School of Education of Syracuse University collected the following data on Teacher Education candidates: speech, scholarship, English, and scholastic aptitude (69, p. 13). "The most complex pattern of criteria for admission to the professional study of education is that used by the College of Education of Wayne University" (69, p. 13). Tests, usually standardized tests, were used wherever possible. The criteria included academic aptitudes, scholarship, hearing, and speech (69, p. 13). New Jersey had a state wide plan for admission to the six teacher colleges. The selections were made on the basis of general education and scholarship among other criteria (69, p. 14). The 22 teacher educating institutions in Michigan had scholarship and intelligence as the two most widely used criteria (69, p. 15).

The College of Education at the University of Florida adopted a selective admissions program in 1949 (67, p. 74). The candidates for admission were to have completed 64 hours of the University program of comprehensive and required foundation courses. They were to have

academic averages of C or above. They were to have satisfactory rating on speech and hearing tests.

White reported on the selection of prospective teachers at Syracuse University in 1950 (72, pp. 24-31). The criteria used, intelligence, general culture, scholarship, and special aptitudes, were a little different from the criteria reported for Syracuse in 1943 by Trout (69, p. 13). In 1950 Syracuse was using the following tests: American Council on Education Test of Academic Ability, Cooperative General Culture Test, and Cooperative Reading Test (72, p. 26). Of the 1490 applicants in 1939 through 1944, 70.5 per cent were accepted (69, p. 13). During the period from the fall of 1947 through the summer of 1949 of the 995 applicants, 57.99 per cent were admitted (72, p. 30).

McLean (51, p. 671) reported that the Teacher Selection and Counseling Service at the University of California in 1952 used the following tests: the Cooperative English Test, an arithmetic test, The American Council Psychological Examination, and a speech test.

The University of Wisconsin was reported in 1955 to screen candidates for Teacher Education on the basis of the transcript of credits earned, the English attainment, the completion of standard requirements for majors and minors, the total grade point average, the high school rank, and grades from the college admissions orientation tests (64, p. 120). Sixty-two credit hours of approved courses were required with a minimum grade point average of 1.3 (C = 1 grade point per credit hour, B = 2, A = 3). The orientation tests included the Cooperative Reading Test, the Cooperative General Culture Test, and the American Council on Education Psychological Examination. No cutoff points were used (64, p. 120). These requirements were somewhat different from the

requirements reported in Lin's 1939 study of the University of Wisconsin.

The 1961 study of the University of Southern California School of Education by Michael and Jones listed several tests which were combined to form a battery referred to as the Professional Aptitude Test (PAT) (53, p. 995). The battery included odd numbered items in subtests of history-social studies, literature, science, fine arts, and mathematics of the General Culture Test of the Cooperative Testing Branch of ETS; a comprehensive achievement examination in English fundamentals known as the USC English Classification Test; and measures from the 1957 California Tests Advanced Form: Reading Vocabulary, Reading Comprehension, Mathematics Reasoning, and Mathematics Fundamentals (53, p. 995). In the study the scores on the PAT were compared with grade point averages in the methods courses. "Coefficients of multiple correlations for the PAT fall between .41 and .54 and between .37 and .47 relative to the first and second criterion variables, respectively" (53, p. 997).

The Minnesota studies of Student Personnel Work in Teacher Education were published in 1963. They described a longitudinal research project underway at the University of Minnesota. Walter W. Cook was the Principal Investigator and Roger E. Wilk was the Project Director (74, p. iii). Some of the selective admissions policies for admission to the College of Education at the University were:

> Students admitted directly from high school must rank in the top 60 per cent of their high school class. Students transferring to the College of Education to major in elementary education must have a C average (2.0 GPA) in specified work in composition, science, and social science, and a C average in their total program. ... Majors in the secondary academic subjects who enter the College and the junior year at the same time, must have a C average in their total record

> and a C+ average (2.5 GPA) in courses of their intended teaching major. Agriculture teaching majors must have a 2.3 GPA in their agriculture courses at the time of admission, but must present a 2.5 GPA for graduation . ... Students take a battery of psychological test, [and] ... take a speech and hearing test. ...
>
> The psychological tests which are required for junior admission regardless of whether students were previously enrolled in the College or are transferring from another school, are the Miller Analogies Test, form A, the Cooperative Reading Test, form C-2-R. ... There are no cutting scores on any of these tests or inventories. ... (74, p. 10).

Every institution which is accredited by NCATE is required to have established criteria for admission, retention, and graduation of teachers. The criteria are to include academic performance, speech proficiency, and proficiency in communication, particularly English usage (17, p. 41).

Analysis and Implications of the Selective-Admission Studies

The studies of selective-admissions procedures which have been reviewed seemed to indicate that there was general acceptance of scholastic ability and possession of academic knowledges and intellectual skills as desirable characteristics for teachers. Many of the institutions whose programs were studied used these characteristics as criteria for selecting those who were admitted to Teacher Education. Studies reported the use of standardized test scores, grade point averages, English proficiency test scores, and speech test ratings as measures of these knowledges and skills.

The grades used in the criteria seemed to indicate that average grades were generally acceptable for those who wished to be teachers. Woodring (76, p. 28) says that it is not enough to have maintained a C average, that a C average in many colleges is evidence of nothing but

intellectual mediocrity. Conant maintains "... that we should endeavor to recruit our teachers from the upper third of the graduating high school class on a national basis" (27, p. 81).

It seems that longitudinal studies would be desirable to find if the selective-admissions practices being used were producing effective teachers. Care would need to be taken in the research designs to assure that the degree of effectiveness existing was the result of the selection. Studies which would find the effect of the selective-admissions program on the number of applicants for Teacher Education and the quality of these candidates might be of value. Would higher selective-admissions requirements result in more of the better students becoming candidates as some educators believe? (65, p. 301).

The total GPA seems to be the best criterion to be used at the time of admission to Teacher Education. Would raising the GPA required for admission mean that those who finished the preparation would be more effective teachers? In analyzing the data in his study, Stoelting found that, of the twenty-four who were rated below average in teaching success, seven were admitted with GPA's well below 1.3 (C = 1), 12 were admitted with GPA's between 1.3 and 1.5, while four had GPA's of above 2.0. He found that if the minimal GPA were increased to 1.5, 13 of the 24 below average teachers would have been rejected, 31 of the average, seven of the above average, and one superior teacher would also have been rejected (64, p. 130). Perhaps there is a minimal amount of academic knowledge which is essential for successful teaching. Maybe, when this amount is attained, other characteristics become the differentiating factors. Further study is needed of how much knowledge is essential. "... it may be easier today to rule out candidates on the

basis of characteristics which are rather clearly causes of failure than to select in a positive fashion those for whom success is assured" (39, p. 37). A low level of academic aptitude and achievement may be more significantly correlated with teacher ineffectiveness than a high level is correlated with teacher effectiveness.

Selective admission of candidates to Teacher Education on the basis of academic achievement was rather widely accepted and practiced. The study reported in this paper evaluated the grades and scores which were used as measures of knowledges and skills in the selective admissions program for Teacher Education at Oklahoma State University.

CHAPTER III

METHOD AND PROCEDURE

The method and procedures of this study can be presented under three headings: Selection of the Subjects, Collection of the Data, and Treatment of the Data.

Selection of the Subjects

The subjects of the study were the students who took the STEP tests and the essay examination in February, 1966 as part of the screening procedures for admission to Teacher Education at Oklahoma State University.

Collection of the Data

The data used in the study included the following test scores, grade point averages, and ratings: STEP, Form A, raw scores and percentile ranks in writing, mathematics, social studies, and science; ACT scaled scores and percentile ranks in English, mathematics, social studies, science, and the composite of the four areas; total grade point averages at the end of the first semester of the 1965-1966 school year; grade point averages in English, mathematics, social sciences, and science at the end of the first semester of the 1965-1966 school year; and ratings on the essay examination and the speech test.

Other data gathered for each subject included: admitted-rejected

status, academic major, and kind of certification sought.

The data were gathered from several different sources. A list of the subjects was obtained from the office of the Department of Education in the College of Education. This list was prepared by the Bureau of Tests and Measurements at the time of the administration of the STEP. Included on the list were names of the subjects, the names of the Colleges in which the subjects were enrolled at the time of the test, and the STEP raw scores and percentile ranks in each of the four areas tested: writing, mathematics, social studies, and science.

ACT scaled scores and percentile ranks in English, mathematics, social studies, and science and a score for the composite of the four areas were obtained from the office of the registrar. Many ACT scores not available from the subject's files in either the registrar's office or in the student personnel offices of the different Colleges were provided, for the purposes of research, by The American College Testing Program, Inc., Iowa City, Iowa.

The total GPA's and the GPA's in English, mathematics, social sciences, and science were obtained from the subject's files in the student personnel offices, or in the offices of the department heads in the various colleges, or were obtained from the registrar's office.

Essay examination ratings, speech test ratings, approved-rejected status, academic majors, and kinds of certification sought were obtained for all subjects from the Office of the Director of Teacher Education.

Much of the data were cross checked in the different offices.

Treatment of the Data

Coefficients of correlations were computed between the STEP scores

in each area and each of the following: the total GPA's, the GPA's in the areas, and ACT scores in the areas.

Coefficients of correlation were computed between the ACT scores in each of the areas and each of the following: the total GPA's and the GPA's in the areas.

Point biserial correlations were computed to find the coefficients of correlation between the ratings on the essay examination and the following: STEP writing scores, total GPA's, and English GPA's.

Figures were prepared for each of the five Colleges showing the bivariate distribution of STEP percentile ranks in the four areas tested and the total GPA's in relation to the cut-off points.

Figures were prepared for each College showing the bivariate distribution of STEP percentile ranks in the four areas tested and the GPA's in the areas.

Findings from the statistical treatments were analyzed and the results were interpreted. The questions of the study were restated and the answers derived from the findings. The study was summarized, implications of the findings were stated, and suggestions were made.

CHAPTER IV

ANALYSIS OF FINDINGS

The analysis of findings included the description of the distribution of certain variables among the Colleges, the analysis of the results from the correlation studies, and studies showing the bivariate distribution of criteria for admission to Teacher Education.

Distribution of Certain Variables

The distributions of the following variables were presented by Colleges: number of subjects, majors elected by the subjects, the kinds of certification sought, the admission-rejection status, cases of failure to complete admissions procedures, ratings on the speech test and essay examination, total GPA's below 2.0, scores below the 15th percentile on the STEP, and the identification of subjects with disqualifying factors both those who were admitted to Teacher Education and those who were not admitted to Teacher Education.

The subjects in this study were 428 students who took the STEP in February, 1966. The distribution by Colleges of the subjects in the sample is presented in Table I. A total of 429 students started this battery of tests. One student in the College of Arts and Sciences did not complete the battery so was dropped from the study. Of the 428 subjects remaining, 33 were in the College of Agriculture, 92 in the College of Arts and Sciences, 24 in the College of Business, 220 in the

College of Education, and 59 in the College of Home Economics.

TABLE I

DISTRIBUTION OF SUBJECTS BY COLLEGES

College	N	% of total
Agriculture	33	7.71
Arts and Sciences	92	21.50
Business	24	5.61
Education	220	51.40
Home Economics	59	13.78
Totals	428	100.00

Twenty different majors were elected by the subjects. Table II shows the number and percentage of the subjects from each College who majored in each of the different fields. Those who were interested in teaching elementary or preschool children majored in elementary education or in Family Relations and Child Development (FRCD). Those who wished to teach on the secondary level majored in one of the following fields: language arts, mathematics, social sciences, science, foreign languages, speech, business, agriculture, home economics, industrial arts, technical education, or trade and industrial education. A number of the subjects majored in specialized areas. These areas were art, music, physical education, special education, speech therapy, or

library science. Those who majored in specialized areas received training to work with children on both the elementary and the secondary level.

TABLE II

DISTRIBUTION OF MAJORS BY COLLEGES

Major	College of Agriculture		College of Arts and Sciences		College of Business		College of Education		College of Home Economics	
	N	%	N	%	N	%	N	%	N	%
Language Arts			15	16.3			25	11.4		
Mathematics			4	4.3			16	7.3		
Social Studies			13	14.1			19	8.6		
Science			15	16.3			5	2.3		
Art			3	3.3			2	.9		
Music			15	16.3			1	.5		
Physical Education			7	7.6			8	3.6		
Foreign Language			6	6.5			2	.9		
Speech			5	5.4			2	.9		
Special Education							1	.5		
Speech Therapy			9	9.8			1	.5		
Business					24	100.0				
Agriculture	33	100.0								
Home Economics									48	81.4
FRCD									11	18.6
Industrial Arts							12	5.5		
Technical Education							4	1.8		
Trade and Industrial Education							6	2.7		
Elementary Education							114	51.8		
Library Science							1	.5		

Three different kinds of teaching certificates are available to

those who complete the Teacher Education programs. Those who have completed the program with an elementary major or a major in FRCD receive elementary teaching certificates. Those who complete the professional program on the secondary level and major in a specific field receive secondary teaching certificates in their fields. Those majoring in specialized fields such as art, music, and physical education are issued general certificates which permit the holders to teach on either or both elementary and secondary levels. Table III shows the distribution of the levels of certification sought.

TABLE III

DISTRIBUTION BY COLLEGES OF CERTIFICATION SOUGHT

College	Total N	Elementary N	Elementary %	Secondary N	Secondary %	General N	General %
Agriculture	33			33	100.0		
Arts and Sciences	92	1	1.1	59	64.1	32	34.8
Business	24			24	100.0		
Education	220	114	51.8	92	41.8	14	6.4
Home Economics	59	11	18.6	48	81.4		
Totals	428	126	29.4	256	59.8	46	10.7

Of the 428 subjects 29.4 per cent sought elementary teaching certificates and 59.8 per cent sought secondary certificates. Ten and seven-tenths per cent applied for admission to programs leading to the

general certificate. One subject in the College of Arts and Sciences, 51.8 per cent of the subjects in the College of Education, and 18.6 per cent of those in the College of Home Economics applied for admission to the Teacher Education program leading to elementary certification. The one subject in the College of Arts and Sciences who applied for admission to the elementary program and another subject in that College who applied for admission to a program leading to the secondary certificate were preparing to teach in specialized areas. Preparation in a specialized area leads to a general certificate which permits the holder to teach on both the elementary and secondary levels. Both of these subjects should have applied for admission to programs which lead to the general certificate. All subjects in the Colleges of Agriculture and Business were preparing to teach on the secondary level. Eighty-one and four-tenths per cent of the College of Home Economics, 64.1 per cent of the College of Arts and Sciences, and 41.8 per cent of the College of Education were preparing to teach on the secondary level. Because of the larger enrollment in the College of Education, more secondary teachers were being prepared by this College than were being prepared by the College of Arts and Sciences. The general certificate was sought by 6.4 per cent of the subjects in the College of Education and 34.8 per cent of the subjects in the College of Arts and Sciences.

The admission-rejection status of each subject in the sample was determined. These data are presented in Table IV. Of the 428 subjects in the study who took the STEP, 331 or 77.3 per cent, were admitted to Teacher Education. Seventeen and five-tenths per cent of those who applied for admission were rejected. Five and one-tenth per cent of those who took the STEP had no applications on file so no action was

taken to admit or reject these subjects. The College of Agriculture had the highest percentage of rejections. Nearly one-half of the applicants from this College were rejected, 48.5 per cent. Five of the 16 from this College who were rejected had not taken the speech test. If these five had taken the test and had been accepted, the percentage of rejections would have been 33.3 per cent which still seems to be high.

TABLE IV

DISTRIBUTION BY COLLEGES OF THE ADMISSIONS, REJECTIONS, AND CASES ON WHICH NO ACTION WAS TAKEN

College	Total	Admitted		Rejected		No Action	
	N	N	%	N	%	N	%
Agriculture	33	17	51.5	16	48.5		
Arts and Sciences	92	74	80.4	18	19.6		
Business	24	20	83.3	1	4.2	3	12.5
Education	220	169	76.8	33	15.0	18	8.2
Home Economics	59	51	86.4	7	11.9	1	1.7
Totals	428	331	77.3	75	17.5	22	5.1

A student who wishes to be admitted to the Teacher Education program must complete an application form, take a speech test, take an essay examination, and take the four subtest of the STEP. A number of students failed to complete the application form, but completed the rest of the requirements. Several students did not take the speech

test. Data concerning those subjects who failed to complete the admissions procedures are presented in Table V.

TABLE V

DISTRIBUTION BY COLLEGES OF THE SUBJECTS WHO FAILED TO COMPLETE THE ADMISSION PROCEDURES

College	Total N	No Application N	No Application %	No Speech Test N	No Speech Test %
Agriculture	33			5	15.2
Arts and Sciences	92			7	7.6
Business	24	3	12.5		
Education	220	18	8.2	6	2.7
Home Economics	59	1	1.7	1	1.7
Totals	428	22	5.1	19	4.4

There were 41 incidences of failure to complete the admissions procedures. Twenty-four of these were in the College of Education. There were five in the College of Agriculture, seven in the College of Arts and Sciences, three in the College of Business, and two in the College of Home Economics.

The code numbers for the thirty-five subjects responsible for the 41 incidences of failure to complete the admissions procedures are presented in Table VI. The code numbers for all of the subjects in the study and the data for all of the subjects appear in Appendix A. The

TABLE VI

SUBJECTS WHO FAILED TO COMPLETE ADMISSIONS PROCEDURES

Student Code Number	No Application on File	No Speech Test Score
A 01s		x
A 06s		x
A 15s		x
A 29s		x
A 31s		x
S 08s		x
S 30s		x
S 31s		x
S 32s		x
S 51s		x
S 54s		x
S 90g		x
B 07s	x	
B 09s	x	
B 16s	x	
E 31s	x	
E 33s	x	
E 35e	x	
E 47s	x	x
E 54s	x	x
E 55g	x	
E 57e	x	
E 59e	x	
E 66e	x	
E 89e	x	x
E110e	x	
E115s	x	x
E123s	x	
E163e	x	
E190s	x	
E192g	x	
E203s	x	x
E204g	x	x
H 38s		x
H 42e	x	
Totals	22	19

letter prefixes used in the code numbers indicate the Colleges in which the subjects were enrolled: A for the College of Agriculture, S for the College of Arts and Sciences, B for the College of Business, E for the College of Education, and H for the College of Home Economics. Suffixes were added to the subjects' code numbers in Table VI to show the level of certification sought: e was used for elementary, s for secondary, and g for general. These same suffixes were used in other tables and figures in which student code numbers appear.

Thirteen of the 35 subjects who did not complete the admissions procedures failed to take the speech test, 16 failed to turn in a completed application form for admission to the Teacher Education program, and six failed to turn in the application and also failed to take the speech test. Procrastination seems to have been a factor here, since students are responsible for scheduling the speech test and for completing and turning in the application form for admission to the program of Teacher Education. No subject in either the College of Agriculture or the College of Arts and Sciences failed to complete the application form. No subject in the College of Business failed to take the speech test but three failed to complete the application. In the College of Education 18 subjects were involved. None of the 18 had filed the application form for admission to the program. Six of the 18 had not taken the speech test. The College of Home Economics had one subject who failed to take the speech test and one who failed to complete the application form. While procrastination may have been a factor, the distribution pattern among the Colleges of those who failed to complete the admission procedures suggests that other factors such as advisement policies, communication procedures, or clerical practices

relating to specific Colleges may have been involved. In the Colleges of Agriculture and of Arts and Sciences, 12 subjects failed to take the speech test but none failed to file the application form. In the other three Colleges, the pattern was nearly reversed with 22 failing to complete the application and only seven failing to take the speech test.

Of the 35 who failed to complete the admissions procedures, eight were preparing to teach on the elementary level, four were seeking general teaching certificates and the remaining 23 were seeking admission to the program of study leading to the secondary certificate.

The criteria for admission to Teacher Education include ratings on the speech test and the essay examination, the grade point averages on the total college program, and scores expressed in percentile ranks on the four subtests of the STEP.

On the speech test, which is administered by the Speech and Hearing Center, the students receive ratings of satisfactory or unsatisfactory. Table V, page 50, shows that 4.4 per cent of the 428 subjects did not take the test. Table VII shows the distribution of satisfactory and unsatisfactory ratings among the Colleges.

One and six-tenths per cent of the subjects received unsatisfactory ratings on the speech test and 93.9 per cent received satisfactory ratings. The College of Business was the only College in which all subjects took the test and all received satisfactory ratings. There were no unsatisfactory ratings in the College of Arts and Sciences but seven from this College did not take the test. Three per cent from the College of Agriculture, 1.8 per cent from the College of Education, and 3.4 per cent from the College of Home Economics made unsatisfactory ratings on the speech test.

TABLE VII

DISTRIBUTION OF SPEECH TEST RATINGS BY COLLEGES

College	Total N	Satisfactory N	Satisfactory %	Unsatisfactory N	Unsatisfactory %	No Test N	No Test %
Agriculture	33	27	81.8	1	3.0	5	15.2
Arts and Sciences	92	85	92.4			7	7.6
Business	24	24	100.0				
Education	220	210	95.5	4	1.8	6	2.7
Home Economics	59	56	94.9	2	3.4	1	1.7
Totals	428	402	93.9	7	1.6	19	4.4

The essay examination was administered at the time of the administration of the STEP. Ratings of satisfactory and unsatisfactory were given on the essay. Table VIII presents the data for the essay examination for the several Colleges.

TABLE VIII

DISTRIBUTION BY COLLEGES OF THE RATINGS ON THE ESSAY EXAMINATION

College	Total N	Satisfactory N	Satisfactory %	Unsatisfactory N	Unsatisfactory %
Agriculture	33	28	84.8	5	15.2
Arts and Sciences	92	89	96.7	3	3.3
Business	24	24	100.0		
Education	220	211	95.9	9	4.1
Home Economics	59	56	94.9	3	5.1
Totals	428	408	95.3	20	4.7

Twenty of the 428 subjects in the sample received unsatisfactory ratings on the essay examination. The College of Business had no unsatisfactory essay ratings. Three and three-tenths per cent of the College of Arts and Sciences, 4.1 per cent of the College of Education, 5.1 per cent of the College of Home Economics, and 15.2 per cent of the College of Agriculture had unsatisfactory essay examination ratings.

For admission to Teacher Education, applicants must have GPA's of 2.0 or above in the total college program. Table IX shows the distribution among the Colleges of the 38 subjects who had total GPA's below 2.0.

TABLE IX

DISTRIBUTION OF TOTAL GPA'S BELOW 2.0 BY COLLEGES

College	Total N	Total GPA's Below 2.00 N	%
Agriculture	33	7	21.2
Arts and Sciences	92	9	9.8
Business	24	1	4.2
Education	220	19	8.6
Home Economics	59	2	3.4
Totals	428	38	8.9

Eight and nine-tenths per cent of the 428 subjects in the sample had total GPA's below 2.0. One subject in the College of Business, two

in the College of Home Economics, seven in the College of Agriculture, nine in the College of Arts and Sciences, and 19 in the College of Education had total GPA's below 2.0.

Scores at or above the 15th percentile rank in each of the four subtests of the STEP are required for admission to Teacher Education. The four subtest areas are writing, mathematics, social studies, and science. The distribution of the STEP scores below the 15th percentile rank is presented in Table X.

TABLE X

DISTRIBUTION BY COLLEGES OF STEP SCORES BELOW THE 15th PERCENTILE

College	Writing		Mathematics		Social Studies		Science	
	N	%	N	%	N	%	N	%
Agriculture	9	27.3	1	3.0	3	9.1	2	6.1
Arts and Sciences	9	9.8	3	3.3	3	3.3	2	2.2
Business			1	4.2				
Education	20	9.1	6	2.7	8	3.6	3	1.4
Home Economics	4	6.8	2	3.4	1	1.7	1	1.7
Totals	42	9.8	13	3.0	15	3.5	8	1.9

Nearly 10 per cent of the subjects, 9.8 per cent, had scores below the 15th percentile on the writing subtest of the STEP. On the mathematics subtest three per cent of the 428 subjects had scores below the

cut-off point. Three and five-tenths per cent had low scores on the STEP social studies subtest, and 1.9 per cent had low scores on the STEP science test.

There was a total of 78 STEP scores below the 15th percentile rank. Fifteen of these were in the College of Agriculture, 17 were in the College of Arts and Sciences, one was in the College of Business, 37 were in the College of Education, and eight were in the College of Home Economics.

While there was a total of 78 low STEP scores, there were not 78 different subjects involved. A number of subjects had scores below the 15th percentile in more than one area of the STEP. Table XI shows the number of subjects making STEP scores below the 15th percentile rank and the number of low scores made in each College. There were 12 subjects with low scores in the College of Agriculture, 13 in the College of Arts and Sciences, one in Business, 27 in Education, and eight in Home Economics. There were 61 different subjects who had low STEP scores.

TABLE XI

DISTRIBUTION BY COLLEGES OF LOW STEP SCORES AND THE NUMBER OF SUBJECTS MAKING THEM

College	Total	Low STEP Scores	Subjects Making Low Scores	
	N	N	N	%
Agriculture	33	15	12	36.36
Arts and Sciences	92	17	13	14.13
Business	24	1	1	4.17
Education	220	37	27	12.27
Home Economics	59	8	8	13.56
Totals	428	78	61	14.25

Students seeking admission to the Teacher Education program may have disqualifying scores on the following criteria: the speech proficiency test, the essay examination, the total GPA, and the four subtests of the STEP. If disqualifying scores are obtained in any one or more of the criteria, except the STEP scores, the student is rejected. The STEP scores may be reviewed. A GPA of 2.0 or above in the area of a disqualifying STEP score may be used in lieu of the low STEP score and the student admitted to Teacher Education.

Table XII shows the subjects in the College of Agriculture who had disqualifying scores. Five subjects in the College had unsatisfactory ratings on the essay. Three of the five also had low STEP writing scores. Two of the five had low total GPA's. One of the five had both a low total GPA and a low STEP writing score. The two subjects with both unsatisfactory essay ratings and low STEP writing scores had three unacceptable scores each. One of these two had a low total GPA as the third low score while the other had a low social studies score.

Eight low STEP scores in the College of Agriculture were cancelled by GPA's in the areas. Four subjects whose disqualifying scores were cancelled were admitted to Teacher Education. Subjects A 22 and A 23 were admitted when the low STEP scores were cancelled by GPA's of 2.0 or above in the areas of the low scores. Subjects A 05 and A 28 were admitted with disqualifying scores. A 05 had a low STEP writing score which was not cancelled by the English GPA and A 28 was admitted with a low STEP science score which was not cancelled by the science GPA. The STEP science score reported to the College for A 28 was incorrect. This subject was admitted on the basis of the incorrect score.

Eighteen subjects in the College of Arts and Sciences had a total

TABLE XII

SUBJECTS WITH DISQUALIFYING SCORES AND SUBJECTS WITH NO SPEECH SCORES IN THE COLLEGE OF AGRICULTURE

Subject Code Number	Speech	Essay	Total GPA	STEP Writing	STEP Mathematics	STEP Social Studies	STEP Science
**A 01s	x						
A 02s		x			x		
A 04s			x				
E A 05s				x			
**A 06s	x						
A 08s			x	x			
A 10s		x		x		x	
**A 15s	x		x				
**A 16s						x	
A 18s			x				
*A 22s				x			x
*A 23s						x	
A 24s		x	x	x			
A 26s		x	x				
A 27s	x			x			
E A 28s				x			x
**A 29s	x		x				
**A 31s	x						
A 32s		x		x			
A 33s				x			
Totals	6	5	7	9	1	3	2

** No speech score
* Admitted to Teacher Education
E Admitted in error with a low STEP score

Suffixes added to subject code numbers:
e - elementary
s - secondary
g - general

of 29 unacceptable scores. These subjects and their disqualifying scores are presented in Table XIII. Six with no speech scores as their only disqualifying factor are also shown in Table XIII.

Eleven, 34.37 per cent, of the 32 subjects in the College of Arts and Sciences who were preparing for the general certificate had disqualifying scores. Seven, 11.87 per cent, of the 59 who were preparing for secondary certification had unsatisfactory scores. Six others who were preparing for the secondary certificate had no speech score as the only disqualifying factor. All three subjects who had unsatisfactory essay ratings were preparing for the general certificate. These three subjects all had low STEP writing scores. One of the three also had a low total GPA and low STEP scores in mathematics and social studies. The other two with the unacceptable ratings on the essay had no other low scores. Not including the cases with no speech scores, 12 subjects had one disqualifying score each. Eight of these were seeking admismision to the program to prepare for the general certificate while four were on the secondary level. Four subjects had two disqualifying scores each. Two of these were mentioned above with unsatisfactory essay ratings and low STEP writing scores. The other two with two disqualifying scores each had low total GPA's and low STEP writing scores. One subject who was seeking admission to the secondary level program had four disqualifying scores: a low total GPA and low STEP scores in mathematics, social studies, and science. The only subject with five unacceptable scores was described above with unsatisfactory essay rating, low total GPA, and low STEP scores in writing, mathematics, and social studies.

Eight low STEP scores in the College of Arts and Sciences were

TABLE XIII

SUBJECTS WITH DISQUALIFYING SCORES AND SUBJECTS WITH NO SPEECH SCORES IN THE COLLEGE OF ARTS AND SCIENCES

Subject Code Number	Speech	Essay	Total GPA	STEP Writing	STEP Mathe-matics	STEP Social Studies	STEP Science
*S 02g				x			
S 03s			x	x			
*S 05s				x			
S 06s			x				
S 07s			x	x			
**S 08s	x						
E S 13g			x				
S 20s			x		x	x	x
**S 30s	x						
*S 31s	x						
**S 32s	x						
**S 46g		x	x	x	x	x	
**S 51s	x						
**S 54s	x						
S 63g							x
*S 68s				x			
S 75g		x		x			
S 76g			x				
S 79g						x	
S 80g			x				
S 82g		x		x			
*S 84g					x		
*S 86s				x			
**S 90g	x		x				
Totals	7	3	9	9	3	3	2

** No speech score
* Admitted to Teacher Education
E Admitted in error with a low total GPA

Suffixes added to subject code numbers:

e - elementary
s - secondary
g - general

cancelled by the GPA's in the areas. Five subjects in this College were admitted to Teacher Education when GPA's in the areas were used in lieu of the low STEP scores. One subject, S 13, was admitted with a low total GPA.

Table XIV shows that only two subjects with applications on file in the College of Business had disqualifying scores. One had a low total GPA and one had a low STEP mathematics score. The subject with the low mathematics score was admitted to Teacher Education on the basis of the GPA in mathematics.

TABLE XIV

SUBJECTS WITH DISQUALIFYING SCORES
IN THE COLLEGE OF BUSINESS

Subject Code Number	Speech	Essay	Total GPA	STEP Writing	STEP Mathe-matics	STEP Social Studies	STEP Science
B 06			x				
*B 21					x		
Totals			1		1		

* Admitted to Teacher Education

Table XV shows the 51 subjects in the College of Education who had diqualifying scores. This includes those with no speech scores.

Sixteen, 14.03 per cent, of the 115 in this College who were seeking elementary certification had disqualifying scores. Twenty-five,

TABLE XV

SUBJECTS WITH DISQUALIFYING SCORES AND SUBJECTS WITH NO SPEECH SCORES IN THE COLLEGE OF EDUCATION

Subject Code Number	Speech	Essay	Total GPA	STEP Writing	STEP Mathe-matics	STEP Social Studies	STEP Science
*E 07s				x	x		
E 12g			x				
E 15s			x				
E 16s	x						
E 17g			x	x			
E E 18s				x			
E 21s			x				
E 25s			x				
*E 27e							x
*E 32s				x			
E 36e			x				
E 43s			x				
**E 47s	x			x			
E 49s			x				
**E 54s	x						
E 56g			x				
E 62e			x	x	x	x	x
E 79s			x				
*E 80e					x	x	x
**E 89e	x						
E100e					x		
E102e			x	x		x	
*E106e					x		
E109s					x		
**E115s	x						
E121e				x		x	
E122e						x	
E123s			x				
E128e			x				
E140s		x		x		x	
*E146s				x			
E154e	x						
E162e				x			
E163e	x						
E169s		x		x			
E176s			x				
E182s				x			
E185e		x					
E186e		x					
E188g			x				
E189s		x	x	x			

TABLE XV (Continued)

Subject Code Number	Speech	Essay	Total GPA	STEP Writing	STEP Mathe-matics	STEP Social Studies	STEP Science
E190s				x			
*E191s				x			
E192g	x	x					
E194e						x	
E201s			x	x			
**E203s	x						
**E204g	x	x		x		x	
E213s		x		x			
E217s		x		x			
E220s			x				
Totals	10	9	19	20	6	8	3

** No speech score
* Admitted to Teacher Education
E Admitted in error with low STEP writing score

Suffixes added to subject code numbers:

e - elementary
s - secondary
g - general

27.17 per cent, of the 92 applying on the secondary level had unacceptable scores. Six, 42.86 per cent, of the 14 seeking admission to a program leading to the general certificate had unsatisfactory scores. Four additional subjects, one on the elementary level and three on the secondary level, had no speech scores as the only disqualifying factor.

Not counting the incidences of no-speech-score, 33 subjects in the College of Education had only one unsatisfactory score each. Twelve of these 33 were on the elementary level, 18 were on the secondary level, and three sought general certificates. Eight subjects in this College had two disqualifying scores each: one on the elementary level, five on the secondary, and two sought general certificates. Five subjects had three disqualifying scores each: two of these were seeking to teach on the elementary level, two on the secondary level, and one was preparing in a specialized area leading to the general certificate. The one subject who had five disqualifying scores was applying for admission to a Teacher Education program leading to the elementary certificate.

Nine subjects in the College of Education had unsatisfactory ratings on the essay. Two of the nine were seeking admission on the elementary level, five on the secondary level, and two were seeking admission to the program leading to the general certificate. The two on the elementary level had no other disqualifying scores. All five on the secondary level who had unsatisfactory essay ratings had low STEP writing scores; one also had a low total GPA. One of the two who were seeking the general certificate and had unsatisfactory essay ratings had a low STEP writing score also; neither of these two had a low total GPA. The elementary level subject who had five disqualifying scores had satisfactory ratings on the speech test and the essay examination, but

had a low total GPA and low STEP scores in all areas.

In the College of Education, 22 low STEP scores were cancelled by the GPA's in the areas. Seven subjects in this College were admitted to Teacher Education on the basis of GPA's in the areas in lieu of the low STEP scores. Subject E 18 was admitted in error with a low STEP writing score. The score reported to the College was incorrect and the subject was admitted on the basis of the incorrect score.

Table XVI shows the subjects in the College of Home Economics who had disqualifying scores. Thirteen subjects in this College had a total of 15 disqualifying scores. One other subject had no speech score.

Three of the subjects in the College of Home Economics who had disqualifying scores were on the elementary level and ten were on the secondary level. The subject with no speech score as the only disqualifying factor was on the secondary level. Eleven of the 13 who had unacceptable scores had a single disqualifying score each. Two, who were on the secondary level, had two low scores each. Three subjects had unsatisfactory ratings on the essay examination. One of these three had a low STEP writing score and none had a low total GPA.

Five of the subjects in the College of Home Economics who had unacceptable STEP scores were admitted to Teacher Education on the basis of GPA's in the areas of the low scores. One subject, H 20, was admitted in error with a low STEP mathematics score and a GPA in mathematics below 2.0.

The summary of the disqualifying scores is presented in Table XVII. In all of the Colleges combined, there were 111 subjects with disqualifying scores. These 111 subjects had a total of 143 unacceptable scores.

TABLE XVI

SUBJECTS WITH DISQUALIFYING SCORES AND SUBJECTS WITH NO SPEECH SCORES IN THE COLLEGE OF HOME ECONOMICS

Subject Code Number	Speech	Essay	Total GPA	STEP Writing	STEP Mathe-matics	STEP Social Studies	STEP Science
*H 05e				x			
H 12e	x						
*H 16s						x	
H 19s			x				
E H 20s					x		
*H 23s				x			
*H 24s							x
H 33s			x				
**H 38s	x						
H 42e		x					
H 46s	x	x					
H 50s		x		x			
*H 54s				x			
H 59s					x		
Totals	3	3	2	4	2	1	1

** No speech score
* Admitted to Teacher Education
E Admitted in error with a low STEP score

Suffixes added to subject code numbers:

e - elementary
s - secondary
g - general

TABLE XVII

SUMMARY OF DISQUALIFYING SCORES INCLUDING NO SPEECH SCORES

College	Speech	Essay	Total GPA	STEP Writing	STEP Mathematics	STEP Social Studies	STEP Science	Total Number of Disqualifying Scores	Total Number of Subjects Involved
Agriculture	6	5	7	9	1	3	2	33	20
Arts and Sciences	7	3	9	9	3	3	2	36	24
Business			1		1			2	2
Education	10	9	19	20	6	8	3	75	51
Home Economics	3	3	2	4	2	1	1	16	14
Totals	*26	20	38	42	13	15	8	162	111

*This number includes 19 with no speech test scores.
5 in the College of Agriculture
7 in the College of Arts and Sciences
6 in the College of Education
1 in the College of Home Economics

Those students who apply for admission to the Teacher Education program and present satisfactory ratings on the speech proficiency test and the essay examination, total GPA's of 2.0 or above, and STEP scores at or above the 15th percentile in all areas of the STEP are admitted to the program. Those whose speech or essay ratings are unsatisfactory are rejected. Those with total GPA's below 2.0 are rejected. Those with STEP scores below the 15th percentile rank are rejected unless they have

GPA's at or above 2.0 in the areas of the low STEP scores. The GPA's in the areas may be used in lieu of the low STEP scores and the student may be admitted to Teacher Education.

Question one of the study was: Were subjects who had scores below the 15th percentile rank in any area of the STEP admitted to Teacher Education on the basis of GPA's at or above 2.0 in the areas of the low STEP scores?

The answer is yes, 21 subjects were admitted who had adequate GPA's in the areas of low STEP scores. Table XVIII presents these 21 subjects.

Three, 25.0 per cent, of the 12 subjects in the College of Agriculture who had low STEP scores were admitted on the basis of the GPA's in the areas of the low scores. In the College of Arts and Sciences, 13 had low STEP scores. Five, 38.5 per cent, of these had GPA's in the areas of the low scores high enough to permit the subjects to be admitted to Teacher Education. The one subject in the College of Business who had a low STEP score was admitted on the basis of the GPA in the area. Seven, 25.9 per cent, of the 27 in the College of Education who had low STEP scores were admitted on the basis of the GPA's in the areas of the low STEP scores. Eight in the College of Home Economics had low STEP scores. Five, 62.5 per cent, of these were admitted on the basis of the GPA's in the areas. Thirteen of the STEP scores which were cancelled by the GPA's were in writing, five were in mathematics, three were in social studies, and four were in science.

When average grades have been recognized as acceptable grades for those who are to be admitted to Teacher Education, then average grades in the areas measured by the STEP would appear to indicate acceptable

TABLE XVIII

SUBJECTS WHO WERE ADMITTED TO TEACHER EDUCATION ON THE BASIS OF GPA'S IN THE AREAS OF LOW STEP SCORES

Subject Code Number	Low STEP Scores Which Were Cancelled by GPA's			
	Writing	Mathematics	Social Studies	Science
A 22s	x			x
A 23s			x	
A 28s	x			
S 02g	x			
S 05s	x			
S 68s	x			
S 84g		x		
S 86s	x			
B 21s		x		
E 07s	x	x		
E 27e				x
E 32s	x			
E 80e		x	x	x
E106e		x		
E146s	x			
E191s	x			
H 05e	x			
H 16s			x	
H 23s	x			
H 24s				x
H 54s	x			
Totals	13	5	3	4

Suffixes to subject code numbers indicate the kinds of certification sought.

e - elementary
s - secondary
g - general

levels of mastery of these areas. It seems reasonable, however, to assume that students who achieved below the 15th percentile on the STEP in any area probably did not really have a mastery of that area at the time of the test. There are many reasons why STEP scores may be below the cut-off point while the GPA's in the areas are average. The STEP might not be measuring the same knowledges and skills as those which were the bases for the GPA's. Grading peculiarities may influence the GPA's so that they do not represent the same levels of mastery as do the STEP scores. The students may not have really mastered the learnings and so have forgotten them at the time of the STEP. Any one of these reasons or all of them might have existed. The fact remained that low STEP scores indicated that at the time of the test the student appeared to not have a mastery of the knowledges and skills measured by the test. If these knowledges and skills are considered necessary for those who enter the teaching profession, then perhaps average grades in course work completed prior to the STEP test should not be accepted in lieu of the unacceptable STEP scores. Consideration might be given to requiring above average GPA's in course work completed prior to the STEP for admission to Teacher Education when low STEP scores exist. GPA's of 2.5 or 3.0 to cancel low STEP scores might be more desirable than the present 2.0. A student with STEP scores below the 15th percentile probably needs additional basic knowledges and a higher level of development of academic skills. Raising the GPA level for admission for those with low STEP scores would be a move toward assuring that the student would take additional courses in certain areas thereby acquiring additional needed learnings.

A few subjects were admitted to Teacher Education with disqualifying

scores which had not been cancelled by GPA's. Table XIX shows these subjects who were admitted in error. Two subjects in the College of Agriculture were admitted with low STEP scores. One of the two had a low STEP writing score which was not cancelled by the GPA in the area. The other was admitted on the basis of an incorrect STEP science score. The score reported to the College by the Bureau of Tests and Measurements was incorrect. One subject in the College of Arts and Sciences was admitted with a total GPA below 2.0. One subject in the College of Education was admitted on the basis of an incorrect STEP writing score, which was reported to that College. In the College of Home Economics one subject was admitted with a low STEP mathematics score which was not cancelled by the GPA in the area.

TABLE XIX

SUBJECTS ADMITTED WITH DISQUALIFYING SCORES

Subject Code Number	Disqualifying Scores			
	Total GPA	STEP Writing	STEP Mathematics	STEP Science
A 05		x		
*A 28				x
S 13	x			
*E 18		x		
H 20			x	

*The STEP score reported to the College was incorrect

Attention has been called to incorrect STEP scores reported to the Colleges by the Bureau of Tests and Measurements. Only two of the incorrect scores permitted subjects with low scores on the STEP to be admitted to Teacher Education. No incorrect score caused a subject to be rejected in error. There were, as Table XX shows, a number of errors in the list of STEP scores received by the Colleges. A total of 35 incorrect scores was reported. Five of these were in the College of Agriculture, 10 in the College of Arts and Sciences, five in the College of Business, 13 in the College of Education, and two in the College of Home Economics.

TABLE XX

INCORRECT STEP SCORES REPORTED TO THE COLLEGES

College	Writing	Mathematics	Social Studies	Science
Agriculture	1	2	1	1
Arts and Sciences	2		2	6
Business		1	1	3
Education	3	8		2
Home Economics		2		
Totals	6	13	4	12

For this research the Bureau of Tests and Measurements assisted the researcher in correcting the incorrect scores which had been

reported.

The combinations of disqualifying scores for those subjects who were rejected for Teacher Education are presented in Table XXI. Of the 75 subjects who were rejected, 59 were rejected on the basis of a single criterion. Eleven were rejected on the basis of two criteria, three had unsatisfactory scores on three criteria, one had unsatisfactory scores on four criteria, and one had disqualifying scores on five criteria. More subjects were rejected on the basis of total GPA's as the only disqualifying factor than were rejected by any other single factor or combination of factors. The second most frequent cause for rejection was "no speech scores", and the third most frequent single cause for rejection was the unsatisfactory rating on the essay examination.

Twenty-two subjects had no applications for admission to Teacher Education on file (Table VI, p. 51). The combinations of disqualifying scores obtained by these subjects are presented in Table XXII.

Eleven of the 22 subjects who had no applications for admission on file were included in the 111 subjects who had disqualifying scores. These subjects were: E 47, E 54, E 89, E115, E123, E163, E190, E192, E203, E204, and H 42. The other eleven of the 22 subjects with no applications on file had no disqualifying scores. Two had low STEP writing scores which would have been cancelled by the GPA in English. Four had no speech ratings as the only disqualifying factors.

Only one subject, E122, may have been rejected in error. The only disqualifying score for E122 was the social studies score on the STEP. The subject was rejected even though the GPA in the area was above 2.0.

TABLE XXI

UNCANCELLED DISQUALIFYING SCORES OF THOSE SUBJECTS WHO WERE REJECTED FOR TEACHER EDUCATION

Uncancelled Disqualifying Scores	College of Agriculture	College of Arts and Sciences	College of Business	College of Education	College of Home Economics	Totals
No Speech score	3	6			1	10
Speech	1			2	1	4
Essay	2	1		5	1	9
Total GPA	2	5	1	14	2	24
STEP Writing	1			2		3
STEP Mathematics				2	1	3
STEP Social Studies	1	1		3		5
STEP Science		1				1
No Speech and Total GPA	2	1				3
Speech and Essay					1	1
Essay and Total GPA	1					1
Essay and STEP Writing	1	1				2
Essay and STEP Social Studies				1		1
Total GPA and STEP Writing	1			2		3
Essay, Total GPA, and STEP Writing	1			1		2
Total GPA, STEP Social Studies, and STEP Science				1		1
Total GPA, STEP Mathematics, STEP Social Studies, and STEP Science		1				1
Essay, Total GPA, STEP Writing, STEP Mathematics, and STEP Social Studies		1				1
Totals	16	18	1	33	7	75

TABLE XXII

DISQUALIFYING SCORES OF SUBJECTS WHO HAD NO APPLICATIONS ON FILE

Disqualifying Scores	Colleges		
	Business	Education	Home Economics
No Disqualifying scores	3	8	
No Speech Rating		4	
Speech		1	
Essay			1
Total GPA		1	
*STEP Writing		1	
No Speech Rating and STEP Writing		1	
Speech and Essay Ratings		1	
No Speech, Essay Rating, STEP Writing (*), and STEP Social Studies		1	
Totals	3	18	1

* Cancelled by the English GPA

Studies of Ranges, Means, Standard Deviations, and Correlations of Admission Criteria and ACT Scores

The IBM Computer System at the Computer Center at Oklahoma State University was used for most of the computation for the statistical studies.

STEP scores, essay examination ratings, and total GPA's were available for all of the subjects in the sample. ACT scores were not

available for all subjects. Some of the subjects had not taken courses in some of the areas measured by the STEP so had no GPA's in these areas. Those subjects without ACT scores and those subjects without credit hours attempted in an area were eliminated from the statistical computations involving these scores. Table XXIII shows the N's used for the statistical studies of the different variables in the different Colleges.

The means and standard deviations were computed for all scores and GPA's. The means and standard deviations for the total GPA's are presented in Table XXIV. The means of the total GPA's ranged from 2.29 in the College of Agriculture to 2.79 in the College of Arts and Sciences. The standard deviations ranged from .41 in the College of Agriculture to .59 in the College of Arts and Sciences.

The ranges, means, and standard deviations were computed for the GPA's in English, mathematics, social sciences, and science. These statistical findings are presented in Table XXV.

The English mean GPA's ranged from 2.19 in the College of Agriculture to 2.78 in the College of Arts and Sciences. In mathematics the mean GPA's ranged from 2.32 in the College of Agricutlrue to 2.89 in the College of Business. The mean GPA's in the social sciences ranged from 2.26 in the College of Agriculture to 2.63 in the College of Arts and Sciences. The mean GPA's in science ranged from 1.92 in the College of Agriculture to 2.55 in the College of Business.

The standard deviations of the English GPA's ranged from .67 in the College of Agriculture to .82 in the College of Arts and Sciences. In mathematics the standard deviations ranged from .84 in the College of Home Economics to .99 in the Colleges of Agriculture and Education.

TABLE XXIII

THE NUMBER OF SUBJECTS WITH ACT SCORES AND THE NUMBER WITH CREDIT HOURS ATTEMPTED IN ENGLISH, MATHEMATICS, SOCIAL SCIENCES, AND SCIENCE

College	Total N	ACT N	English N	Mathe-matics N	Social Sciences N	Science N
Agriculture	33	30	33	31	32	33
Arts and Sciences	92	86	92	73	90	88
Business	24	20	24	21	24	22
Education	220	200	220	168	216	216
Home Economics	59	55	58	14	52	59
Totals	428	391	427	307	414	418

TABLE XXIV

RANGES, MEANS, AND STANDARD DEVIATIONS OF THE TOTAL GPA'S IN ALL OF THE COLLEGES

College	N	Range	Mean	Standard Deviation
Agriculture	33	1.40-3.13	2.29	.41
Arts and Sciences	92	1.62-3.91	2.79	.59
Business	24	1.82-3.99	2.69	.48
Education	220	0.92-4.00	2.65	.57
Home Economics	59	1.87-3.76	2.70	.47

TABLE XXV

RANGES, MEANS, AND STANDARD DEVIATIONS OF THE ENGLISH, MATHEMATICS SOCIAL SCIENCES, AND SCIENCE GPA'S BY COLLEGES

	College of Agriculture	College of Arts and Sciences	College of Business	College of Education	College of Home Economics
English					
Number	33	92	24	220	58
Range	1.00-4.00	0.37-4.00	1.50-4.00	0.00-4.00	1.00-4.00
Mean	2.19	2.78	2.71	2.62	2.73
S. D.	.67	.82	.76	.76	.71
Mathematics					
Number	31	73	21	168	14
Range	1.00-4.00	0.00-4.00	0.62-4.00	0.00-4.00	1.00-4.00
Mean	2.32	2.52	2.89	2.56	2.54
S. D.	.99	.98	.89	.99	.84
Social Sciences					
Number	32	90	24	216	52
Range	1.00-3.50	0.75-4.00	1.40-4.00	0.36-4.00	0.83-4.00
Mean	2.26	2.63	2.37	2.35	2.48
S. D.	.68	.83	.58	.77	.71
Science					
Number	33	88	22	216	59
Range	1.09-3.00	0.00-4.00	1.50-4.00	0.00-4.00	0.89-4.00
Mean	1.92	2.53	2.55	2.37	2.38
S. D.	.50	.91	.68	.82	.73

S. D. is Standard Deviation

The range in social sciences was from .58 in Business to .83 in Arts and Sciences. In science the standard deviations ranged from .50 in the College of Agriculture to .91 in the College of Arts and Sciences.

Means and standard deviations were computed for the raw scores of the STEP. These statistical findings and the ranges of the scores on the STEP are presented in Table XXVI.

The means of the STEP writing raw scores ranged from 34.52 in the College of Agriculture to 41.96 in the College of Business. In mathematics raw score means ranged from 24.76 in Home Economics to 27.54 in Arts and Sciences. The means of the raw scores on the STEP social studies test ranged from 38.45 in Agriculture to 46.76 in Arts and Sciences. The College of Agriculture had the highest mean raw score on the STEP science test, 33.94 and the College of Business the lowest, 31.37.

The standard deviations of the STEP writing raw scores ranged from 3.96 in the College of Business to 6.74 in the College of Education. In mathematics the standard deviation which showed the least dispersion was in the College of Home Economics, 5.43, while the standard deviation which showed the greatest dispersion was 7.15 in the College of Arts and Sciences. The least dispersion of the social studies raw scores on the STEP was in the College of Business with a standard deviation of 5.54 and the greatest dispersion was in the College of Arts and Sciences with a standard deviation of 9.25. The standard deviation of 5.38 in the College of Home Economics for the STEP science raw scores showed the least dispersion of science scores and the standard deviation of 7.41 in science in the College of Arts and Sciences showed the greatest dispersion.

TABLE XXVI

RANGES, MEANS, AND STANDARD DEVIATIONS
OF THE RAW SCORES ON THE STEP

	College of Agriculture	College of Arts and Sciences	College of Business	College of Education	College of Home Economics
Writing					
Number	33	92	24	220	59
Range	22-47	23-53	34-49	19-54	24-51
Mean	34.52	40.73	41.96	39.47	38.59
S. D.	6.59	6.49	3.96	6.74	6.01
Mathematics					
Number	33	92	24	220	59
Range	15-43	12-54	15-40	7-41	14-41
Mean	25.48	27.54	26.92	26.48	24.76
S. D.	6.49	7.15	6.25	5.93	5.43
Social Studies					
Number	33	92	24	220	59
Range	27-52	20-65	34-51	20-68	27-59
Mean	38.45	46.76	41.04	43.65	40.90
S. D.	7.48	9.25	5.54	8.67	7.36
Science					
Number	33	92	24	220	59
Range	20-44	14-52	24-46	18-51	18-43
Mean	33.94	33.82	31.37	32.31	31.86
S. D.	5.91	7.41	5.88	6.31	5.38

S. D. is Standard Deviation

The ACT was taken by the subjects during their senior year in high school. Tests in the ACT included the same areas of knowledges and skills as the subtests of the STEP: English, mathematics, social studies, and science. ACT scores are reported in standard scores which range from one to 36. The ranges, means, and standard deviations for those subjects for whom ACT scores were available in the different Colleges are presented in Table XXVII.

The ranges of the mean standard scores on the ACT were as follows: English from 16.57 in Agriculture to 21.75 in Business, mathematics from 16.80 in Agriculture to 21.00 in Arts and Sciences, social studies from 15.73 in Agriculture to 22.56 in Arts and Sciences, science from 16.83 in Agriculture to 22.15 in Arts and Sciences, and composite from 16.63 in Agriculture to 21.99 in Arts and Sciences.

The ranges of the standard deviations on the ACT were as follows: English from 3.54 in the College of Business to 4.99 in the College of Agriculture, mathematics from 5.10 in Education to 5.97 in Business, social studies from 4.89 in Arts and Sciences to 5.22 in Agriculture, science from 4.69 in Agriculture to 5.58 in Arts and Sciences, and the composite from 3.70 in Home Economics to 4.34 in Agriculture.

The means of the ACT scores, the STEP scores, and the GPA's were examined. On the ACT and the STEP the College of Agriculture had the lowest mean scores in all areas except the mathematics and science scores on the STEP. The science score was in first position and the mathematics score in fourth position. The College of Home Economics had the next to the lowest mean scores in all areas of the ACT and the STEP except the ACT social studies and the STEP mathematics mean scores. The social studies score was in third position and the

TABLE XXVII

RANGES, MEANS, AND STANDARD DEVIATIONS OF THE STANDARD SCORES OF THE ACT

	College of Agriculture	College of Arts and Sciences	College of Business	College of Education	College of Home Economics
English (N)	30	86	20	200	55
Range	6-26	6-28	16-29	7-31	7-30
Mean	16.57	21.64	21.75	20.58	20.40
S. D.	4.99	4.77	3.54	4.53	4.19
Mathematics (N)	30	86	20	200	55
Range	6-29	8-32	6-30	7-33	8-34
Mean	16.80	21.00	19.30	19.54	18.13
S. D.	5.60	5.43	5.97	5.10	5.30
Social Studies (N)	30	86	20	200	55
Range	7-29	10-32	7-28	7-32	10-29
Mean	15.73	22.56	18.95	20.41	19.73
S. D.	5.22	4.89	4.99	5.07	4.97
Science (N)	30	86	20	200	55
Range	9-25	5-32	11-27	6-32	6-29
Mean	16.83	22.15	20.35	20.86	19.93
S. D.	4.69	5.58	4.74	5.32	4.73
Composite (N)	30	86	20	200	55
Range	9-26	10-30	13-28	10-29	9-26
Mean	16.63	21.99	20.20	20.48	19.71
S. D.	4.34	4.23	3.78	3.80	3.70

S. D. in Standard Deviation

mathematics mean score was in fifth position. The College of Education was in second position in all areas of the ACT except English. The ACT English mean score was in third position. This College was in third position in all areas of the STEP except social studies, which was in second position. The College of Arts and Sciences was in first position in all areas of the ACT except English. This College was in second position in ACT English. The STEP mean scores showed the College of Arts and Sciences in first position in mathematics and social studies and in second position in English and science. The College of Business was first in English on both tests, second in STEP mathematics and in third, fourth, or fifth position in the other areas of the two tests.

The mean GPA's showed the College of Agriculture in the lowest position in all areas. The College of Arts and Sciences had the highest mean GPA's in English and social sciences. The mean mathematics GPA of this College was fourth and the science mean GPA was second. The College of Education was in second position on most of the ACT tests, third position on most of the STEP tests, and fourth position on most of the GPA's. Only the mathematics mean GPA was not in fourth position. This mean GPA was in second position. The College of Business was in third place in English and social studies GPA's and in first place in mathematics and science. The Colleges of Business and Agriculture reversed positions on the GPA and STEP mean scores in science. On the science GPA the College of Business was first with the College of Agriculture fifth. On the STEP science the College of Business was fifth and the College of Agriculture first.

The apparent inconsistency in the position of the College of Agriculture among the Colleges in the various measures of the knowledges

and skills in the area of science suggests that further study is needed in this area. Why did the subjects in this College who had the lowest mean ACT standard score in science and the lowest mean GPA in science, achieve the highest mean STEP raw score in this area? Did these subjects, at the time of the STEP, actually have greater ability to understand and use scientific knowledge? If this were the case, then why was the mean science GPA of the subjects in this College below that of all of the other Colleges? Perhaps the science curriculum for the students preparing to be teachers of agriculture needs to be restructured. Low GPA's in the area may have resulted from enrollment in courses without the necessary background. Low GPA's may have come about from grading peculiarities. The STEP test may not have measured the same knowledges and skills as were measured for the GPA's. Further study of these subjects in this area may be of value to the development of an adequate program of study for these subjects and for better preparation of teachers of agriculture.

Pearson product moment coefficients of correlation were computed for several of the variables in the study. Coefficients of correlation were computed between the GPA's, the STEP scores, and the ACT scores by the Computer Center at Oklahoma State University.

Question two of the study was: What were the correlations between the total GPA's and the STEP raw scores in writing, mathematics, social studies, and science? These correlations are shown in Table XXVIII.

All correlations between the STEP scores and the total GPA's were positive.

TABLE XXVIII

COEFFICIENTS OF CORRELATION BETWEEN THE SCORES ON THE SUBTESTS OF THE STEP AND THE TOTAL GPA'S

College	STEP Writing	STEP Mathematics	STEP Social Studies	STEP Science
Agriculture	* .38	** .51	.15	.10
Arts and Sciences	** .45	** .37	** .37	** .27
Business	.14	.34	** .56	* .46
Education	** .42	** .30	** .39	** .21
Home Economics	** .43	.19	** .36	** .33

* significant at the .05 level
** significant at the .01 level

The correlation between the science scores on the STEP and the total GPA's was the lowest correlation for the College of Agriculture. Neither this corelation nor the correlation in social studies was significant. The correlation with the mathematics scores was significant at the .01 level while the correlation with the writing scores was significant at the .05 level. In the College of Arts and Sciences, all correlations between the total GPA's and the STEP scores were significant at the .01 level. In the College of Business, only the social studies STEP scores had a correlation with the total GPA's significant at the .01 level. The correlation with the STEP writing score and the STEP mathematics score were not significant while the science correlation was significant at the .05 level. In the College of Education, the correlations between the STEP scores and the total GPA's were all

significant at the .01 level. The STEP writing, social studies, and science test scores had correlations with the total GPA's significant at the .01 level in the College of Home Economics. The correlation between the STEP mathematics scores and the total GPA's in the College of Home Economics was not significant.

Thirteen of the 20 correlations between the total GPA's and the scores on the STEP were significant at the .01 level, two were significant at the .05 level, and four were not significant. Four correlations in social studies were significant at the .01 level. Three correlations in each of the other three areas were significant at the .01 level. In STEP writing, social studies, and science one correlation was not significant, in mathematics two were not significant. One correlation in writing and one in science were significant at the .05 level.

Question three of the study was: What were the correlations between the total GPA's and the ACT standard scores in each area measured by the ACT?

There were no negative correlations between these two sets of variables. The correlations between the total GPA's and the ACT scores are presented in Table XXIX.

Ten of the correlations between the standard scores on the ACT and the total GPA's were significant at the .01 level, three at the .05 level, and seven were not significant. In the College of Agriculture, no correlation was significant. The only significant correlation in the College of Business was in mathematics. All of the correlations in the Colleges of Education and of Arts and Sciences were significant at the .01 level. The College of Home Economics had correlations significant

at the .01 level in English and mathematics and at the .05 level in social studies and science.

TABLE XXIX

COEFFICIENTS OF CORRELATION BETWEEN THE SCORES ON THE SUBTESTS OF THE ACT AND THE TOTAL GPA'S

College	ACT English	ACT Mathematics	ACT Social Studies	ACT Science
Agriculture	.21	.16	.20	.34
Arts and Sciences	** .36	** .55	** .51	** .40
Business	.34	* .54	.22	.34
Education	** .50	** .37	** .46	** .36
Home Economics	** .38	** .37	* .32	* .33

* significant at the .05 level
** significant at the .01 level

Question four of the study was: What were the correlations between the STEP raw scores and the GPA's in each area measured by the STEP? Some of the subjects had not taken courses in some of the areas measured by the STEP: English, mathematics, social sciences, and science (Table XXIII, p. 78). Those subjects without credit hours attempted in an area were eliminated from the computation of the correlations in that area. The correlations between the STEP raw scores and the GPA's in the areas measured by the STEP are presented in Table XXX.

TABLE XXX

COEFFICIENTS OF CORRELATION BETWEEN THE SCORES ON THE STEP AND THE GPA'S IN THE AREAS MEASURED BY THE STEP

College	English GPA	Mathematics GPA	Social Sciences GPA	Science GPA
Agriculture	* .41	.34	.25	.06
Arts and Sciences	** .50	* .28	** .53	** .31
Business	.11	.09	** .57	** .55
Education	** .46	** .27	** .40	** .20
Home Economics	* .29	.41	* .31	* .26

* significant at the .05 level
** significant at the .01 level

The correlations between the scores on the STEP and the GPA's in the areas measured by the STEP were all positive. Nine of the correlations were significant at the .01 level, five were significant at the .05 level, and six were not significant.

In English the College of Arts and Sciences and the College of Education had correlations between the English GPA's and the STEP writing scores significant at the .01 level. The English correlations for the College of Agriculture and the College of Home Economics were significant at the .05 level. The correlation between the English GPA's and the writing test scores of the STEP for the College of Business was not significant.

The correlations between the STEP mathematics score and the GPA's in that area were not significant for the Colleges of Agriculture,

Business, and Home Economics. The correlations in mathematics were significant at the .05 level for the College of Arts and Sciences and at the .01 level for the College of Education.

Three Colleges, Arts and Sciences, Business, and Education, had correlations significant at the .01 level between the STEP social studies scores and the GPA's in social sciences. The correlation for the College of Home Economics in this area was significant at the .05 level and for the College of Agriculture the correlation was not significant.

The correlations in science were significant at the .01 level in the Colleges of Arts and Sciences, Business, and Education. They were not significant in the College of Agriculture and were significant at the .05 level in the College of Home Economics.

In the College of Agriculture there was only one significant correlation between the STEP scores and the GPA's in the areas measured by the STEP. This correlation was significant at the .05 level and was in the area of English. All correlations between the STEP scores and the GPA's in the areas for the College of Education were significant at the .01 level.

Question five of the study was: What were the correlations between the ACT standard scores and the GPA's in each of the areas measured by the ACT? A number of the subjects did not have ACT scores available and some of the subjects had not taken courses in the areas measured by the ACT. These subjects were eliminated from the computation of the correlations. The correlations between the ACT standard scores and the GPA's in the areas measured by the ACT are shown in Table XXXI. The N's for the correlations are given in the Table.

TABLE XXXI

COEFFICIENTS OF CORRELATION BETWEEN THE SCORES ON THE ACT AND THE GPA'S IN THE AREAS MEASURED BY THE ACT

College	English GPA			Mathematics GPA			Social Sciences GPA			Science GPA		
	N		r	N		r	N		r	N		r
Agriculture	30	*	.45	29		-.003	29		.27	30		.04
Arts and Sciences	86	**	.40	68	**	.49	84	**	.52	82	**	.25
Business	20		.40	17		.35	20		.25	18		.31
Education	200	**	.51	154	**	.39	196	**	.49	199	**	.29
Home Economics	54	**	.48	13	*	.64	48		.19	55	*	.29

* significant at the .05 level
** significant at the .01 level

All correlations between the scores on the ACT and the GPA's in the areas measured by the ACT were positive except the correlation in mathematics in the College of Agriculture. This correlation was negative but was not significant. All of the correlations between the ACT scores and the GPA's in the areas measured by the ACT in the College of Arts and Sciences and the College of Education were significant at the .01 level. The correlations in these Colleges in social studies were highly significant. The correlation between the ACT scores and the GPA's in English in the College of Education was highly significant at the .01 level. The correlation in the area of English in the College of Agriculture was significant at the .05 level. In the area of mathematics the correlation in the College of Home Economics was significant at the .05 level

while the correlations in the Colleges of Business and Agriculture were not significant. An N of 54 in the College of Home Economics for the English correlation and an N of 13 for the mathematics correlation make the levels of significance of these two correlations appear inconsistent. In the area of social studies the Colleges of Agriculture, Business, and Home Economics had correlations which were not significant. In science the College of Agriculture had a very low correlation which was not significant. The College of Business had a science correlation which was not significant. The correlation between the ACT score and the GPA's in science in the College of Home Economics was significant at the .05 level.

Question six of the study was: What were the correlations between the raw scores on the STEP and the standard scores on the ACT in each area? These correlations are presented in Table XXXII.

TABLE XXXII

COEFFICIENTS OF CORRELATION BETWEEN THE SCORES ON THE STEP AND THE SCORES ON THE ACT

College	ACT English	ACT Mathematics	ACT Social Studies	ACT Science
Agriculture	** .69	** .63	** .63	** .50
Arts and Sciences	** .67	** .70	** .62	** .60
Business	* .45	** .71	** .68	** .77
Education	** .72	** .65	** .63	** .50
Home Economics	** .56	** .58	** .69	** .44

* significant at the .05 level
** significant at the .01 level

All correlations between the STEP scores and the ACT scores were positive and were significant. The correlation between the STEP writing scores and the ACT English scores for the College of Business was the only correlation significant at the .05 level. All other correlations between the scores on the STEP and the scores on the ACT were significant at the .01 level.

Question seven of the study was: What were the correlations between the ACT composite scores and the total GPA's? The correlations were computed by using the formula for computing the Pearson r from the original data (40, p. 97).

$$r_{xy} = \frac{N\Sigma XY - (\Sigma X)(\Sigma Y)}{\sqrt{[N\Sigma X^2 - (\Sigma X)^2][N\Sigma Y^2 - (\Sigma Y)^2}}$$

The correlations between the total GPA's and the ACT Composite scores are presented in Table XXXIII. These correlations for the Colleges of Arts and Science, Education, and Home Economics were significant at the .01 level. The correlation between the total GPA's and the ACT composite standard scores for the College of Business was significant at the .05 level. The correlation for the College of Agriculture was not significant.

Question eight of the study was: What were the correlations between the ratings on the essay examination and each of the following: total GPA's, English GPA's, and the raw scores on the writing test of the STEP?

Table VIII, page 54, shows the number in each College who had satisfactory ratings on the essay and the number who had unsatisfactory ratings on the essay. Since one subject in the College of Home

Economics had no credit hours in English, this N for computation of the correlation between the essay ratings and the English GPA's was 58. Point biserial correlation was used to determine the coefficients of correlation between the essay examination ratings and the total GPA's, the English GPA's, and the STEP writing scores (40, p. 322).

$$r_{pbi} = \frac{M_p - M_q}{\sigma_t} \sqrt{pq}.$$

TABLE XXXIII

COEFFICIENTS OF CORRELATION BETWEEN THE TOTAL GPA'S AND THE ACT COMPOSITE SCORES

College	N	ACT Composite
Agriculture	30	.27
Arts and Sciences	86	** .55
Business	20	* .49
Education	220	** .54
Home Economics	55	** .44

* significant at the .05 level
** significant at the .01 level

The correlations between the essay ratings and the total GPA's, the English GPA's, and the STEP writing scores are shown in Table XXXIV.

TABLE XXXIV

COEFFICIENTS OF CORRELATION BETWEEN THE RATINGS ON THE ESSAY EXAMINATION AND THE TOTAL GPA'S, ENGLISH GPA'S, AND STEP WRITING SCORES

College	Total GPA	English GPA	STEP Writing
Agriculture	.28	.22	.34
Arts and Sciences	.16	** .37	** .42
Business	--	--	--
Education	.10	* .16	** .31
Home Economics	.16	.24	.10

* significant at the .05 level
** significant at the .01 level
-- No calculation of correlation

The correlation between the ratings on the essay examination and the English GPA's was significant at the .01 level in the College of Arts and Sciences. The correlations between the essay ratings and the STEP writing raw scores were significant at the .01 level in the College of Arts and Sciences and the College of Education. The correlation between the ratings on the essay examination and the English GPA's in the College of Education was significant at the .05 level. Since the College of Business had no unsatisfactory ratings on the essay examinations correlations for this College were not computed. All other correlations between the ratings on the essay examination and the total GPA's, the English GPA's, and the STEP writing raw scores were positive, but were low and were not significant.

Studies of the Bivariate Relationships Between the Admissions Criteria for Individual Subjects

Several criteria are involved in the admission of each student to the Teacher Education program. The study was concerned with the relationships which existed between some of these criteria.

A number of subjects failed to complete the procedures necessary for admission to Teacher Education. Some failed to file an application form for admission to the program. Some failed to take the speech test. Some failed to meet either of these requirements. These two procedures must be initiated by the students. Procrastination may have been a factor. Some of those who did not complete the application form may have been in academic difficulty and so did not apply for admission. The question was then raised, what kind of academic achievement were the subjects making who failed to complete the admissions procedures?

Figure 1 shows that only one of the 22 subjects who failed to file the application form had a total GPA below 2.00. One had a total GPA between 3.50 and 3.99. Two had GPA's of 3.00 to 3.49. Thirteen of the 22 with no application on file had GPA's of 2.50 or above. Three of the 19 who failed to take the speech test had total GPA's below 2.0. Four had total GPA's of 3.5 or above. The median total GPA of these groups who failed to complete admissions procedures was between 2.5 and 2.9.

The total GPA's of the subjects who failed to file the application form and of the subjects who failed to take the speech tests, were not the GPA's that might have been expected from students who procrastinated about their school work. While failure to complete the procedures does show procrastination, academic failure did not appear to have been a

Areas of Failure to Complete Procedures
for Admission to Teacher Education

Total GPA	Failed to File Application for Admission	Failed to Take Speech Test	Failed to File Application and Failed to Take Speech Test
4.00 -			
3.50 - 3.99	E190	S 08 S 30 S 31 S 54	
3.00 - 3.49	E 57 E 59	S 32	
2.50 - 2.99	B 07 E 33 E 35 E 55 E 66 E110 E163	A 06 S 51 H 38	E115 E203 E204
2.00 - 2.49	B 09 E 31 H 42 B 16 E192	A 01 A 31	E 47 E 54 E 89
1.50 - 1.99	B123	A 15 S 90 A 29	

Figure 1. The Total GPA's of Subjects in All of the Colleges Paired With the Areas of Failure to Complete Procedures for Admission to Teacher Education

cause of the procrastination. Other factors seemed to have been involved.

Table XXXV shows the bivariate relationships between the ratings on the essay examination and the total GPA's for all of the Colleges. Five subjects in the College of Agriculture were rejected on the basis of the essay examination. Seven were rejected on the basis of the total GPA's. Only two were rejected on the basis of both the essay rating and the total GPA. In the College of Arts and Sciences, three subjects had unsatisfactory ratings on the essay while nine had total GPA's below 2.0. Only one of the nine was among the three with unsatisfactory essay ratings. In the College of Business there were no unsatisfactory essay ratings and only one low total GPA. Nine subjects in the College of Education had unsatisfactory ratings on the essay examination, 19 had total GPA's below 2.0. Of the 26 subjects involved only one was rejected on the basis of both the essay rating and the total GPA. Three subjects in the College of Home Economics were rejected on the basis of the essay ratings and two on the basis of the total GPA's. No subject in this College was rejected on the basis of both scores. When all Colleges were considered, only four of the 20 rejected on the basis of the essay ratings were among the 38 rejected on the basis of the total GPA's. So, of the total of 54 rejected on the basis of the essay ratings and of the total GPA's only four were rejected on the basis of both factors.

Question nine of the study was: Were the subjects who were rejected on the basis of the ratings on the essay examination the same subjects who were rejected on the basis of total GPA's? The bivariate distribution of these two factors would seem to indicate that the answer to question nine was no. Subjects rejected on the basis of the total

GPA's were usually not the same subjects as those who were rejected on the basis of the essay ratings. Only 10.53 per cent of those rejected by the total GPA's were rejected by the essay ratings, while 20 per cent of those rejected by the essay ratings were rejected by the total GPA's.

TABLE XXXV

SATISFACTORY AND UNSATISFACTORY RATINGS ON THE ESSAY EXAMINATION AS THEY RELATED TO THE TOTAL GPA'S IN ALL OF THE COLLEGES

Total GPA's	Unsatisfactory						Satisfactory					
	Agriculture	Arts and Sciences	Business	Education	Home Economics	Total	Agriculture	Arts and Sciences	Business	Education	Home Economics	Total
4.00 -										1		1
3.50 - 3.99				1		1		13	1	18	3	35
3.00 - 3.49							1	25	4	45	16	91
2.50 - 2.99	1	1		1		3	8	22	11	49	17	107
2.00 - 2.49	2	1		6	3	12	14	21	7	80	18	140
1.50 - 1.99	1	1		1		3	4	8	1	16	2	31
1.00 - 1.49	1					1	1			1		2
0.50 - 0.99										1		1
0.00 - 0.49												
Totals	5	3		9	3	20	28	89	24	211	56	408

The essay examination did not appear to be measuring what ever it

was that determined academic grades. It could have been that the criteria for determining whether the essays were satisfactory or unsatisfactory did not reflect the grading practices used in the academic program. Grades in the course work may have been based on the results from objective tests and those skills necessary for writing an essay may not have affected the grades involved in the total GPA's.

The question was raised whether or not the low GPA's in English were more likely than the total GPA's to identify the same subjects as the unsatisfactory ratings on the essay examination? Table XXXVI shows the bivariate distribution of the ratings on the essay examination and the GPA's in English.

Twelve in the College of Agriculture had English GPA's below 2.00. Among these were three of the five who had unsatisfactory essay ratings. In the College of Arts and Sciences two of the three rejected on the basis of the essay ratings were among the seven with English GPA's below 2.00. Only two of the nine with unsatisfactory essay ratings in the College of Education were in the group of 29 in that College who had low English GPA's. None of the three rejected on the basis of essay ratings in the College of Home Economics had low English GPA's.

There was a total of 53 subjects with English GPA's below 2.00. Seven, 13.21 per cent, of these had unsatisfactory essay ratings. This was a little higher than the 10.53 per cent who had both low total GPA's and unsatisfactory ratings on the essay examination. The seven with both unsatisfactory essay ratings and low English GPA's were 35 per cent of those with unsatisfactory essay ratings.

TABLE XXXVI

SATISFACTORY AND UNSATISFACTORY RATINGS ON THE ESSAY EXAMINATION AS THEY RELATED TO THE ENGLISH GPA'S IN ALL OF THE COLLEGES

English GPA's	Unsatisfactory						Satisfactory					
	Agriculture	Arts and Sciences	Business	Education	Home Economics	Total	Agriculture	Arts and Sciences	Business	Education	Home Economics	Total
4.00 -							1	11	4	16	6	38
3.50 - 3.99							1	11		18	4	34
3.00 - 3.49				1		1	2	26	9	58	19	114
2.50 - 2.99				1		1	5	11		36	8	60
2.00 - 2.49	2	1		5	3	11	10	25	10	56	15	116
1.50 - 1.99	2					2	5	1	1	20	2	29
1.00 - 1.49	1	1		2		4	4	4		3	1	12
0.50 - 0.99										3		3
0.00 - 0.49		1				1				1		1
No Hours Attempted											1	1
Totals	5	3		9	3	20	28	89	24	211	56	408

Question ten of the study was: Were the subjects who were rejected on the basis of the ratings on the essay examination the same subjects who had GPA's below 2.00 in English? When only seven of the 53 with low

English GPA's were rejected on the basis of the essay ratings, the answer to the question should probably be usually not. Those with English GPA's below 2.00 were usually not rejected on the basis of the essay ratings.

Subject A 24, one of the two in the College of Agriculture who were rejected on the basis of both the total GPA's and the ratings on the essay examinations, was one of the three in this College who had unsatisfactory essay ratings who also had low English GPA's. In the College of Arts and Sciences subject S 46, the only subject rejected on the basis of both the total GPA and the essay ratings, was one of the two with unsatisfactory essay ratings who also had English GPA's below 2.00. The only subject in the College of Education who was rejected on the basis of both essay rating and total GPA, subject E189, was one of the two in the College of Education with unsatisfactory ratings on the essay examination who also had low English GPA's. No subject in either the College of Business or the College of Home Economics had low scores in all three factors: the essay rating, the total GPA, and the English GPA.

The STEP writing subtest measures English usage. Would this test be more successful in identifying those subjects with unsatisfactory ratings on the essay examination than were the total GPA's or the English GPA's? Table XXXVII shows the bivariate relationships between the STEP writing percentile ranks and the ratings on the essay examination.

TABLE XXXVII

SATISFACTORY AND UNSATISFACTORY RATINGS ON THE ESSAY EXAMINATION AS THEY RELATED TO THE WRITING SCORES ON THE STEP IN ALL OF THE COLLEGES

STEP Writing Percentile Rank	Unsatisfactory						Satisfactory					
	Agriculture	Arts and Sciences	Business	Education	Home Economics	Total	Agriculture	Arts and Sciences	Business	Education	Home Economics	Total
95 -								9	1	19	4	33
85 - 94					1	1	2	10	4	20	4	40
75 - 84							1	24	5	33	7	70
65 - 74				1		1	4	14	5	27	6	56
55 - 64							2	7	4	34	6	53
45 - 54	1			1		2	4	9	4	19	10	46
35 - 44				1	1	2	3	3		19	6	31
25 - 34							5	6	1	16	7	35
15 - 24	1					1	1	1		10	3	15
5 - 14	3	3		5	1	12	5	6		13	3	27
0 - 4				1		1	1			1		2
Totals	5	3		9	3	20	28	89	24	211	56	408

In the College of Agriculture nine subjects had STEP writing scores below the 15th percentile. Three of these had unsatisfactory ratings on the essay examination. Two others with unsatisfactory essay ratings

were not identified by the STEP. In the College of Arts and Sciences all three with unsatisfactory essay ratings were among the nine with STEP writing scores below the 15th percentile. Six of the nine in the College of Education who had unsatisfactory essay ratings were among the 20 rejected on the basis of the STEP writing scores. In the College of Home Economics one of the three with unacceptable essay ratings was among the four with STEP writing scores below the 15th percentile.

Question eleven of the study was: Were the subjects who were rejected on the basis of the ratings on the essay examination the same subjects who had scores below the 15th percentile rank on the STEP writing subtest?

The STEP writing test identified almost two-thirds, 65 per cent, of the subjects rejected by the essay ratings. This was better than the 35 per cent identified by the English GPA's or the 20 per cent identified by the total GPA's. Almost one-third, 30.95 per cent, of those with low STEP scores had unsatisfactory essay ratings.

Figure 2 shows that .93 per cent of the 428 subjects in the sample had total GPA's below 2.0 and unsatisfactory essay examination ratings also. One and sixty-four hundredths per cent had both low English GPA's and unsatisfactory essay ratings. Of the 428 subjects, 3.04 per cent had both unsatisfactory essay ratings and unacceptable STEP writing test scores. The writing subtest of the STEP was more likely to identify those subjects who had unsatisfactory essay test ratings than were either the total GPA's or the English GPA's.

		Ratings on the Essay Examination			
		Unsatisfactory		Satisfactory	
		N	%	N	%
Total GPA	2.00 and Above	16	3.74	374	87.38
	Below 2.00	4	.93	34	7.94
English GPA	2.00 and Above	13	3.04	362	84.58
	Below 2.00	7	1.64	46	10.75
STEP Writing	15th Percentile Rand and Above	7	1.64	379	88.55
	Below the 15th Percentile Rank	13	3.04	29	6.78

Figure 2. The Bivariate Relationships Between the Ratings on the Essay Examination and the Scores Above and Below the Cut-off Points in the Total GPA's, the English GPA's, and the Writing Test of the STEP for All Colleges

Table XXXVIII identifies those subjects who had unsatisfactory ratings on the essay examination and who also had unacceptable total GPA's, low English GPA's, and low STEP writing scores. Only four subjects with unsatisfactory essay ratings had low total GPA's. These were A 24, A 26, S 46, and E189. A 24, S 46, and E189 had low scores

in all of the areas, total GPA, English GPA, and STEP writing. A 10 and S 75 had low English GPA's and low STEP writing scores as well as the unsatisfactory essay rating. Eleven subjects with unsatisfactory essay ratings had unacceptable scores in only one of the areas shown in the Table.

TABLE XXXVIII

SUBJECTS WITH UNSATISFACTORY ESSAY RATINGS WHO HAD ONE OR MORE OF THE FOLLOWING: LOW TOTAL GPA'S, LOW ENGLISH GPA'S, AND LOW STEP WRITING SCORES

College	Low Total GPA's	Low English GPA's	Low STEP Writing Scores
Agriculture		A 02	
		A 10	A 10
	A 24	A 24	A 24
	A 26		
			A 32
Arts and Sciences	A 46	S 46	S 46
		S 75	S 75
			S 82
Business			
Education			E140
			E169
	E189	E189	E189
		E192	
			E204
			E213
			E217
Home Economics			H 50

The next concern of the study was whether subjects with low STEP

scores were the same subjects who had low total GPA's. Scattergrams were prepared showing the total GPA's paired with the scores on the STEP subtests.

Figure 3 shows the bivariate distribution of the total GPA's and percentile ranks on the STEP writing test for the College of Agriculture. Only two of the nine subjects in this College who were rejected on the basis of writing scores below the 15th percentile rank on the STEP were among the seven who were rejected on the basis of low total GPA's.

Total GPA	Percentile Ranks of STEP Writing Scores 0-14	15-19	30-44	45-59	60-74	75-89	90-104	
4.00 -								
3.50 - 3.99								
3.00 - 3.49					1			1
2.50 - 2.99	3		1	1	2		2	9
2.00 - 2.49	4	1	4	3	3	1		16
1.50 - 1.99	1	2	1	1				5
1.00 - 1.49	1		1					2
0.50 - 0.99								
0.00 - 0.49								
	9	3	7	5	6	1	2	33

Figure 3. Scattergram of the Paired Total GPA's and Percentile Ranks on the STEP Writing Test for the College of Agriculture

Figure 4 shows that nine subjects in the College of Arts and Sciences were rejected with low STEP writing scores. Three of these nine subjects with low STEP scores had low total GPA's also. Six other subjects in this College had total GPA's below 2.0, but had STEP scores in writing at or above the 15th percentile rank.

Total GPA	Percentile Ranks of STEP Writing Scores 0-14	15-29	30-44	45-59	60-74	75-89	90-104	
4.00 -								
3.50 - 3.99				2		3	8	13
3.00 - 3.49			1	4	9	8	3	25
2.50 - 2.99	2	3		3	5	5	5	23
2.00 - 2.49	4		3		6	8	1	22
1.50 - 1.99	3	1	2		1	1	1	9
1.00 - 1.49								
0.50 - 0.99								
0.00 - 0.49								
	9	4	6	9	21	25	18	92

Figure 4. Scattergram of the Paired Total GPA's and Percentile Ranks on the STEP Writing Test for the College of Arts and Sciences

The College of Business had no low STEP writing scores. The bivariate distribution of the STEP writing scores and the total GPA's for this College are presented in Figure 5. Only one subject had a low total GPA. This subject had a STEP writing score between the 60th and 75th percentile rank.

Total GPA	Percentile Ranks of STEP Writing Scores 0-14	15-29	30-44	45-59	60-74	75-89	90-104	
4.00 -								
3.50 - 3.99						1		1
3.00 - 3.49					1	1	2	4
2.50 - 2.99			1	3	5	1	1	11
2.00 - 2.49				1	2	2	2	7
1.50 - 1.99					1			1
1.00 - 1.49								
0.50 - 0.99								
0.00 - 0.49								
			1	4	9	5	5	24

Figure 5. Scattergram of the Paired Total GPA's and Percentile Ranks on the STEP Writing Test for the College of Business

In Figure 6 the bivariate distribution of the total GPA's and the percentile ranks on the writing test of the STEP are presented for the College of Education. Twenty subjects in this College were rejected on the basis of STEP writing scores. Nineteen were rejected on the basis of total GPA's below 2.00. Only five were rejected on the basis of both factors. Six with low STEP writing scores had total GPA's of 2.5 or above. Two of these six had total GPA's of 3.5 or above.

Total GPA	Percentile Ranks of STEP Writing Scores 0-14	15-19	30-44	45-59	60-74	75-89	90-104	
4.00 -							1	1
3.50 - 3.99	2	1	1	2	1	3	9	19
3.00 - 3.49	1		3	5	7	14	15	45
2.50 - 2.99	3	3	6	3	17	11	8	51
2.00 - 2.49	9	11	16	8	31	4	6	85
1.50 - 1.99	4	4	1	2	6			17
1.00 - 1.49						1		1
0.50 - 0.99	1							1
0.00 - 0.49								
	20	19	27	20	62	33	39	220

Figure 6. Scattergram of the Paired Total GPA's and Percentile Ranks on the STEP Writing Test for the College of Education

The scattergram of the paired total GPA's and the STEP writing percentile ranks for the College of Home Economics is presented in Figure 7. Two subjects in this College had total GPA's below 2.0. Four subjects had STEP writing scores below the 15th percentile. No subject had both a low total GPA and a low STEP writing score. One subject with a low STEP score had a total GPA of 3.0 or above.

Total GPA	Percentile Ranks of STEP Writing Scores 0-14	15-29	30-44	45-59	60-74	75-89	90-104	
4.00								
3.50 - 3.99				1		1	1	3
3.00 - 3.49	1	1	1	2	3	3	5	16
2.50 - 2.99		2	4	4	4	1	2	17
2.00 - 2.49	3	1	7	2	5	2	1	21
1.50 - 1.99			1	1				2
1.00 - 1.49								
0.50 - 0.99								
0.00 - 0.49								
	4	4	13	10	12	7	9	59

Figure 7. Scattergram of the Paired Total GPA's and Percentile Ranks on the STEP Writing Test for the College of Home Economics

Figure 8 shows that in all of the Colleges 42 subjects had disqualifying writing scores on the STEP. Ten, 23.81 per cent, of the 42 also had low total GPA's. The 10 were 26.32 per cent of the 38 with low total GPA's. There was a total of 70 different subjects with unacceptable scores in one or both of the two criteria. Ten, 14.29 per cent of the 70, were rejected on the basis of both criteria. Twelve with STEP scores below the 15th percentile had total GPA's at or above 2.5. Two of these were at or above 3.5. Eleven with total GPA's below 2.0 had STEP writing scores at or above the 60th percentile rank. One was at or above the 90th percentile rank.

Total GPA	Percentile Ranks of STEP Writing Scores 0-14	15-29	30-44	45-59	60-74	75-89	90-104	
4.00 -							1	1
3.50 - 3.99	2	1	1	5	1	8	18	36
3.00 - 3.49	2	1	5	11	21	26	25	91
2.50 - 2.99	8	8	12	14	33	18	18	111
2.00 - 2.49	20	13	30	14	47	17	10	151
1.50 - 1.99	8	7	5	4	8	1	1	34
1.00 - 1.49	1		1			1		3
0.50 - 0.99	1							1
0.00 - 0.49								
	42	30	54	48	110	71	73	428

Figure 8. Scattergram of the Paired Total GPA's and Percentile Ranks on the STEP Writing Test for All of the Colleges

The bivariate distribution of the total GPA's and the percentile ranks on the mathematics test of the STEP for the College of Agriculture is presented in Figure 9. Only one subject in this College had a STEP score below the 15th percentile rank. This subject had a total GPA of 2.00 or above. Seven subjects in this College had total GPA's below 2.00. Two of the seven had mathematics scores on the STEP at or above the 60th percentile.

Total GPA	Percentile Ranks of STEP Mathematics Scores 0-14	15-29	30-44	45-59	60-74	75-89	90-104	
4.00 -								
3.50 - 3.99								
3.00 - 3.49							1	1
2.50 - 2.99		1	2		2	3	1	9
2.00 - 2.49	1	1	6	3	4	1		16
1.50 - 1.99		2	1		1	1		5
1.00 - 1.49		1		1				2
0.50 - 0.99								
0.00 - 0.49								
	1	5	9	4	7	5	2	33

Figure 9. Scattergram of the Paired Total GPA's and Percentile Ranks on the STEP Mathematics Test for the College of Agriculture

In the College of Arts and Sciences, Figure 10 shows that nine subjects had total GPA's below 2.00. Two of the nine had scores on the mathematics test of the STEP below the 15th percentile rank. The only other subject in this College who had a disqualifying STEP score had a total GPA between 2.5 and 3.0.

Total GPA	Percentile Ranks of STEP Mathematics Scores 0-14	15-29	30-44	45-59	60-74	75-89	90-104	
4.00 -								
3.50 - 3.99			1	2	4	2	4	13
3.00 - 3.49		1	8	3	7	3	3	25
2.50 - 2.99	1	3	4	1	7	5	2	23
2.00 - 2.49			3	7	4	7	1	22
1.50 - 1.99	2	2	1	4				9
1.00 - 1.49								
0.50 - 0.99								
0.00 - 0.49								
	3	6	17	17	22	17	10	92

Figure 10. Scattergram of the Paired Total GPA's and Percentile Ranks on the STEP Mathematics Test for the College of Arts and Sciences

Figure 11 shows that only one subject in the College of Business had a total GPA below 2.0. This subject had a score on the mathematics test of the STEP between the 60th and the 75th percentile rank. The only subject in this College who had a STEP score in mathematics below the 15th percentile rank had a total GPA between 2.5 and 3.0. So no subject in the College of Business had both a low STEP score and a low total GPA.

Total GPA	Percentile Ranks of STEP Mathematics Scores							
	0-14	15-29	30-44	45-59	60-74	75-89	90-104	
4.00 -								
3.50 - 3.99						1		1
3.00 - 3.49		1				1	2	4
2.50 - 2.99	1	1	2	2	4	1		11
2.00 - 2.49			2	2	1	2		7
1.50 - 1.99					1			1
1.00 - 1.49								
0.50 - 0.99								
0.00 - 0.49								
	1	2	4	4	6	5	2	24

Figure 11. Scattergram of the Paired Total GPA's and Percentile Ranks on the STEP Mathematics Test for the College of Business

The bivariate distribution of the total GPA's and the percentile ranks on the mathematics test of the STEP for the College of Education is presented in Figure 12. In this College, 19 subjects had total GPA's below 2.0. Two of these had STEP scores above the 74th percentile. One of the 19 had a STEP score in mathematics below the 15th percentile. Five other subjects had STEP scores below the 15th percentile but had total GPA's at or above 2.0. One of the five had a total GPA between 3.0 and 3.5.

Total GPA	Percentile Ranks of STEP Mathematics Scores 0-14	15-29	30-44	45-59	60-74	75-89	90-104	
4.00 -					1			1
3.50 - 3.99			3	3	3	4	6	19
3.00 - 3.49	1	2	7	9	12	12	2	45
2.50 - 2.99	2	5	7	12	14	10	1	51
2.00 - 2.49	2	6	20	19	23	11	4	85
1.50 - 1.99	1	4	5	3	3	1		17
1.00 - 1.49						1		1
0.50 - 0.99			1					1
0.00 - 0.49								
	6	17	43	46	56	39	13	220

Figure 12. Scattergram of the Paired Total GPA's and Percentile Ranks on the STEP Mathematics Test for the College of Education

The scattergram of the paired total GPA's and the percentile ranks on the mathematics test of the STEP for the College of Home Economics is presented in Figure 13. This scattergram shows no subject in this College with both a total GPA below 2.0 and a STEP score in mathematics below the 15th percentile. Two subjects had low STEP scores but had total GPA's between 2.5 and 3.0. Two subjects had low total GPA's. One of these had a STEP score betwen the 30th and 45th percentile, while the other had a STEP score between the 60th and 75th percentile.

Total GPA	Percentile Ranks of STEP Mathematics Scores 0-14	15-29	30-44	45-59	60-74	75-89	90-104	
4.00 -								
3.50 - 3.99			1	1	1			3
3.00 - 3.49		1	3	3	6	3		16
2.50 - 2.99	2	3	3	6	2	1		17
2.00 - 2.49		4	7	4	2	3	1	21
1.50 - 1.99			1		1			2
1.00 - 1.49								
0.50 - 0.99								
0.00 - 0.49								
	2	8	15	14	12	7	1	59

Figure 13. Scattergram of the Paired Total GPA's and Percentile Ranks on the STEP Mathematics Test for the College of Home Economics

Figure 14 shows the paired total GPA's and percentile ranks on the mathematics test of the STEP for all of the Colleges. Thirteen subjects had mathematics scores on the STEP below the 15th percentile rank. Thirty-eight subjects had total GPA's below 2.0. Three of the 38 were among the 13 with low STEP scores. The three with low STEP scores and low total GPA's were 23.08 per cent of those with low mathematics scores on the STEP and 7.89 per cent of those with low total GPA's. A total of 48 subjects had disqualifying scores in the two variables. The three who had disqualifying scores on both variables were 6.25 per cent of the 48.

Total GPA	Percentile Ranks of STEP Mathematics Scores 0-14	15-29	30-44	45-59	60-74	75-89	90-104	
4.00 -					1			1
3.50 - 3.99			5	6	8	7	10	36
3.00 - 3.49	1	5	18	15	25	19	8	91
2.50 - 2.99	6	13	18	21	29	20	4	111
2.00 - 2.49	3	11	38	35	34	24	6	151
1.50 - 1.99	3	8	8	7	6	2		34
1.00 - 1.49		1		1		1		3
0.50 - 0.99			1					1
0.00 - 0.49								
	13	38	88	85	103	73	28	428

Figure 14. Scattergram of the Paired Total GPA's and Percentile Ranks on the STEP Mathematics Test for All of the Colleges

Figure 15 presents the paired total GPA's and percentile ranks on the social studies test of the STEP for the College of Agriculture. Seven subjects in this College had total GPA's below 2.0. Three subjects had STEP scores in social studies below the 15th percentile. No subject had a low STEP score and a low total GPA. Two subjects with total GPA's below 2.0 had social studies scores on the STEP above the 59th percentile rank.

Total GPA	Percentile Ranks of STEP Social Studies Scores 0-14	15-29	30-44	45-59	60-74	75-89	90-104	
4.00 -								
3.50 - 3.99								
3.00 - 3.49				1				1
2.50 - 2.99		1	1	4	1	2		9
2.00 - 2.49	3	3	5	1	1	3		16
1.50 - 1.99		1		2	1	1		5
1.00 - 1.49			2					2
0.50 - 0.99								
0.00 - 0.49								
	3	5	8	8	3	6		33

Figure 15. Scattergram of the Paired Total GPA's and Percentile Ranks on the STEP Social Studies Test for the College of Agriculture

In the College of Arts and Sciences, Figure 16 shows that nine subjects had total GPA's below 2.0. Seven of these had STEP scores in social studies above the 44th percentile. Two were above the 74th percentile. Three subjects in this College had STEP scores in social studies below the 15th percentile. Two of the three had low total GPA's also. One with a low STEP score had a total GPA between 2.5 and 3.0.

Total GPA	Percentile Ranks of STEP Social Studies Scores 0-14	15-29	30-44	45-59	60-74	75-89	90-104	
4.00 -								
3.50 - 3.99		1		1	2	1	8	13
3.00 - 3.49			3	2	2	8	10	25
2.50 - 2.99	1		4	3	5	5	5	23
2.00 - 2.49		1	3	4	4	6	4	22
1.50 - 1.99	2			1	4	2		9
1.00 - 1.49								
0.50 - 0.99								
0.00 - 0.49								
	3	2	10	11	17	22	27	92

Figure 16. Scattergram of the Paired Total GPA's and Percentile Ranks on the STEP Social Studies Test for the College of Arts and Sciences

Figure 17 presents the paired total GPA's and the percentile ranks of the social studies scores on the STEP for the College of Business. Only one subject in this College had a total GPA below 2.0. No subject in the College of Business had a score on the social studies test of the STEP below the 30th percentile rank.

Total GPA	Percentile Ranks of STEP Social Studies Scores							
	0-14	15-29	30-44	45-59	60-74	75-89	90-104	
4.00 -								
3.50 - 3.99						1		1
3.00 - 3.49			1			3		4
2.50 - 2.99			4	3	1	3		11
2.00 - 2.49			5	1		1		7
1.50 - 1.99			1					1
1.00 - 1.49								
0.50 - 0.99								
0.00 - 0.49								
			11	4	1	8		24

Figure 17. Scattergram of the Paired Total GPA's and Percentile Ranks on the STEP Social Studies Test for the College of Business

The scattergram of the paired total GPA's and percentile ranks of the social studies scores on the STEP for the College of Education is presented in Figure 18. Eight subjects are shown with social studies scores below the 15th percentile. Nineteen subjects had total GPA's below 2.0. Two of the 19 had STEP scores below the 15th percentile rank. One subject with a total GPA between .5 and .99 had a social studies score between the 30th and 44th percentile. Seven subjects with total GPA's below 2.0 had STEP scores above the 59th percentile rank. One subject with a total GPA between 1.0 and 1.49 had a STEP social studies score above the 89th percentile.

Total GPA	Percentile Ranks of STEP Social Studies Scores 0-14	15-29	30-44	45-59	60-74	75-89	90-104	
4.00 -							1	1
3.50 - 3.99			2	2		7	8	19
3.00 - 3.49		1	5	3	9	18	9	45
2.50 - 2.99		2	13	3	11	14	8	51
2.00 - 2.49	6	5	17	16	22	12	7	85
1.50 - 1.99	2	3	5	1	2	4		17
1.00 - 1.49							1	1
0.50 - 0.99			1					1
0.00 - 0.49								
	8	11	43	25	44	55	34	220

Figure 18. Scattergram of the Paired Total GPA's and Percentile Ranks on the STEP Social Studies Test for The College of Education

In Figure 19 the scattergram of the paired total GPA's and percentile ranks of the social studies test of the STEP for the College of Home Economics is presented. Only one subject in this College had a score on the STEP below the 15th percentile. This subject had a total GPA between 2.50 and 3.0. Two subjects in this College had total GPA's below 2.0. Neither of these two had a low score on the STEP social studies test.

Total GPA	Percentile Ranks of STEP Social Studies Scores 0-14	15-29	30-44	45-59	60-74	75-89	90-104	
4.00 -								
3.50 - 3.99					2		1	3
3.00 - 3.49		2	3	1	2	6	2	16
2.50 - 2.99	1		7	2	5	2		17
2.00 - 2.49		2	8	4	5	1	1	21
1.50 - 1.99		1	1					2
1.00 - 1.49								
0.50 - 0.99								
0.00 - 0.49								
	1	5	19	7	14	9	4	59

Figure 19. Scattergram of the Paired Total GPA's and Percentile Ranks on the STEP Social Studies Test for the College of Home Economics

The bivariate distribution of the total GPA's and the percentile ranks on the social studies test of the STEP for all of the Colleges is presented in Figure 20. Thirty-eight of the 428 subjects in the sample had total GPA's below 2.0. Fifteen subjects had scores on the social studies test of the STEP below the 15th percentile rank. Four subjects had both low scores on the STEP social studies test and total GPA's below 2.0. For all of the Colleges combined, 26.67 per cent of those rejected on the basis of the social studies scores on the STEP were also rejected on the basis of the total GPA's. The subjects rejected on the basis of both factors were 10.53 per cent of those rejected on the basis of the total GPA's.

Total GPA	Percentile Ranks of STEP Social Studies Scores 0-14	15-29	30-44	45-59	60-74	75-89	90-104	
4.00 -							1	1
3.50 - 3.99		1	2	3	4	9	17	36
3.00 - 3.49		3	12	7	13	35	21	91
2.50 - 2.99	2	3	29	15	23	26	13	111
2.00 - 2.49	9	11	38	26	32	23	12	151
1.50 - 1.99	4	5	7	4	7	7		34
1.00 - 1.49			2				1	3
0.50 - 0.99			1					1
0.00 - 0.49								
	15	23	91	55	79	100	65	428

Figure 20. Scattergram of the Paired Total GPA's and Percentile Ranks on the STEP Social Studies Test for All of the Colleges

The paired total GPA's and percentile ranks of the science test of the STEP for the College of Agriculture are presented in Figure 21. Seven subjects in this College had total GPA's below 2.0. Two of these seven had STEP science scores between the 59th and 75th percentile. One had a STEP science score above the 89th percentile. Two subjects had STEP science scores below the 15th percentile. Neither of these had a low total GPA.

Total GPA	Percentile Ranks of STEP Science Scores 0-14	15-29	30-44	45-59	60-74	75-89	90-104	
4.00 -								
3.50 - 3.99								
3.00 - 3.49						1		1
2.50 - 2.99	1			1	4	3		9
2.00 - 2.49	1	1	2	1	6	4	1	16
1.50 - 1.99			1	2	1		1	5
1.00 - 1.49				1	1			2
0.50 - 0.99								
0.00 - 0.49								
	2	1	3	5	12	8	2	33

Figure 21. Scattergram of the Paired Total GPA's and Percentile Ranks on the STEP Science Test for the College of Agriculture

Figure 22 shows the bivariate distribution of the total GPA's and percentile ranks on the science test of the STEP for the College of Arts and Sciences. Two subjects in this College had STEP science scores below the 15th percentile. One of these had a total GPA below 2.0. Eight other subjects in the College had total GPA's below 2.0. Six of these had science scores on the STEP above the 59th percentile.

Total GPA	Percentile Ranks of STEP Science Scores 0-14	15-29	30-44	45-59	60-74	75-89	90-104	
4.00 -								
3.50 - 3.99			1	3	1	3	5	13
3.00 - 3.49		1	4	4	10	4	2	25
2.50 - 2.99		4	4	6	4	3	2	23
2.00 - 2.49	1	3	2	5	4	2	5	22
1.50 - 1.99	1	2			4	2		9
1.00 - 1.49								
0.50 - 0.99								
0.00 - 0.49								
	2	10	11	18	23	14	14	92

Figure 22. Scattergram of the Paired Total GPA's and Percentile Ranks on the STEP Science Test for the College of Arts and Sciences

The STEP science percentile ranks for the College of Business are paired with the total GPA's in Figure 23. No subject in the College of Business had a STEP science score below the 15th percentile rank. Only one subject in this College had a total GPA below 2.0. This subject had a science score on the STEP above the 44 percentile rank.

Total GPA	Percentile Ranks of STEP Science Scores 0-14	15-29	30-44	45-59	60-74	75-89	90-104	
4.00 -								
3.50 - 3.99				1				1
3.00 - 3.49					2	1	1	4
2.50 - 2.99		4	1	2	4			11
2.00 - 2.49		3	1	1	2			7
1.50 - 1.99				1				1
1.00 - 1.49								
0.50 - 0.99								
0.00 - 0.49								
		7	2	5	8	1	1	24

Figure 23. Scattergram of the Paired Total GPA's and Percentile Ranks on the STEP Science Test for the College of Business

The total GPA's of the subjects in the College of Education are paired with the percentile ranks of the scores on the science test of the STEP in the scattergram in Figure 24. Three subjects in the College had STEP science scores below the 15th percentile. Only one of these had a total GPA below 2.0. Nineteen subjects in the College of Education had total GPA's below 2.0. Three of these had science scores above the 74th percentile rank.

Total GPA	Percentile Ranks of STEP Science Scores 0-14	15-29	30-44	45-59	60-74	75-89	90-104	
4.00 -						1		1
3.50 - 3.99			1	4	4	5	5	19
3.00 - 3.49		4	7	13	15	4	2	45
2.50 - 2.99	1	10	5	12	15	6	2	51
2.00 - 2.49	1	23	2	19	26	7	7	85
1.50 - 1.99	1	5	2	1	6	1	1	17
1.00 - 1.49							1	1
0.50 - 0.99				1				1
0.00 - 0.49								
	3	42	17	50	66	24	18	220

Figure 24. Scattergram of the Paired Total GPA's and Perecentile Ranks on the STEP Science Test for the College of Education

Figure 25 shows that the College of Home Economics had only one subject with a science score on the STEP below the 15th percentile. This subject had a total GPA between 2.5 and 3.0. Two subjects in this College had low total GPA's but acceptable STEP scores in science.

Total GPA	Percentile Ranks of STEP Science Scores 0-14	15-29	30-44	45-59	60-74	75-89	90-104	
4.00 -								
3.50 - 3.99			1	1	1			3
3.00 - 3.49		2		2	7	4	1	16
2.50 - 2.99	1	2	2	5	3	4		17
2.00 - 2.49		5	3	6	6	1		21
1.50 - 1.99			1	1				2
1.00 - 1.49								
0.50 - 0.99								
0.00 - 0.49								
	1	9	7	15	17	9	1	59

Figure 25. Scattergram of the Paired Total GPA's and Percentile Ranks on the STEP Science Test for the College of Home Economics

The scattergram of the paired total GPA's and the percentile ranks of the scores on the science test of the STEP for all of the subjects in all of the Colleges is presented in Figure 26. This scattergram shows

a total of eight subjects with science scores on the STEP below the 15th percentile. Thirty-eight subjects had total GPA's below 2.0. Only two subjects had both low total GPA's and low scores on the STEP science test. So, 25 per cent of the subjects who had low scores on the science test had low total GPA's also. The two subjects who had both low science scores and low total GPA's were 5.26 per cent of those who had low total GPA's. These two criteria usually did not identify the same subjects.

Total GPA	Percentile Ranks of STEP Science Scores 0-14	15-29	30-44	45-59	60-74	75-89	90-104	
4.00 -						1		1
3.50 - 3.99			3	9	6	8	10	36
3.00 - 3.49		7	11	19	34	14	6	91
2.50 - 2.99	3	20	12	26	30	16	4	111
2.00 - 2.49	3	35	10	32	44	14	13	151
1.50 - 1.99	2	7	4	5	11	3	2	34
1.00 - 1.49				1	1		1	3
0.50 - 0.99				1				1
0.00 - 0.49								
	8	69	40	93	126	56	36	428

Figure 26. Scattergram of the Paired Total GPA's and Percentile Ranks on the STEP Science Test for All of the Colleges

Question 12 of the study was: Were the subjects who were rejected on the basis of scores below the 15th percentile rank on the STEP the same subjects who were rejected on the basis of the total GPA's?

Table XXXIX shows the subjects who had both low total GPA's and low scores on subtests of the STEP. Sixty-one subjects had a total of 78 scores which were below the 15th percentile on the STEP. Thirty-eight subjects had total GPA's below the cut-off point at 2.0. There were 19 cases in which a low total GPA was paired with an unacceptable STEP score. Examination of the scores of individual subjects revealed that these 19 cases of low scores in both areas involved only 11 different subjects. So while 19 cases appeared to be 50 per cent of the 38 cases with both low total GPA's and low STEP scores, actually, only 11 subjects, 28.95 per cent, of the 38 had low scores on both criteria. These 11 subjects were 18.03 per cent of the 61 with low scores on the STEP subtests. The Table shows that more subjects with total GPA's below 2.00 had low scores on the writing test of the STEP than in any other area measured by the STEP.

TABLE XXXIX

SUBJECTS WITH LOW TOTAL GPA'S WHO HAD LOW STEP SCORES

College	STEP Writing	STEP Mathematics	STEP Social Studies	STEP Science
Agriculture	A 08 A 24			
Arts and Sciences	S 03 S 07			
		S 20	S 20	S 20
	S 46	S 46	S 46	
Education	E 17 E 61 E102 E189 E201	E 61	E 61 E102	E 61

Question 13 was concerned with whether or not the subjects with scores below the 15th percentile on the STEP were the same subjects who had GPA's below 2.0 in the areas of the low scores. Figure 27 shows that 12 subjects in the College of Agriculture had English GPA's below 2.0. Five of these also had low scores on the writing test of the STEP. Four with low STEP writing scores had English GPA's above 2.0.

English GPA	Percentile Ranks of STEP Writing Scores 0-14	15-29	30-44	45-59	60-74	75-89	90-104	
4.00 -					1			1
3.50 - 3.99					1			1
3.00 - 3.49	1						1	2
2.50 - 2.99			2	2		1		5
2.00 - 2.49	3	1	3	1	3		1	12
1.50 - 1.99	4			2	1			7
1.00 - 1.49	1	2	2					5
0.50 - 0.99								
0.00 - 0.49								
No hours credit								
	9	3	7	5	6	1	2	33

Figure 27. Scattergram of the Paired STEP Writing Percentile Ranks and English GPA's in the College of Agriculture

The scattergram of the bivariate distribution of the STEP writing scores and the English GPA's in the College of Arts and Sciences is presented in Figure 28.

English GPA	Percentile Ranks of STEP Writing Scores 0-14	15-29	30-44	45-59	60-74	75-89	90-104	
4.00 -				2		4	5	11
3.50 - 3.99				1	3	4	3	11
3.00 - 3.49		1	1	3	9	6	6	26
2.50 - 2.99	2	1	2		1	2	3	11
2.00 - 2.49	5	1	1	3	7	9		26
1.50 - 1.99		1						1
1.00 - 1.49	1		2		1		1	5
0.50 - 0.99								
0.00 - 0.49	1							1
No hours credit								
	9	4	6	9	21	25	18	92

Figure 28. Scattergram of the Paired STEP Writing Percentile Ranks and English GPA's in the College of Arts and Sciences

In the College of Arts and Sciences, seven subjects had low English GPA's. Two of the seven had low STEP writing scores. Seven others who had low STEP scores in writing had English GPA's above 2.0.

Figure 29 shows that there were no low STEP scores in writing in the College of Business. Only one subject in this College had an English GPA below 2.0. This subject had a score on the writing test of the STEP above the 89th percentile.

English GPA	Percentile Ranks of STEP Writing Scores 0-14	15-29	30-44	45-59	60-74	75-89	90-104	
4.00 -			1			1	2	4
3.50 - 3.99								
3.00 - 3.49				1	4	2	2	9
2.50 - 2.99								
2.00 - 2.49				3	5	2		10
1.50 - 1.99							1	1
1.00 - 1.49								
0.50 - 0.99								
0.00 - 0.49								
No hours credit								
			1	4	9	5	5	24

Figure 29. Scattergram of the Paired STEP Writing Percentile Ranks and English GPA's in the College of Business

The scattergram of the paired percentile ranks of the scores on the writing test of the STEP and the English GPA's in the College of Education is presented in Figure 30.

English GPA	Percentile Ranks of STEP Writing Scores 0-14	15-29	30-44	45-59	60-74	75-89	90-104	
4.00 -		1	3	1		4	7	16
3.50 - 3.99		1	1	3	2	3	8	18
3.00 - 3.49	3	1	4	4	22	13	12	59
2.50 - 2.99	1	1	5	5	11	7	7	37
2.00 - 2.49	9	11	9	5	18	5	4	61
1.50 - 1.99	2	3	5	1	7	1	1	20
1.00 - 1.49	2			1	2			5
0.50 - 0.99	2	1						3
0.00 - 0.49	1							1
No hours credit								
	20	19	27	20	62	33	39	220

Figure 30. Scattergram of the Paired STEP Writing Percentile Ranks and English GPA's in the College of Education

Twenty-nine subjects in the College of Education had English GPA's below 2.0. Twenty had STEP writing scores below the 15th percentile. Seven had both low English GPA's and low STEP writing scores. Two with English GPA's below 2.0 had STEP scores in writing above the 74th percentile. Three with STEP writing scores below the 15th percentile had English GPA's above 2.9.

In the College of Home Economics, Figure 31 shows three subjects with low English GPA's and four subjects with low STEP writing scores.

English GPA	Percentile Ranks of STEP Writing Scores 0-14	15-29	30-44	45-59	60-74	75-89	90-104	
4.00 -				1	1	2	2	6
3.50 - 3.99				1		1	2	4
3.00 - 3.49	2	2	4	5	3	1	2	19
2.50 - 2.99			4		3		1	8
2.00 - 2.49	2	1	3	2	5	3	2	18
1.50 - 1.99			1	1				2
1.00 - 1.49		1						1
0.50 - 0.99								
0.00 - 0.49								
No hours credit			1					1
	4	4	13	10	12	7	9	59

Figure 31. Scattergram of the Paired STEP Writing Perecentile Ranks and English GPA's in the College of Home Economics

Two subjects in the College of Home Economics who had low STEP scores in writing had English GPA's above 2.9. The only subject in the study who had no credit hours of English attempted was in this College.

The scattergram of the paired percentile ranks of the scores on the writing test of the STEP and the English GPA's in all of the Colleges is presented in Figure 32.

English GPA	Percentile Ranks of STEP Writing Scores 0-14	15-29	30-44	45-59	60-74	75-89	90-104	
4.00 -		1	4	4	2	11	16	38
3.50 - 3.99		1	1	5	6	8	13	34
3.00 - 3.49	6	4	9	13	38	22	23	115
2.50 - 2.99	3	2	13	7	15	10	11	61
2.00 - 2.49	19	14	16	14	38	19	7	127
1.50 - 1.99	6	4	6	4	8	1	2	31
1.00 - 1.49	4	3	4	1	3		1	16
0.50 - 0.99	2	1						3
0.00 - 0.49	2							2
No hours credit			1					1
	42	30	54	48	110	71	73	428

Figure 32. Scattergram of the Paired STEP Writing Percentile Ranks and English GPA's in All of the Colleges

In all of the Colleges 42 subjects had STEP writing scores below the 15th percentile. Fifty-two subjects had English GPA's below 2.0. Fourteen had low scores on both English GPA's and STEP writing scores. Four with low English GPA's had STEP scores above the 74th percentile. Six subjects who had scores below the 15th percentile rank on the STEP writing test had English GPA's above 2.9. The 14 subjects who were identified as having inadequate skills in English by both the GPA's in English and the scores on the writing test of the STEP were 33.33

per cent of the 42 with low STEP writing scores. The 14 were 26.92 per cent of the 52 with low English GPA's. These percentages of successful identification by both measures were slightly higher than the percentages of successful identification by the bivariate factors, the total GPA's and the writing scores on the STEP.

Scattergrams showing the bivariate distributions of the percentile ranks of the scores on the mathematics test of the STEP and the GPA's in mathematics were prepared.

A total of 121 subjects had no hours of credit attempted in mathematics. Two of these were in the College of Agriculture, 19 were in the College of Arts and Sciences, three were in the College of Business, 52 were in the College of Education, and 45 were in the College of Home Economics.

The bivariate distribution of the percentile ranks of the scores on the mathematics test of the STEP and the GPA's in mathematics in the College of Agriculture is presented in Figure 33. One subject in this College had a STEP score below the 15th percentile. Seven subjects had GPA's in mathematics below 2.0. Two of the seven had STEP scores above the 59th percentile on the mathematics test. The two subjects in this College who had no credit hours attempted in mathematics had STEP scores above the 44th percentile rank.

Mathematics GPA	Percentile Ranks of STEP Mathematics Scores 0-14	15-29	30-44	45-59	60-74	75-89	90-104	
4.00 -		1			1	2	1	5
3.50 - 3.99								
3.00 - 3.49		1	2	1	2			6
2.50 - 2.99						1		1
2.00 - 2.49	1		6	1	2	1	1	12
1.50 - 1.99			1					1
1.00 - 1.49		3		1	1	1		6
0.50 - 0.99								
0.00 - 0.49								
No hours credit				1	1			2
	1	5	9	4	7	5	2	33

Figure 33. Scattergram of the Paired STEP Mathematics Percentile Ranks and Mathematics GPA's in the College of Agriculture

The bivariate distribution of the percentile ranks of the scores on the mathematics test of the STEP and the GPA's in mathematics for the College of Arts and Sciences is presented in Figure 34.

Mathematics GPA	Percentile Ranks of STEP Mathematics Scores 0-14	15-29	30-44	45-59	60-74	75-89	90-104	
4.00 -			2		3	3	4	12
3.50 - 3.99						1	1	2
3.00 - 3.49		1	4	2	7	4	1	19
2.50 - 2.99					1	3		4
2.00 - 2.49	1	1	2	4	8	3	2	21
1.50 - 1.99			1	2		1		4
1.00 - 1.49		1	1	2	2	2	2	10
0.50 - 0.99								
0.00 - 0.49				1				1
No hours credit	2	3	7	6	1			19
	3	6	17	17	22	17	10	92

Figure 34. Scattergram of the Paired STEP Mathematics Percentile Ranks and Mathematics GPA's in the College of Arts and Sciences

Three subjects in the College of Arts and Sciences had STEP mathematics scores below the 15th percentile rank. Two of the three had no credit hours attempted in mathematics. The fifteen subjects who had GPA's below 2.0 all had STEP scores above the 14th percentile. One subject had a low STEP score and a GPA above 1.99. No subject had both a low mathematics GPA and a low mathematics STEP score.

Figure 35 shows that only one subject in the College of Business had a score on the mathematics test of the STEP below the 15th

percentile. This subject's GPA in mathematics was between 2.5 and 2.9. The three with no mathematics hours attempted all had adequate STEP scores in mathematics. The only low mathematics GPA was between .49 and 1.0. The STEP score of this subject was above the 59th percentile.

Mathematics GPA	Percentile Ranks of STEP Mathematics Scores 0-14	15-29	30-44	45-59	60-74	75-89	90-104	
4.00 -			2	1		1	1	5
3.50 - 3.99						1		1
3.00 - 3.49		1	2	1	1	1	1	7
2.50 - 2.99	1				1			2
2.00 - 2.49				2	2	1		5
1.50 - 1.99								
1.00 - 1.49								
0.50 - 0.99					1			1
0.00 - 0.49								
No hours credit		1			1	1		3
	1	2	4	4	6	5	2	24

Figure 35. Scattergram of the Paired STEP Mathematics Percentile Ranks and Mathematics GPA's in the College of Business

In the College of Education, Figure 36 shows that there were six subjects with low STEP mathematics scores. Two of these had no credit hours attempted in mathematics. The other four had mathematics GPA's above 1.99. Twenty-seven subjects in this College had GPA's in mathematics below 2.0. None of these had a low STEP mathematics score.

Mathematics GPA	Percentile Ranks of STEP Mathematics Scores 0-14	15-29	30-44	45-59	60-74	75-89	90-104	
4.00 -		1	3	3	8	6	5	26
3.50 - 3.99		1	1	4	1	2	2	11
3.00 - 3.49		1	8	10	11	10	1	41
2.50 - 2.99			3	1	4	2	1	11
2.00 - 2.49	4	6	8	11	13	9	1	52
1.50 - 1.99		1	1	2	1	2	1	8
1.00 - 1.49		2	2	2	5	1		12
0.50 - 0.99					1			1
0.00 - 0.49			3	1	1	1		6
No hours credit	2	5	14	12	11	6	2	52
	6	17	43	46	56	39	13	220

Figure 36. Scattergram of the Paired STEP Mathematics Percentile Ranks and Mathematics GPA's in the College of Education

Forty-five subjects in the College of Home Economics had no credit hours attempted in mathematics. Two of these had low STEP scores in mathematics. Figure 37 shows that no other subject in this College had a low STEP score. Only one subject had a GPA in mathematics below 2.0. This subject had a STEP score between the 44th and the 60th percentile.

Mathematics GPA	Percentile Ranks of STEP Mathematics Scores 0-14	15-29	30-44	45-59	60-74	75-89	90-104	
4.00 -				1		1		2
3.50 - 3.99								
3.00 - 3.49		1		2			1	4
2.50 - 2.99						1		1
2.00 - 2.49		2	1	2	1			6
1.50 - 1.99								
1.00 - 1.49				1				1
0.50 - 0.99								
0.00 - 0.49								
No hours credit	2	5	14	8	11	5		45
	2	8	15	14	12	7	1	59

Figure 37. Scattergram of the Paired STEP Mathematics Percentile Ranks and Mathematics GPA's in the College of Home Economics

Figure 38 presents the scattergram of the paired STEP mathematics percentile ranks and GPA's in mathematics in all of the Colleges.

Mathematics GPA	Percentile Ranks of STEP Mathematics Scores 0-14	15-29	30-44	45-59	60-74	75-89	90-104	
4.00 -		2	7	5	12	13	11	50
3.50 - 3.99		1	1	4	1	4	3	14
3.00 - 3.49		5	16	16	21	15	4	77
2.50 - 2.99	1		3	1	6	7	1	19
2.00 - 2.49	6	9	17	20	26	14	4	96
1.50 - 1.99		1	3	4	1	3	1	13
1.00 - 1.49		6	3	6	8	4	2	29
0.50 - 0.99					2			2
0.00 - 0.49			3	2	1	1		7
No hours credit	6	14	35	27	25	12	2	121
	13	38	88	85	103	73	28	428

Figure 38. Scattergram of the Paired STEP Mathematics Percentile Ranks and Mathematics GPA's in All of the Colleges

A total of 13 subjects in all of the Colleges had low scores on the mathematics test of the STEP. Six of the 13 had no credit hours attempted in mathematics. Thirty-nine, 32.23 per cent of the 121 without credit hours in mathematics, had STEP mathematics scores above the

59th percentile. Fifty-one subjects in all of the Colleges had GPA's in mathematics below 2.0. None of these had a low STEP score. No subject in all of the Colleges had both a low mathematics GPA and a low STEP score in mathematics. The mathematics subtest of the STEP apparently was not measuring the knowledges and skills in mathematics which were used as the basis for determining the GPA's in mathematics.

Scattergrams were prepared showing the bivariate distribution of the percentile ranks of the social studies scores on the STEP and the GPA's in social sciences. A total of fourteen subjects did not have credit hours attempted in social sciences. One of these was in the College of Agriculture, two were in the College of Arts and Sciences, four were in the College of Education, and seven were in the College of Home Economics.

In Figure 39 the scattergram of the paired percentile ranks of the scores on the social studies test of the STEP and the GPA's in the social sciences for the College of Agriculture is presented. The one subject in this College who had no credit hours attempted in the social sciences had a STEP score in social studies below the 15th percentile. Eight subjects in this College had GPA's below 2.0 in the social sciences. None of the eight had a STEP score below the 15th percentile. Two of the eight had STEP scores above the 74th percentile rank in social studies. Two subjects in the College of Agriculture had STEP scores below the 15th percentile rank and had GPA's in the social sciences above 2.0.

Social Sciences GPA	Percentile Ranks of STEP Social Studies Scores 0-14	15-29	30-44	45-59	60-74	75-89	90-104	
4.00 -								
3.50 - 3.99				2				2
3.00 - 3.49			1	2	2	2		7
2.50 - 2.99						2		2
2.00 - 2.49	2	4	5	2				13
1.50 - 1.99				2		2		4
1.00 - 1.49		1	2		1			4
0.50 - 0.99								
0.00 - 0.49								
No hours credit	1							1
	3	5	8	8	3	6		33

Figure 39. Scattergram of the Paired STEP Social Studies Percentile Ranks and Social Sciences GPA's in the College of Agriculture

In the College of Arts and Sciences, Figure 40 shows that three subjects had scores on the social studies test of the STEP below the 15th percentile. All three of these had GPA's in the social sciences below 2.0. Thirteen other subjects had GPA's in the social sciences below 2.0 but had adequate STEP scores in social studies.

Social Sciences GPA	Percentile Ranks of STEP Social Studies Scores 0-14	15-29	30-44	45-59	60-74	75-89	90-104	
4.00 -		1			1	1	5	8
3.50 - 3.99					1	1	6	8
3.00 - 3.49			1	3	2	4	7	17
2.50 - 2.99			1		6	6	6	19
2.00 - 2.49			5	3	4	7	3	22
1.50 - 1.99	1		2	3	1	2		9
1.00 - 1.49	2	1		1	1			5
0.50 - 0.99				1	1			2
0.00 - 0.49								
No hours credit			1			1		2
	3	2	10	11	17	22	27	92

Figure 40. Scattergram of the Paired STEP Social Studies Percentile Ranks and Social Sciences GPA's in the College of Arts and Sciences

Figure 41 shows that no subject in the College of Business had a score below the 15th percentile rank on the social studies test of the STEP. Two subjects in this College had GPA's in the social sciences below 2.0, but had adequate STEP scores.

Social Sciences GPA	Percentile Ranks of STEP Social Studies Scores 0-14	15-29	30-44	45-59	60-74	75-89	90-104	
4.00 -						1		1
3.50 - 3.99						1		1
3.00 - 3.49								
2.50 - 2.99			1	3		4		8
2.00 - 2.49			8	1	1	2		12
1.50 - 1.99			1					1
1.00 - 1.49			1					1
0.50 - 0.99								
0.00 - 0.49								
No hours credit								
			11	4	1	8		24

Figure 41. Scattergram of the Paired STEP Social Studies Percentile Ranks and Social Sciences GPA's in the College of Business

The scattergram of the paired percentile ranks of the scores on the social studies test of the STEP and the GPA's in the social sciences for the College of Education is presented in Figure 42. Eight subjects in this College had STEP scores below the 15th percentile in social studies. Three of the eight had GPA's in the social sciences above 1.99. One of the eight had no credit hours attempted in the social sciences. The remaining four had GPA's below 2.0 as well as the low STEP scores. Fifty-three other subjects in this College had GPA's in the social

sciences below 2.0 but had adequate social studies scores on the STEP. Thirteen with low GPA's had STEP social studies scores above the 74th percentile rank. Three of these were above the 89th percentile rank.

Social Sciences GPA	Percentile Ranks of STEP Social Studies Scores 0-14	15-29	30-44	45-59	60-74	75-89	90-104	
4.00 -			1			6	4	11
3.50 - 3.99			1	2		2	1	6
3.00 - 3.49		1	8	1	11	12	12	45
2.50 - 2.99			6	4	7	11	5	33
2.00 - 2.49	3	3	13	9	14	14	8	64
1.50 - 1.99	3	3	6	4	7	6	3	32
1.00 - 1.49	1	3	7	4	4	3		22
0.50 - 0.99				1		1		2
0.00 - 0.49			1					1
No hours credit	1	1			1		1	4
	8	11	43	25	44	55	34	220

Figure 42. Scattergram of the Paired STEP Social Studies Percentile Ranks and Social Sciences GPA's in the College of Education

Figure 43 presents the scattergram of the bivariate distribution of the percentile ranks of the scores on the social studies test of the STEP and the GPA's in the social sciences for the College of Home Economics.

Social Sciences GPA	Percentile Ranks of STEP Social Studies Scores 0-14	15-29	30-44	45-59	60-74	75-89	90-104	
4.00 -					1	1		2
3.50 - 3.99		1				1	2	4
3.00 - 3.49	1	1	1		4	2	2	11
2.50 - 2.99			4	1	2	2		9
2.00 - 2.49		1	6	3	5	3		18
1.50 - 1.99			3	2				5
1.00 - 1.49					2			2
0.50 - 0.99			1					1
0.00 - 0.49								
No hours credit		2	4	1				7
	1	5	19	7	14	9	4	59

Figure 43. Scattergram of the Paired STEP Social Studies Percentile Ranks and Social Sciences GPA's in the College of Home Economics

Only one subject in the College of Home Economics had a STEP social studies score below the 15th percentile. This subject had a GPA in the

social sciences between 2.9 and 3.5. Eight other subjects in this College had social sciences GPA's below 2.0, but had adequate STEP scores in social studies.

Figure 44 presents the paired percentile ranks on the social studies test of the STEP and the social sciences GPA's for all Colleges.

Social Sciences GPA	Percentile Ranks of STEP Social Studies Scores 0-14	15-29	30-44	45-59	60-74	75-89	90-104	
4.00 -		1	1		2	9	9	22
3.50 - 3.99		1	1	4	1	5	9	21
3.00 - 3.49	1	2	11	6	19	20	21	80
2.50 - 2.99			12	8	15	25	11	71
2.00 - 2.49	5	8	37	18	24	26	11	129
1.50 - 1.99	4	3	12	11	8	10	3	51
1.00 - 1.49	3	5	10	5	8	3		34
0.50 - 0.99			1	2	1	1		5
0.00 - 0.49			1					1
No hours credit	2	3	5	1	1	1	1	14
	15	23	91	55	79	100	65	428

Figure 44. Scattergram of the Paired STEP Social Studies Percentile Ranks and Social Sciences GPA's in All of the Colleges

Fifteen subjects in all of the Colleges had scores on the social studies test of the STEP below the 15th percentile rank. Two of these subjects had no credit hours of social sciences attempted. Six of the 15 had GPA's in the social sciences above 2.0. The remaining seven with low STEP scores had GPA's in the social sciences below 2.0. Eighty-four subjects in the sample had adequate STEP scores in social studies but had GPA's in the social sciences below 2.0. Seventeen of the 84 had STEP scores above the 74th percentile rank in social studies. The seven identified by both the STEP score and the GPA as having inadequate knowledges and skills in social studies were 53.85 per cent of the 13 subjects with low STEP scores who had credit hours in the social sciences. The seven were 7.69 per cent of the 91 with low GPA's in the social sciences.

Scattergrams were prepared to show the bivariate distribution of the percentile ranks of the scores on the science test of the STEP and the GPA's in science for each of the Colleges.

Ten subjects had no credit hours attempted in science. Four of the 10 were in the College of Arts and Sciences, two were in the College of Business, and four were in the College of Education.

Figure 45 shows that 16 of the 33 subjects in the College of Agriculture had GPA's in science below 2.0. Nine of the sixteen had STEP science scores above the 59th percentile. Two of these nine had STEP science scores above the 89th percentile rank. Two subjects in this College had STEP scores below the 15th percentile rank. One of the two with low STEP scores had a GPA in science below 2.0. The other subject with the low STEP score had a GPA in science between 2.49 and 3.0.

Science GPA	Percentile Ranks of STEP Science Scores 0-14	15-29	30-44	45-59	60-74	75-89	90-104	
4.00 -								
3.50 - 3.99								
3.00 - 3.49					1			1
2.50 - 2.99	1				1			2
2.00 - 2.49			1	2	6	5		14
1.50 - 1.99	1		1		2	2	2	8
1.00 - 1.49		1	1	3	2	1		8
0.50 - 0.99								
0.00 - 0.49								
No hours credit								
	2	1	3	5	12	8	2	33

Figure 45. Scattergram of the Paired STEP Science Percentile Ranks and Science GPA's in the College of Agriculture

In the College of Arts and Sciences, Figure 46 shows two subjects with scores on the STEP science test below the 15th percentile. Twenty subjects in this College had GPA's in science below 2.0. One with a GPA between .49 and .99 had a science score on the STEP above the 89th percentile rank. Four other subjects with low science GPA's had STEP science scores above the 74th percentile. Both of the subjects who had STEP science scores below the 15th percentile rank had science GPA's

below 2.0. All four of the subjects who had no credit hours attempted in science had science scores on the STEP above the 14th percentile.

Science GPA	Percentile Ranks of STEP Science Scores 0-14	15-29	30-44	45-59	60-74	75-89	90-104	
4.00 -				2	1	1	2	6
3.50 - 3.99			1	1	3	4	3	12
3.00 - 3.49		3	2	2	2	1	2	12
2.50 - 2.99			3	2	9	3	2	19
2.00 - 2.49		3	2	6	4	1	3	19
1.50 - 1.99	1	2		3		2	1	9
1.00 - 1.49	1	1	1	1	4	1		9
0.50 - 0.99							1	1
0.00 - 0.49			1					1
No hours credit		1	1	1		1		4
	2	10	11	18	23	14	14	92

Figure 46. Scattergram of the Paired STEP Science Percentile Ranks and Science GPA's in the College of Arts and Sciences

Figure 47 shows that only one subject in the College of Business had a GPA in science below 2.0. No subject in this College had a score below the 15th percentile on the science test of the STEP. The

two subjects in the College of Business who had no hours of science credit attempted had adequate STEP scores.

Science GPA	Percentile Ranks of STEP Science Scores 0-14	15-29	30-44	45-59	60-74	75-89	90-104	
4.00 -				1			1	2
3.50 - 3.99								
3.00 - 3.49		1			4	1		6
2.50 - 2.99		1	1	2				4
2.00 - 2.49		4	1	1	3			9
1.50 - 1.99				1				1
1.00 - 1.49								
0.50 - 0.99								
0.00 - 0.49								
No hours credit		1			1			2
		7	2	5	8	1	1	24

Figure 47. Scattergram of the Paired STEP Science Percentile Ranks and Science GPA's in the College of Business

The bivariate distribution of the percentile ranks on the STEP science test and the GPA's in science for the subjects in the College of Education is presented in Figure 48. Three subjects in this College had science STEP scores below the 15th percentile rank. Only one of the

three had a GPA in science below 2.0. Fifty-two subjects in the College of Education had science GPA's below 2.0. Nine with science GPA's below 2.0 had science scores on the STEP above the 74 percentile. Four of the nine had STEP science scores above the 89th percentile. The four subjects with no credit hours in science all had science scores on the STEP above the 59th percentile.

Science GPA	Percentile Ranks of STEP Science Scores 0-14	15-29	30-44	45-59	60-74	75-89	90-104	
4.00 -		1		2	1	1	4	9
3.50 - 3.99			1	3	4	5	1	14
3.00 - 3.49		4	6	12	14	4	2	42
2.50 - 2.99	1	6	3	12	11	5	1	39
2.00 - 2.49	1	14	4	14	17	5	5	60
1.50 - 1.99		9	2	3	5	2	3	24
1.00 - 1.49	1	7	1	2	8	2		21
0.50 - 0.99				1	3		1	5
0.00 - 0.49		1		1				2
No hours credit					3		1	4
	3	42	17	50	66	24	18	220

Figure 48. Scattergram of the Paired STEP Science Percentile Ranks and Science GPA's in the College of Education

The scattergram of the paired percentile ranks of the science scores on the STEP and the GPA's in science in the College of Home Economics is presented in Figure 49. In the College of Home Economics only one subject had a STEP science score below the 15th percentile rank. The science GPA of this subject was between 2.49 and 2.99. Fourteen subjects had science GPA's below 2.0; none of these had a low STEP science score.

Science GPA	Percentile Ranks of STEP Science Scores 0-14	15-29	30-44	45-59	60-74	75-89	90-104	
4.00 -					1			1
3.50 - 3.99		1	1		1			3
3.00 - 3.49		1		3	4	2	1	11
2.50 - 2.99	1	1	1	2	2	5		12
2.00 - 2.49		3	2	5	6	2		18
1.50 - 1.99		2	2	1	2			7
1.00 - 1.49		1	1	3	1			6
0.50 - 0.99				1				1
0.00 - 0.49								
No credit hours								
	1	9	7	15	17	9	1	59

Figure 49. Scattergram of the Paired STEP Science Percentile Ranks and Science GPA's in the College of Home Economics

Figure 50 presents the scattergram of the paired percentile ranks of the science scores of the STEP and the GPA's in science for all of the Colleges.

Science GPA	Percentile Ranks of STEP Science Scores 0-14	15-29	30-44	45-59	60-74	75-89	90-104	
4.00 -		1		5	3	2	7	18
3.50 - 3.99		1	3	4	8	9	4	29
3.00 - 3.49		9	8	17	25	8	5	72
2.50 - 2.99	3	8	8	18	23	13	3	76
2.00 - 2.49	1	24	10	28	36	13	8	120
1.50 - 1.99	2	13	5	8	9	6	6	49
1.00 - 1.49	2	10	4	9	15	4		44
0.50 - 0.99				2	3		2	7
0.00 - 0.49		1	1	1				3
No hours credit		2	1	1	4	1	1	10
	8	69	40	93	126	56	36	428

Figure 50. Scattergram of the Paired STEP Science Percentile Ranks and Science GPA's in All of the Colleges

In the area of science, 103 had GPA's below 2.0 in all of the Colleges. Only four of these had scores below the 15th percentile on the science subtest of the STEP. These four were 50 per cent of the

eight who had STEP scores below the 15th percentile on the STEP. Eighteen of the 103 with low GPA's in science had STEP scores in science at or above the 75th percentile. Forty-nine, 47.57 per cent of the 103, had STEP science scores at or above the 50th percentile rank.

Question 13 of the study was: Were the subjects with scores below the 15th percentile on the STEP the same subjects who had GPA's below 2.0 in the areas of the low STEP scores?

The answer to the question varied with the area. In all areas there were many more subjects with low GPA's than there were subjects with low scores on the STEP. Many subjects with low GPA's had STEP scores in the third and fourth quartiles.

In English (Figure 32, p. 138), 52 subjects had GPA's below 2.0 while 42 had low STEP scores. Fourteen had low scores in both measures. These fourteen were 26.92 per cent of those with low GPA's and 33.33 per cent of those with low scores on the STEP writing test. The answer to question 13 for the field of English might be that a number of subjects with low GPA's were identified by the STEP.

None of the 51 subjects with low GPA's in mathematics had scores below the 15th percentile on the mathematics test of the STEP (Figure 38, p. 145). There were thirteen subjects who had low scores on the STEP but none of these had low GPA's in mathematics. For the area of mathematics, the answer to question 13 was no, the subjects with scores below the 15th percentile on the STEP were not the subjects with GPA's below 2.0 in mathematics.

Ninety-one subjects had GPA's below 2.0 in the social sciences and 15 had scores on the STEP social studies subtest below the 15th percentile (Figure 44, p. 152). The seven who had low scores on both

measures were 7.69 per cent of those who had low GPA's and 53.85 per cent of the 13 with credit hours attempted in social sciences who had low scores on the STEP. The STEP did not seem to identify those subjects who had low GPA's in the social sciences.

One-hundred-three subjects had low GPA's in science while only eight had low STEP scores (Figure 50, p. 159). Four subjects had low scores in both measures. The four were 3.88 per cent of those with low science GPA's. In the area of science the answer to question 13 was that the subjects with low GPA's in science were usually not the subjects with low STEP scores in science.

The summary of the findings from the studies of the bivariate relationships between the ratings on the essay examination, the GPA's, and the percentile ranks of the scores on the STEP writing test is presented in Table XL. The data for this table were summarized from Tables XXXV-XXXVII and Figures 3-50.

Table XL shows that a total of 54 subjects had disqualifying scores on both the essay examinations and the total GPA's. Only 7.4 per cent of the 54 had low scores on both variables. Sixty-six subjects had low scores on the essay examinations and the English GPA's. Ten and six-tenths per cent of the 66 had low scores on both. Twenty-six and five-tenths per cent of the 49 with low scores on the essay examination and the STEP writing test had low scores on both of these variables. The essay examination and the writing test of the STEP identified more of the same subjects as having inadequate knowledges and skills in the area of language usage than did either the total GPA's or the English GPA's with the essay examination.

Fourteen and three-tenths per cent of the 70 who had disqualifying

TABLE XL

SUMMARY OF THE FINDINGS FROM THE STUDIES OF THE BIVARIATE RELATIONSHIPS BETWEEN THE RATINGS ON THE ESSAY EXAMINATION, THE GPA'S, AND THE PERCENTILE RANKS OF THE SCORES ON THE STEP

Table	Figure	First Variable	Second Variable	N With Disqualifying Scores on the First Variable Only	N With Disqualifying Scores on the Second Variable Only	N With Disqualifying Scores on Both Variables	Total N With Disqualifying Scores	% of Total N With Disqualifying Scores On Both Variables
XXXV		1	2	16	34	4	54	7.4
XXXVI		1	3	13	46	7	66	10.6
XXXVII		1	7	7	29	13	49	26.5
	8	2	7	28	32	10	70	14.3
	14	2	8	35	10	3	48	6.2
	20	2	9	34	11	4	49	8.2
	26	2	10	36	6	2	44	4.5
	32	3	7	38	28	14	80	17.5
	38	4	8	51	7	0	58	0.0
	44	5	9	84	6	7	97	7.2
	50	6	10	99	4	4	107	3.7

Variables:

1. Essay Examination
2. Total GPA's
3. English GPA's
4. Mathematics GPA's
5. Social Studies GPA's
6. Science GPA's
7. STEP Writing
8. STEP Mathematics
9. STEP Social Studies
10. STEP Science

scores on the total GPA's and in STEP writing had low scores in both of these measures. Six and two-tenths per cent of the 48 with low total GPA's and low scores on the mathematics test of the STEP had disqualifying scores in both criteria. Forty-nine subjects had low scores in the total GPA's and the STEP social studies test combined. Eight and two-tenths per cent of the 49 had low scores in both measures. The total GPA's and the STEP science test identified 44 different subjects with inadequate knowledges and skills. Four and five-tenths per cent of the 44 had low scores in both measures. The STEP writing test identified more of the subjects who had low total GPA's than did the STEP mathematics test, the STEP social studies test, or the STEP science test.

When the number of the subjects with low STEP scores in each of the four areas measured by the STEP was added to the number of subjects who had GPA's below 2.0 in the areas, more subjects were identified as having inadequate knowledges and skills in science than in any other area. In science 107 subjects had low scores, only 3.7 per cent of these had both low GPA's in science and low STEP scores in science. In social studies 7.2 per cent of the total of 97 identified as having inadequate knowledges and skills had both low GPA's in social sciences and low STEP scores on the social studies test. None of the 58 subjects identified by the mathematics GPA's and the mathematics test of the STEP had low scores on both of these measures. In English 17.5 per cent of the 80 subjects with low scores had both low GPA's in English and low scores on the writing test of the STEP. The STEP writing test was more successful in identifying subjects with low GPA's in English than were the other three STEP tests in identifying subjects with low GPA's in their respective areas.

The GPA's in the areas measured by the STEP were not criteria for admission to Teacher Education. Since subjects with low STEP scores could be admitted on the basis of GPA's at or above 2.0 in the areas of the low STEP scores the GPA's in the areas in a number of cases provided the deciding factor in determining if the subjects would be admitted or rejected. Many subjects with low GPA's in the four academic areas which were the concern of the study were admitted to Teacher Education on the basis of STEP scores in the areas at or above the 15th percentile.

Tables were prepared to show the subjects with low STEP scores in each area and the subjects with low GPA's in each area. Table XLI shows that 23 subjects had low GPA's in the College of Agriculture while 12 had low STEP scores. Eleven subjects had low GPA's in only one area, six had low GPA's in two areas, four had low GPA's in three areas, and two had low GPA's in all four areas. Seven of the 11 in the College of Agriculture who had low GPA's in one area were admitted to Teacher Education. Two of the six with low GPA's in two areas and one of the four with low GPA's in three areas were also admitted.

There were 16 subjects with low science GPA's, eight with low GPA's in social sciences, seven with low GPA's in mathematics, and 12 with low GPA's in English.

Table XLII shows that 15 of the 20 subjects in the College of Arts and Sciences who had low GPA's in only one area were admitted to Teacher Education. Thirteen subjects in this College had low GPA's in two areas; nine of the 13 were admitted. One of the four who had low GPA's in three areas was admitted.

TABLE XLI

SUBJECTS IN THE COLLEGE OF AGRICULTURE WHO HAD LOW STEP SCORES AND SUBJECTS WHO HAD LOW GPA'S IN THE AREAS MEASURED BY THE STEP

Subject Code Number	STEP Writing	English GPA	STEP Mathematics	Mathematics GPA	STEP Social Studies	Social Sciences GPA	STEP Science	Science GPA
A 01		x						
A 02		x	x					x
A 04		x				x		x
*A 05	x	x						
*A 07								x
A 08	x	x		x				x
*A 09								x
A 10	x	x			x			
*A 12				x				x
*A 14						x		
A 15						x		x
A 16					x			x
A 18		x		x		x		x
*A 19		x						
*A 20				x				x
*A 22	x						x	
*A 23		x			x			
A 24	x	x		x		x		x
A 26				x		x		x
A 27	x							
*A 28	x						x	x
A 29						x		x
*A 30		x				x		x
A 32	x			x				
A 33	x	x						x

*Admitted to Teacher Education

Seven in the College of Arts and Sciences had low English GPA's; 15 had low GPA's in mathematics; 16 had low GPA's in the social sciences; and 20 had GPA's in science.

TABLE XLII

SUBJECTS IN THE COLLEGE OF ARTS AND SCIENCES WHO HAD LOW STEP SCORES AND SUBJECTS WHO HAD LOW GPA'S IN THE AREAS MEASURED BY THE STEP

Subject Code Number	STEP Writing	English GPA	STEP Mathematics	Mathematics GPA	STEP Social Studies	Social Sciences GPA	STEP Science	Science GPA
*S 01				x				
*S 02	x					x		x
S 03	x			x		x		x
*S 04		x						x
*S 05	x			x		x		
S 06				x		x		x
S 07	x			x				x
*S 09						x		
*S 10				x				x
*S 11				x				
*S 12				x				x
*S 13				x		x		x
*S 18						x		x
S 20			x		x	x	x	x
*S 28								x
*S 36								x
*S 37						x		
*S 41				x				
*S 43		x						x
S 46	x	x	x		x	x		
*S 47				x				
*S 52						x		
S 63							x	x
*S 67								x
*S 68	x							
*S 73								x
S 75	x	x						
S 76		x				x		x
S 79					x	x		
S 80		x				x		
*S 81				x				
S 82	x			x				
*S 84			x					

TABLE XLII (Continued)

Subject Code Number	STEP Writing	English GPA	STEP Mathematics	Mathematics GPA	STEP Social Studies	Social Sciences GPA	STEP Science	Science GPA
*S 85		x				x		
*S 86	x			x				
*S 88						x		x
*S 89				x				
S 90								x
*S 91								x

*Admitted to Teacher Education

The low GPA's in English, mathematics, social sciences, and science and the low STEP scores in these areas for the College of Business are presented in Table XLIII. In the College of Business there were five subjects who had either or both low scores on the STEP tests or low GPA's in the areas measured by the STEP. Three subjects had low GPA's in only one area. All three were admitted to Teacher Education. One subject in this College, B 06, had low GPA's in two areas and was not admitted. One subject in the College of Business had a low GPA in English; one had a low GPA in mathematics; two had low GPA's in social sciences; and one had a low GPA in science.

TABLE XLIII

SUBJECTS IN THE COLLEGE OF BUSINESS WHO HAD LOW STEP SCORES AND SUBJECTS WHO HAD LOW GPA'S IN THE AREAS MEASURED BY THE STEP

Subject Code Number	STEP Writing	English GPA	STEP Mathematics	Mathematics GPA	STEP Social Studies	Social Sciences GPA	STEP Science	Science GPA
*B 01		x						
B 06				x				x
*B 10						x		
*B 19						x		
*B 21			x					

*Admitted to Teacher Education

Table XLIV shows 102 subjects in the College of Education with either low GPA's in the areas measured by the STEP or with low STEP scores or with low scores in both of these measures. Forty-one subjects in the College of Education had low GPA's in one area. Thirty-four of the 41 were admitted to Teacher Education; seven were not admitted. Eighteen of the 35 with low GPA's in two areas were admitted while 17 were not admitted. Eight of the 14 with low GPA's in three areas were not admitted and six were admitted. All three of the subjects who had low GPA's in all four areas were rejected.

Twenty-nine in the College of Education had low English GPA's; 27 had low GPA's in mathematics; 57 had low GPA's in the social sciences; and 52 had low GPA's in science.

TABLE XLIV

SUBJECTS IN THE COLLEGE OF EDUCATION WHO HAD LOW STEP SCORES AND SUBJECTS WHO HAD LOW GPA'S IN THE AREAS MEASURED BY THE STEP

Subject Code Number	STEP Writing	English GPA	STEP Mathematics	Mathematics GPA	STEP Social Studies	Social Sciences GPA	STEP Science	Science GPA
*E 04						x		x
*E 06								x
*E 07	x		x					
*E 08		x		x				
*E 09		x		x		x		
*E 10						x		
*E 11						x		x
E 12		x		x		x		x
*E 14		x				x		x
E 15		x				x		x
E 17	x	x				x		x
*E 18	x	x						x
*E 19						x		
E 21		x		x		x		x
*E 23						x		
E 25		x				x		x
*E 26		x				x		
*E 27						x	x	
*E 28								x
*E 29				x		x		x
*E 30		x						x
E 31				x		x		
*E 32	x					x		
E 36						x		x
*E 42						x		
E 43		x				x		
*E 45		x						x
E 47	x	x				x		x
*E 48						x		x
E 49				x		x		x
*E 52						x		
E 54				x				x
E 55		x						x
E 56				x				
*E 60						x		
*E 61				x				x

TABLE XLIV (Continued)

Subject Code Number	STEP Writing	English GPA	STEP Mathematics	Mathematics GPA	STEP Social Studies	Social Sciences GPA	STEP Science	Science GPA
E 62	x		x		x	x	x	x
*E 63		x				x		x
E 66				x				
*E 71						x		
*E 74						x		
E 79						x		x
*E 80			x		x		x	
*E 81								x
*E 87		x				x		
E 89				x				x
*E 95		x						
*E 97						x		
*E 99				x				
E100			x					
E102	x	x		x	x			x
*E103								x
*E106			x					x
*E108						x		
E109			x					x
*E116		x				x		
*E117						x		
E121	x				x	x		x
E122					x			
E123				x		x		x
*E124				x		x		
*E126						x		x
E128						x		x
*E133				x				
E140	x				x			
*E141								x
*E142		x						
*E143								x
*E146	x							
*E147						x		
*E157				x				x
*E160		x						
E162	x	x				x		
*E165								x
E169	x			x		x		
*E170						x		
*E173		x				x		x

TABLE XLIV (Continued)

Subject Code Number	STEP Writing	English GPA	STEP Mathematics	Mathematics GPA	STEP Social Studies	Social Sciences GPA	STEP Science	Science GPA
*E174				x				x
E176				x				x
*E179						x		
E182	x	x						
E186								x
*E187						x		x
E188						x		x
E189	x	x		x		x		x
E190	x							
*E191	x							
E192		x						
E194		x			x	x		
*E196								x
*E198				x		x		x
E201	x					x		x
E204	x				x	x		
*E206				x				
*E208				x				x
*E210						x		x
E213	x							
*E214								x
*E216						x		
E217	x			x				x
*E219						x		
E220		x		x		x		

*Admitted to Teacher Education

Those subjects in the College of Home Economics who had either or both low GPA'S or low STEP scores in the areas of English, mathematics, social studies, or science are presented in Table XLV.

Seven of the 11 in the College of Home Economics who had low GPA's

in one area were admitted to Teacher Education. Five of the six who had low GPA's in two areas were admitted. The one subject who had low GPA's in three areas was admitted. No subject in this College had low GPA's in all four areas.

TABLE XLV

SUBJECTS IN THE COLLEGE OF HOME ECONOMICS WHO HAD LOW STEP SCORES AND SUBJECTS WHO HAD LOW GPA'S IN THE AREAS MEASURED BY THE STEP

Subject Code Number	STEP Writing	English GPA	STEP Mathematics	Mathematics GPA	STEP Social Studies	Social Sciences GPA	STEP Science	Science GPA
*H 01		x				x		x
*H 02						x		x
*H 03				x				
*H 05	x							x
*H 06		x				x		
*H 07						x		x
*H 13								x
*H 14						x		
*H 15						x		x
*H 16					x			
H 19						x		x
*H 20			x					
*H 23	x							
*H 24							x	
*H 28								x
*H 32						x		x
H 33								x
*H 39								x
H 46								x
H 50	x							x
*H 54	x							
*H 56								x
H 59		x	x					

*Admitted to Teacher Education

Three subjects in the College of Home Economics had low GPA's in English; one had a low GPA in mathematics; eight had low GPA's in the social sciences; and 14 had low GPA's in science.

Question 14, 15, 16, and 17 were concerned with how many additional subjects would have been rejected for Teacher Education if the GPA's required for admission in the areas of low STEP scores had been raised and if the percentile rank cut-off points on the STEP had been raised.

Question 14 was: How many subjects in addition to those who were rejected would have been rejected if a GPA of 2.5 had been required in lieu of a STEP score below the 15th percentile rank?

Figure 51 shows that in the area of English nine additional subjects would have been rejected if a GPA of 2.5 or better had been required for admission with a STEP score below the 15th percentile. One of the nine was in the College of Agriculture; four were in the College of Arts and Sciences; three were in the College of Education; and one was in the College of Home Economics.

Figure 52 shows that in the area of mathematics four additional subjects would have been rejected, one was in the College of Arts and Sciences and three were in the College of Education. E 07, one of the three in the College of Education, was one of the three in that College who would have been rejected with a low STEP score in writing and an English GPA below 2.5.

In the area of social studies, Figure 53 shows that only two additional subjects would have been rejected in the area of social studies, one in the College of Agriculture and one in the College of Education. One, E 80, would have been rejected in mathematics also.

English GPA	Percentile Rank of STEP Writing Scores 0 - 14	15 - 19	20 - 24
2.50 - 2.99		E207	
2.00 - 2.49	A 28 E 07 E 32 S 02 E191 S 05 S 68 H 05 S 86	E105 H 16	E 42 E 60 E198
1.50 - 1.99			S 85 E173
1.00 - 1.49		A 19	
No Hours Credit			

Figure 51. Scattergram of the Paired Scores Below the 25th Percentile Rank on the Writing Test of the STEP and GPA's Below 3.00 in English for Those Subjects in All of the Colleges Whose Scores Fell Below These Points and Who Were Admitted to Teacher Education

Mathematics GPA	Percentile Rank of STEP Mathematics Scores 0 - 14	15 - 19	20 - 24
2.50 - 2.99	B 21		
2.00 - 2.49	S 84 E 07 E 80 E106		S 02 E 60 H 09
1.50 - 1.99		E174	
1.00 - 1.49			
No Hours Credit		E214	H 05 H 40 H 45

Figure 52. Scattergram of the Paired Scores Below the 25th Percentile Rank on the Mathematics Test of the STEP and GPA's Below 3.00 in Mathematics for Those Subjects in All of the Colleges Whose Scores Fell Below These Points and Who Were Admitted to Teacher Education

Social Sciences GPA	Percentile Rank of STEP Social Studies Scores 0 - 14	15 - 19	20 - 24
2.50 - 2.99			
2.00 - 2.49	A 23 E 80	E 30 E 96 E151	
1.50 - 1.99		E173 E179	
1.00 - 1.49		A 30 S 37	
No Hours Credit			

Figure 53. Scattergram of the Paired Scores Below the 25th Percentile Rank on the Social Studies Test of the STEP and GPA's Below 3.00 in Social Sciences for Those Subjects in All of the Colleges Whose Scores Fell Below These Points and Who Were Admitted to Teacher Education

Figure 54 shows that only one additional subject would have been rejected in the area of science if a GPA of 2.5 had been required in lieu of a STEP score in science below the 15th percentile. This subject was E 80 who would also have been rejected in the areas of mathematics and social studies.

A total of thirteen additional subjects would have been rejected. Two of the thirteen would have been in the College of Agriculture; five would have been in the College of Arts and Sciences; five would have been in the College of Education; and one would have been in the College of Home Economics. These 13 added to the 75 who were rejected with the GPA's at the 2.0 level would have raised the percentage of rejections from 17.52 to 20.56.

Question 15 was: How many subjects in addition to those who were rejected would have been rejected if a GPA of 3.0 had been required in lieu of a STEP score below the 15th percentile rank? Seventeen additional subjects would have been rejected. This would have included the 13 rejected if a GPA of 2.5 had been required in lieu of a STEP score below the 15th percentile rank and four additional subjects.

Figure 51, page 174, shows that no subject in addition to those who would have been rejected with the GPA at the 2.5 level would have been rejected in the area of English.

Figure 52, page 175, shows that one subject in addition to those who would have been rejected at the 2.5 level would have been rejected if a GPA 3.0 had been required for admission with a STEP score below the 15th percentile. This subject was in the College of Business.

Science GPA	Percentile Rank of STEP Science Scores 0 - 14	15 - 19	20 - 24
2.50 - 2.99	A 22 E 27 H 24		B 21 E142 E153
2.00 - 2.49	E 80	S 37 E 20 E108 E168	S 29 E105 B 19 E111 E 07 E152 E 51 E 96 H 16 E 99 H 40
1.50 - 1.99		E 30 E 61	S 36 S 88 E106 H 05
1.00 - 1.49			E 63
No Hours Credit			B 10

Figure 54. Scattergram of the Paired Scores Below the 25th Percentile Rank on the Science Test of the STEP and GPA's Below 3.00 in Science for Those Subjects in All of the Colleges Whose Scores Fell Below These Points and Who Were Admitted to Teacher Education

Figure 53, page 176, shows that no subject in addition to those who would have been rejected with the GPA at 2.5 would have been rejected with the GPA at the 3.0 level in the area of social studies.

Figure 54, page 178, shows that three additional subjects would have been rejected in science if the GPA of 3.0 had been required for admission with a STEP score below the 15th percentile.

If a GPA of 3.0 had been required the percentage of rejections would have been raised from 17.52 to 21.5.

Question 16 was: How many subjects in addition to those who were rejected would have been rejected if the STEP cut-off point had been placed at the 20th percentile rank and a GPA of 2.0 had been required in lieu of a STEP score below the 20th percentile rank?

Figure 51, page 174, shows that one additional subject would have been rejected on the basis of the writing score on the STEP. This subject was in the College of Agriculture.

Figure 52, page 175, shows that two additional subjects would have been rejected with mathematics scores below the 20th percentile on the STEP. Both of these subjects would have been in the College of Education. One of the two had no credit hours attempted in mathematics.

Four additional subjects would have been rejected in the area of social studies if a STEP score at or above the 20th percentile had been required for admission. Figure 53, page 176, shows that two of the four would have been in the College of Education; one would have been in the College of Agriculture; and one would have been in the College of Arts and Sciences.

Two additional subjects would have been rejected in the area of science if a STEP score at or above the 20th percentile had been

required for admission. Figure 54, page 178, shows that both of these would have been in the College of Education.

A total of nine additional subjects would have been rejected if the STEP cut-off point had been raised from the 15th to the 20th percentile rank and a GPA of 2.0 required for admission to Teacher Education in lieu of a low STEP score. The percentage of rejections would have been raised from 17.52 to 19.63.

Question 17 was: How many subjects in addition to those who were rejected would have been rejected if the STEP cut-off point had been placed at the 20th percentile rank and a GPA of 2.5 had been required in lieu of a STEP score below the 20th percentile rank? Twenty-nine additional subjects would have been rejected. This would have been 20 more than would have been rejected with a 2.0 GPA required.

Figure 51, page 174, shows that there would have been 12 additional disqualifying scores in English. The 12 would have included the nine who would have been rejected with the STEP score cut-off point at the level of the 15th percentile and a GPA of 2.5, the one with a STEP score below the 20th percentile rank and a GPA below 2.0, and two additional subjects. Two of the 12 would have been in the College of Agriculture; four in the College of Arts and Sciences; four in the College of Education; and two in the College of Home Economics.

In mathematics, Figure 52, page 175, shows that four of the six additional subjects who would have been rejected were the same four who would have been rejected with the STEP cut-off point at the 15th percentile and a GPA of 2.5 required in lieu of the low STEP score. The fifth subject would have been rejected with the STEP cut-off point at the 20th percentile rank and a GPA of 2.0 required in lieu of the low

STEP score. The sixth subject had no credit hours attempted in mathematics. Five of the six were in the College of Education and one was in the College of Arts and Sciences.

Nine additional subjects would have been rejected in social studies, if the STEP cut-off point had been at the 20th percentile and a GPA of 2.5 had been required for admission with a low STEP score (Figure 53, page 176). The nine would have included the two subjects whose STEP scores were below the 15th percentile and whose GPA's were below 2.5, two subjects whose GPA's were between 1.49 and 1.99 and whose STEP scores were below the 20th percentile, and three subjects whose STEP scores were below the 20th percentile, and whose GPA's were between 1.99 and 2.5. The combinations of low scores received by subjects E 07 and E 80 have been discussed in the answer to question 14, pages 173 and 177. Subjects E 30 would have been rejected at the 20th percentile level with a 2.0 GPA required for admission in the area of science as well as the social studies score at the 20th percentile level with a 2.5 GPA required.

Figure 54, page 178, shows that in science seven additional subjects would have been rejected, if the STEP cut-off point had been raised from the 15th percentile rank to the 20th percentile rank and the GPA for admission with a low STEP score had been raised from 2.0 to 2.5. Among those who would have been rejected would have been subjects E 30 and E 80 whose scores have been described. Subject S 37 who would have been rejected at this level by the STEP score in science would have been rejected by the social studies score with a STEP cut-off point at the 20th percentile and a GPA of 2.0 required for admission.

The twenty-nine subjects, who were not rejected but would have been

rejected if the STEP cut-off point had been placed at the 20th percentile and a GPA of 2.5 had been required for admission with a low STEP score, would have had a total of 34 disqualifying scores. Twelve of the unacceptable scores would have been in English, six in mathematics, nine in social studies, and seven in science. Four of the 29 subjects would have been from the College of Agriculture, six from the College of Arts and Sciences, 17 from the College of Education, and two from the College of Home Economics. Raising the cut-off point on the STEP from the 15th to the 20th percentile and the GPA required for admission with a low STEP score from 2.0 to 2.5 would have raised the percentage of rejections from 17.52 to 24.3.

Twenty-one subjects in the study were admitted to Teacher Education on the basis of GPA's of 2.0 or above in lieu of STEP scores below the 15th percentile (Table XVIII, p. 70). If the GPA's to be used in lieu of the STEP scores below the 15th percentile rank had been 2.5 or above, 13 of the 21 would have been rejected. If the required GPA for admission had been 3.0, four more of the 21 would have been rejected. Four of the 21 who were admitted with low STEP scores would have been admitted with the GPA at either 2.5 or 3.0. These subjects were E146, H 16, H 23, and H 54. These subjects had GPA's of 3.0 or above in the areas of the low STEP scores.

The GPA of 2.5 seemed to be more likely to identify the subjects with STEP scores below the 15th percentile rank than did the GPA of 2.0. There remained, however, many subjects with GPA's below 2.0 who were not identified by the STEP scores at the 15th percentile rank. A STEP cut-off point at the 20th percentile rank would have identified only nine more of those with GPA's below 2.0.

Summary of the Studies of the Criteria for Admission to Teacher Education

A knowledge of the distribution of certain variables among the Colleges was needed as background for the study. Of the 428 subjects who took the STEP in February, 1966, 51.4 per cent were enrolled in the College of Education. Of this group, 51.8 per cent were seeking certification to teach on the elementary level while 41.8 sought secondary teaching certificates. Sixty-four and one-tenth per cent of the subjects from the College of Arts and Sciences sought secondary certificates. Thirty-four and eight-tenths per cent of the subjects from Arts and Sciences were preparing for the general certificate, while only 6.4 per cent of those in the College of Education sought the general certificate.

Seventeen and five-tenths per cent of the 428 subjects who took the STEP test were rejected for Teacher Education. No action was taken on about five per cent. The College of Agriculture had the highest percentage of rejections. Nearly one-half of the applicants from this College were rejected, 48.5 per cent. Of the sixteen who were rejected from the College of Agriculture, five had not taken the speech test. Seven from this College, 21.2 per cent, had low total GPA's while 12, 36.4 per cent, had low STEP scores.

Thirty-five subjects in all Colleges failed to complete the admissions procedures. Thirteen of the 35 failed to take the speech test, 16 failed to turn in a completed application form for admission, and six others failed to do either. No subject in the Colleges of Agriculture or Arts and Sciences failed to complete the application form. No subject in the College of Business failed to take the speech test, but

three failed to complete the application. In the College of Education there were 12 with no application forms and six other subjects with neither the application form nor the speech test. The College of Home Economics had one subject who failed to take the speech test and one who failed to complete the application form.

Of the 35 who failed to complete the admissions procedures, eight were preparing to teach on the elementary level, four were seeking general teaching certificates, and the remaining 23 were seeking admission to the program of study leading to the secondary certificate.

Only 1.6 per cent of the 428 subjects had unsatisfactory ratings on the speech test, while 4.4 per cent failed to take the test. Four and seven-tenths per cent had unsatisfactory ratings on the essay examination. The percentages of the subjects with satisfactory ratings on the speech test and the essay examination in the College of Agriculture were lower than the percentages of success in any other College. The College of Business had no unsatisfactory ratings on either the speech test or the essay examination.

Thirty-eight subjects were rejected on the basis of total GPA's below 2.0. This was 8.9 per cent of the 428 subjects in the study. The College of Agriculture with 21.2 per cent rejected on the basis of the total GPA had the highest percentage of rejection among the Colleges. The College of Business had only one subject with a low total GPA.

A total of 78 low STEP scores was received by the subjects in the sample. Forty-two were in STEP writing; 13 were on the mathematics test of the STEP; 15 were on the social studies test; and eight were on the science test. Several subjects had more than one low STEP score. There were only 61 different subjects who had low STEP scores. The

College of Agriculture had a higher percentage of its subjects with disqualifying STEP scores than any other College. The College of Business had only one disqualifying STEP score.

The ranges, means, standard deviations and correlation studies were limited to those subjects for whom scores were available. There were 428 subjects in the sample. Three-hundred-ninety-one had ACT scores; 427 had English GPA's, 307 had mathematics GPA's; 414 had GPA's in the social sciences; and 418 had GPA's in science.

The total GPA's ranged from a low of 0.92 in the College of Education to 4.0 also in the College of Education. The lowest mean total GPA was 2.29 in the College of Agriculture, while the highest mean total GPA, 2.79, was in the College of Arts and Sciences.

In English the GPA's ranged from 0.00 in the College of Education to 4.00 in all of the Colleges. The means ranged from 2.19 in the College of Agriculture to 2.78 in the College of Arts and Sciences.

The GPA's in mathematics ranged from 0.00 in the Colleges of Education and of Arts and Sciences to 4.00 in all of the Colleges. The means ranged from 2.32 in the College of Agriculture to 2.89 in the College of Business.

The social sciences GPA's ranged from 0.36 in the College of Education to 4.0 in all of the Colleges except the College of Agriculture. The mean GPA's in the social sciences ranged from 2.26 in the College of Agriculture to 2.63 in the College of Arts and Sciences.

Science GPA's ranged from 0.00 in the Colleges of Arts and Sciences and of Education to 4.0 in all of the Colleges except the College of Agriculture.

The raw scores on the writing test of the STEP ranged from a low of

19 in the College of Education to a high of 54 in the same College. The mean of the scores on the writing test of the STEP ranged from 34.52 in the College of Agriculture to 41.96 in the College of Business.

The mathematics raw scores on the STEP ranged from seven in the College of Education to 54 in the College of Arts and Sciences. The mean STEP mathematics scores ranged from 24.76 in the College of Home Economics to 27.54 in the College of Arts and Sciences.

STEP social studies raw scores ranged from 20 in the College of Arts and Sciences and of Education to 68 in the College of Education. The mean social studies raw scores ranged from 38.45 in the College of Agriculture to 46.76 in the College of Arts and Sciences.

In science the STEP raw scores ranged from 14 in the College of Arts and Sciences to 52 in the same College. The mean STEP science raw scores ranged from 31.37 in the College of Business to 33.94 in the College of Agriculture.

ACT standard scores range from one through 36. The ACT standard scores in the study ranged from six in English in the Colleges of Agriculture and Arts and Sciences to 34 in mathematics in the College of Home Economics. The means of the ACT tests ranged from 15.73 in social studies in the College of Agriculture to 22.56 in social studies in the College of Arts and Sciences.

There were 17 questions proposed for the study. Question one asked if subjects who had low scores on the STEP were admitted to Teacher Education on the basis of GPA's in the areas of the disqualifying STEP scores. Twenty-one subjects were admitted when GPA's in the areas were used in lieu of their low STEP scores. Three of these subjects were in the College of Agriculture, five were in the College of Arts and Sciences,

one was in the College of Business, seven were in the College of Education, and five were in the College of Home Economics.

Questions two through eight of the study were concerned with the correlations between different variables. Question two was: What were the correlations between the total GPA's and the STEP raw scores in writing, mathematics, social studies, and science? The correlations in writing ranged from .14 to .45. Three were significant at the .01 level, one was significant at the .05 level, and one was not significant. In mathematics the correlations were spread over a wider range, they were from .15 to .51. Three of the correlations in mathematics were significant at the .01 level, two were not significant. In social studies four correlations were significant at the .01 level, and one was not significant. In science three of the correlations were significant at the .01 level, one was significant at the .05 level, and one was not significant. The range of the correlations in science was from .10 to .46.

Question three was: What were the correlations between the total GPA's and the ACT standard scores in English, mathematics, social studies, and science? All of these correlations were positive. The range of the correlations in each area between the total GPA's and the ACT scores was not as great as was the range of the correlations between the total GPA's and the STEP scores. Ten of the twenty correlations were significant at the .01 level. In English there were three correlations significant at the .01 level and two correlations which were not significant. The range of the correlations between the ACT English scores and the total GPA's was .21 to .50. The range of the mathematics correlations was from .16 to .55. Three of these correlations were

significant at the .01 level, one was significant at the .05 level, and one was not significant. In social studies two of the correlations were significant at the .01 level, one was significant at the .05 level, and one was not significant. The range of these correlations was from .20 through .51. Two of the correlations between the science scores on the ACT and the total GPA's were significant at the .01 level, one was significant at the .05 level, and two were not significant.

Question four was: What were the correlations between the STEP raw scores and the GPA's in each of the areas measured by the STEP? Nine of the twenty correlations were significant at the .01 level. Three of these were in science and three were in social studies. One was in the area of mathematics and two were in the area of English. Five of the correlations between the STEP scores and the GPA's in the areas were significant at the .05 level. Two of these were in English and there was one each in the other three areas. Six of the correlations were not significant. Three of these were in mathematics and one each in the other three areas. The correlations were a little higher between the STEP social studies raw scores and the GPA's in the area than the correlations between any other area and the GPA's in the areas.

Question five was: What were the correlations between the ACT scores and the GPA's in each of the areas measured by the ACT? Nine of the twenty correlations were significant at the .01 level. Three of these were in English and there were two in each of the other three areas. Three of the correlations were significant at the .05 level, one was in English, and there was one each in mathematics and science. Eight correlations were not significant, three of these were in social studies, one was in English, and there were two each in mathematics and

science. One of the correlations in the area of mathematics which was not significant was a negative correlation; all other correlations were positive. The highest correlations were in the area of English where all correlations were significant.

Question six of the study was: What were the correlations between the raw scores on the STEP and the standard scores on the ACT in each area? All of these correlations were significant. All of the correlations between the STEP scores and the ACT scores were significant at the .01 level except one. The English correlation in the College of Business was significant at the .05 level. Many of the correlations were highly significant.

Question seven was: What were the correlations between the ACT composite scores and the total GPA's? All of these correlations were positive. All, except the correlation for the College of Agriculture, were significant. One was significant at the .05 level and three were significant at the .01 level.

Question eight of the study was: What were the correlations between the ratings on the essay examination and each of the following: total GPA's, English GPA's, and the raw scores on the writing test of the STEP? Of the 15 correlations only four were significant. One of the four was significant at the .05 level while three were significant at the .01 level. The other correlations were low.

The highest correlations were found between the two standardized tests. There was little difference between the over-all correlations between the standardized test scores and the GPA's. However, in comparing the 20 correlations between the ACT scores and the total GPA's with the 20 correlations between the STEP scores and the total GPA's,

in 12 instances the ACT had the higher r's. In science only the College of Business had a higher r between the STEP scores and the total GPA's than between the ACT scores and the total GPA's. In mathematics only the College of Agriculture had a higher r for the STEP than for the ACT. The STEP writing scores had higher r's with the total GPA's than did the ACT English scores in the College of Agriculture, Arts and Sciences, and Home Economics.

Of the 20 pairs of correlations between the GPA's in the areas and the STEP scores and the correlations between the GPA's in the areas and the ACT scores, 12 correlations between the ACT scores and the GPA's in the areas were higher than the STEP correlations in the same areas. In English the STEP scores had a higher correlation only in the College of Arts and Sciences. In mathematics the STEP scores had a higher correlation only in the College of Agriculture. In social studies the STEP scores had higher correlations in the Colleges of Arts and Sciences, Business, and Home Economics. In science the STEP scores had higher correlations in the Colleges of Agriculture, Arts and Sciences, and Business.

The coefficients of correlation showed that relationships did exist between certain variables in the study. While many of the correlations were significant at the .01 and .05 levels of confidence, none of the correlations between the admissions criteria reached .60. No set of correlations was high enough to lead the researcher to believe that any two criteria were measuring exactly the same thing to such an extent that one of the measures was unnecessary.

Studies were made of the bivariate relationships between certain variables. These studies provided the answers for questions nine

through 17.

Question nine was: Were the subjects who were rejected on the basis of the ratings on the essay examination the same subjects who were rejected on the basis of the total GPA's? The answer appeared to be no; subjects rejected on the basis of the total GPA's were usually not the same subjects who were rejected on the basis of the ratings on the essay examination.

Question ten was: Were the subjects who were rejected on the basis of the ratings on the essay examination the same subjects who had GPA's below 2.0 in English? The answer was those subjects with English GPA's below 2.0 were usually not rejected on the basis of the ratings on the essay examination.

Question eleven was: Were the subjects who were rejected on the basis of the ratings on the essay examination the same subjects who had scores below the 15th percentile on the STEP writing test? A higher percentage of the subjects with unsatisfactory ratings on the essay were identified by the STEP writing test than were identified by either the total GPA's or the English GPA's. The subjects who were rejected on the basis of the essay ratings were in about one-third of the cases the same subjects who were rejected on the basis of the scores on the writing test of the STEP.

Question twelve was: Were the subjects who were rejected on the basis of scores on the STEP the same subjects who were rejected on the basis of total GPA's? Less than a third of the subjects with low total GPA's were rejected on the basis of STEP scores.

Question thirteen was: Were the subjects with scores below the 15th percentile on the STEP the same subjects who had GPA's below 2.00

in areas of the low STEP scores? The answer to this question should probably be no. Few subjects with low STEP scores were among the subjects with GPA's below 2.00 in the areas in which the subjects received the low STEP scores. Some were identified by both the low GPA's in English and the low STEP writing scores. None were identified by both the low GPA's in mathematics and the low score on the STEP mathematics test. In both social studies and science a few subjects had low GPA's in the areas in which they had low scores on the STEP. Many subjects who had low GPA's in the areas were not identified by the STEP scores.

Question 14 was: How many subjects in addition to those who were rejected would have been rejected if a GPA of 2.5 in the area were required in lieu of a STEP score below the 15th percentile rank? Thirteen additional subjects would have been rejected.

Question 15 was: How many subjects in addition to those who were rejected would have been rejected if a GPA of 3.0 in the area were required in lieu of a STEP score below the 15th percentile rank? Seventeen additional subjects would have been rejected.

Question 16 was: How many subjects in addition to those who were rejected would have been rejected if the STEP cut-off point were placed at the 20th percentile rank and a GPA of 2.0 in the area required in lieu of a low STEP score? Nine additional subjects would have been rejected.

Question 17 was: How many subjects in addition to those who were rejected would have been rejected if the STEP cut-off point were placed at the 20th percentile rank and a GPA of 2.5 were required in lieu of a low STEP score? Twenty-nine additional subjects would have been rejected.

CHAPTER V

INTERPRETATIONS OF RESULTS

This study was the first step in a longitudinal study of 428 subjects at Oklahoma State University, who took the STEP in February, 1966, as a part of the procedures for admission to the Teacher Education program at the University.

The study was concerned with the relationships which existed between ratings, scores, and grades, which were used as criteria in the admissions procedures. These criteria included the ratings on the speech test and the essay examination, the total GPA's, and the percentile ranks of the scores on the subtests of the STEP. Although ACT scores are not part of the admission criteria at the University, since they were available for most of the subjects, they were included in the study.

Individual subjects, their grades, scores, and their rejection-admission status were also concerns of the study. To be admitted to Teacher Education, the applicant must have satisfactory ratings on both the speech test and the essay examination, a total GPA of 2.0 or above, and scores at or above the 15th percentile rank on each of the four subtests of the STEP: writing, mathematics, social studies, and science. A GPA of 2.0 or above in the area may be used in lieu of a low STEP score for admission to the Teacher Education program.

Summary of Findings

There were 428 subjects in the study. Three-hundred-thirty-one were admitted to Teacher Education. Twenty-two failed to complete and file the application form for admission to the program so were neither admitted nor rejected. Seventy-five were rejected.

A total of 111 subjects had disqualifying scores. Eleven of these had no applications on file. Action to admit or reject was taken on the remaining 100 subjects. Twenty-one of these were admitted to Teacher Education on the basis of GPA's in the areas of the disqualifying STEP scores. One of the 21 subjects, A 28, was admitted on the basis of the English GPA. The STEP science score reported for A 28 was in error. His correct score was below the 15th percentile rank and he should have been rejected since his GPA in science was below 2.0. This subject and four others were admitted in error with unsatisfactory scores.

Twenty-two subjects had no applications for admission to Teacher Education on file. Eleven of these had no disqualifying scores. One had a low STEP writing score which was cancelled by the GPA in English. Four had no speech ratings as the only disqualifying factors.

Fifty-nine of the 75 subjects who were rejected were rejected on the basis of a single criterion. Eleven were rejected on the basis of two criteria, three had unsatisfactory scores on three criteria, one had unsatisfactory scores on four criteria, and one had disqualifying scores on five criteria. More subjects were rejected on the basis of total GPA's than were rejected by any other single factor or combination of factors. The second most frequent cause for rejection was "no speech score", and the third was the rating on the essay examination.

Seventeen questions were proposed for the study. Question one was:

Were subjects who had scores below the 15th percentile rank in any area of the STEP admitted to Teacher Education on the basis of GPA's at or above 2.0 in the area of the low STEP score? Twenty-one subjects were admitted on the basis of adequate GPA's in the areas of the low STEP scores.

Question two was: What were the correlations between the total GPA's and the raw STEP scores in writing, mathematics, social studies, and science? Correlations in English in the Colleges of Home Economics, Education, and Arts and Sciences were significant at the .01 level, while the r of the College of Agriculture was significant at the .05 level. In mathematics correlations significant at the .01 level were found in the Colleges of Agriculture, Education, and Arts and Sciences. The r's in social studies in the Colleges of Business, Education, Arts and Sciences, and Home Economics were significant at the .01 level. In science the r's in the Colleges of Arts and Sciences, Education, and Home Economics were significant at the .01 level, while the r in the College of Business was significant at the .05 level.

Question three was: What were the correlations between the total GPA's and the raw scores on the ACT in English, mathematics, social studies, and science? In English the only significant r's were in the Colleges of Arts and Sciences, Education, and Home Economics. All of these correlations were significant at the .01 level. In mathematics r's significant at the .01 level were found in the Colleges of Arts and Sciences, Education, and Home Economics. The r in the College of Business was significant at the .05 level. The social studies and science correlations for the College of Education and the College of Arts and Sciences were significant at the .01 level. The r's in these

two areas were significant at the .05 level in the College of Home Economics.

Question four was: What were the correlations between the raw scores of the STEP and GPA's in the areas measured by the STEP? The Colleges of Arts and Sciences and Education had r's significant at the .01 level in English. The r's in English for the Colleges of Agriculture and Home Economics were significant at the .05 level. In mathematics the only significant correlations were an r significant at the .01 level in the College of Education and an r significant at the .05 level in the College of Arts and Sciences. In social studies and science r's significant at the .01 level were found in the Colleges of Arts and Sciences, Business, and Education. The College of Home Economics had r's significant at the .05 level in both areas.

Question five was: What were the correlations between the ACT scores and the GPA's in the areas measured by the ACT? All r's in both the College of Arts and Sciences and the College of Education were significant at the .01 level. The College of Home Economics had r's significant at the .01 level in English and at the .05 level in mathematics and science. The r in English for the College of Agriculture was significant at the .05 level.

Question six was: What were the correlations between the raw scores of the STEP and the standard scores of the ACT in each area? All of these r's were significant at the .01 level except English in the College of Business. The English correlation in this College was significant at the .05 level.

In answer to question seven, correlations betwen the total GPA's and ACT composite scores were significant at the .01 level in the

Colleges of Arts and Sciences, Education, and Home Economics. The r for the College of Business was significant at the .05 level and the r of the College of Agriculture was not significant.

Question eight was concerned with the correlations between the ratings on the essay examination and the STEP writing scores, the English GPA's, and the total GPA's. Only three of the r's were significant at the .01 level. Two of these were between the essay ratings and the STEP writing scores and were in the College of Education and the College of Arts and Sciences. The r for the English GPA's in the College of Arts and Sciences was also significant at the .01 level. The r for the College of Education between the English GPA's and the essay ratings was significant at the .05 level. No other r's were significant.

The answer to question nine appeared to be no. Subjects rejected on the basis of the ratings on the essay examinations were usually not the same subjects who were rejected on the basis of total GPA's.

Question 10 asked if the subjects who were rejected on the basis of the ratings on the essay examination were the same subjects who had GPA's below 2.0 in English. Usually the subjects who were rejected on the basis of the ratings on the essay were not the same subjects who had GPA's below 2.0 in English.

In answer to question 11 the STEP writing test identified almost two-thirds of the subjects who were rejected on the basis of the ratings on the essay examination.

The answer to question 12 was that usually those subjects who were rejected on the basis of STEP scores were not the same subjects who were rejected on the basis of total GPA's.

Question 13 was: Were the subjects with scores below the 15th

percentile rank on the STEP the same subjects who had GPA's below 2.0 in the areas of the low STEP scores? The subjects with low STEP scores were usually not the same subjects who had low GPA's in the areas measured by the STEP. Many subjects with low GPA's were not identified by the STEP.

Question 14 was: How many subjects in addition to those who were rejected would have been rejected if GPA's of 2.5 had been required in lieu of STEP scores below the 15th percentile rank? Thirteen additional subjects would have been rejected.

Question 15 was: How many subjects in addition to those who were rejected would have been rejected if GPA's of 3.0 had been required in lieu of STEP scores below the 15th percentile rank? Seventeen additional subjects would have been rejected.

Question 16 was: How many subjects in addition to those who were rejected would have been rejected if the STEP cut-off point had been placed at the 20th percentile rank and GPA's of 2.0 required in lieu of STEP scores below the 20th percentile rank? Nine additional subjects would have been rejected.

Question 17 was: How many subjects in addition to those who were rejected would have been rejected if the STEP cut-off point had been placed at the 20th percentile rank and GPA's of 2.5 had been required in lieu of STEP scores below the 20th percentile rank? Twenty-nine additional subjects would have been rejected.

Implications and Suggestions

The goal of the Council on Teacher Education at Oklahoma State University is to assure that those who are prepared for teaching by

the University do have the potential to become competent teachers. Two factors which appear to be present, if this goal is to be attained, are the selection and the education of those who are to become teachers.

The screening for admission or rejection to the Teacher Education program at the University is primarily concerned with the evaluation of the degree of mastery of appropriate academic knowledges and the degree of mastery of the skills necessary to understand, interpret, and communicate those knowledges.

The study of the various measures of the mastery of knowledges and skills which were used in the screening procedures provided some understanding of the relationships which existed between the different measures used. The study also called attention to possible existing problem areas in the implementation of the procedures and in the pretest educational preparation of those who apply for admission to Teacher Education.

Correlation studies showed the possible relationships between the different measures used. While many of the correlations were significant, none of the correlations were high enough to indicate that the measures being correlated were measuring the same thing to such a degree that one of the measures was unnecessary. All measures being used in the screening procedures appeared to be necessary, if academic knowledges and skills deemed essential for teachers were to be evaluated.

While many of the correlations between the two standardized tests, the STEP and the ACT, and the total GPA's and the GPA's in the areas were significant, the correlations with the ACT scores were in most cases slightly higher than were the correlations with the STEP scores. ACT scores might be a valuable guide for advisors and students in

selecting those courses which would strengthen knowledges and skills in areas which appear to be weak.

The STEP, which was administered after a minimum of three semester's work had been completed, should have been a valuable instrument for identifying those students who still had weaknesses in academic areas. When, however, 34.4 per cent of those who had low STEP scores were admitted on the basis of GPA's of 2.0 in the areas in lieu of the low STEP scores, was the value of this screening instrument negated? The low STEP scores indicated that the subjects did not have mastery of the knowledges and skills in the areas concerned at the time of the test. It appeared that GPA's of 2.5 or 3.0 in lieu of low STEP scores might have been more desirable than the present 2.0. GPA's of 2.5 would have permitted the STEP to function as a screening criteria in 61.9 per cent of the cases which were admitted with low STEP scores. GPA's of 3.0 would have permitted the STEP to function as a screening criteria in 81 per cent of the cases. GPA's of 2.5 or 3.0 in the areas would probably assure that the subject would take additional courses in areas in which weaknesses existed. The academic progress and teaching experiences of subjects admitted with low STEP scores should be studied to determine if GPA's of 2.5 or 3.0 would be more desirable than the 2.0 for admission with a low STEP score.

GPA's in the College of Agriculture suggest that consideration should be given to a study of the curriculum being pursued by the students preparing to teach in this field. These subjects had an average of 84.39 hours of credit which was about 19 more hours per subject than in any other College. They had an average of 24.97 hours of science each which was more hours of science credit than the subjects in any

other College. The mean science GPA of 1.92 in this College was the lowest among the Colleges. Despite having the lowest mean GPA in science, the College of Agriculture had the highest mean STEP score in science. The cause of this seeming inconsistency should be studied. Has this resulted from students taking more science courses than they could handle well, thereby acquiring their knowledge from many courses in which their grades were low? Consideration might well be given to fewer courses in science at this level with a higher level of mastery of each course expected.

The large percentage of rejections among the subjects who were applying for admission to the Teacher Education program leading to a general teaching certificate in a specialized area suggests that the curriculum of these students should be studied. If it is believed that all who teach should have a mastery of certain academic knowledges and skills, then these subjects should perhaps pursue a curriculum which provides them with these knowledges and skills as well as the specialized knowledges and skills. The courses necessary for the academic learnings should perhaps be scheduled before the student applies for admission to Teacher Education or takes the STEP.

Some of the problems identified in the implementation of the procedures were the communication of information concerning admission procedures and the accuracy of criterion data. Why were there a number of subjects in the Colleges of Business and Education who failed to file the application for admission to Teacher Education and no such failures in the College of Agriculture or the College of Arts and Sciences? Why was the failure to take the speech test a larger problem in the Colleges of Agriculture and of Arts and Sciences than in the other Colleges?

Perhaps the communication policies in the different Colleges might be studied.

Care needs to be taken in the selection of all those who handle test data. While only about 2 per cent of the reported scores were not correct, each score is significant in determining if a student is to be admitted or rejected.

Questions which might be answered by later studies might include the following: Were those subjects who were rejected for Teacher Education able to remove their deficiencies and qualify for admission to the program? Did those subjects who failed to complete the admissions procedures complete them and were they admitted to the program? What were the relationships between admission-rejection experiences at the time of application for Student Teaching and the admission-rejection experiences at the time of application to Teacher Education? What was the relationship between success in the teaching field and the admission-rejection experiences at the time of application for admission to Teacher Education? What was the relation between success in the teaching field and the level of academic knowledges and skills attained by the teachers? What level of academic knowledges and skills appears to be essential for success in the teaching profession? Is a GPA of 2.0 adequate or should the GPA be moved to 2.5 or 3.0 when used in lieu of a low STEP score? Would a cut-off point at the 20th percentile on the STEP be more effective in the selection of only those who become effective teachers and the rejection of only those who do not become effective teachers?

The education of those who seek to teach the children of this nation and the screening of those who are to receive this education are serious responsibilities of the institutions which are involved in the

preparation of teachers. Research of screening procedures and of screening criteria are necessary if only those with the potential to become good teachers are admitted to the teaching profession.

It is hoped that this research will add to the existing knowledge concerning the screening and education of teachers. It is also hoped that this research will stimulate further research in this area so vital to public education in a democracy.

SELECTED BIBLIOGRAPHY

(1) ACT Technical Report, 1965 Edition. Published by the Research and Development Division of the American College Testing Program in cooperation with the professional staffs of Science Research Associates, Inc., and Measurement of Research Center, Inc., 1965.

(2) Abel, Allen. "The Uses and Abuses of Correlational and Regression Techniques in the Evaluation and Prediction of Teacher Effectiveness." Wisconsin Studies of the Measurement and Prediction of Teacher Effectiveness. Ed. A. S. Barr, D. A. Worcester, Allan Abell, Clarence Beecher, Leland E. Jensen, Archie L. Peronto, Thomas A. Ringness, and John Schmid, Jr. Madison, Wisconsin: Dembar Publications, Inc., 1961, 48-57.

(3) Amidon, Edmund, and Anita Simon. "Teacher-Pupil Interaction." Review of Educational Research, XXXV (April, 1965), 130-139.

(4) Anderson, H. J. "Correlation Between Academic Achievement and Teaching Success." Elementary School Journal, XXXII (September, 1931), 22-29.

(5) Anderson, Harold Milton. "A Study of Certain Criteria of Teaching Effectiveness." Journal of Experimental Education, XXIII (September, 1954), 41-71.

(6) Anderson, W. N. "The Selection of Teachers." Educational Administration and Supervision, III (February, 1917), 83-90.

(7) Barr, A. S. "Impressions, Trends, and Further Research." The Journal of Experimental Education, XIV (December, 1945), 200-206.

(8) Barr, A. S. "Measurement of Teaching Ability." Review of Educational Research, X (June, 1940), 182-184.

(9) Barr, A. S. "Recruitment for Teacher Training and Prediction of Teaching Success." Review of Educational Research, X (June, 1940), 185-190.

(10) Barr, A. S. "The Measurement and Prediction of Teaching Efficiency: A Summary of Investigation." Journal of Experimental Education, XVI (June, 1948), 203-283.

(11) Barr, A. S., D. A. Worcester, Allan Abell, Clarence Beecher, Leland E. Jensen, Archie L. Peronto, Thomas A. Ringness, and John Schmid, Jr. Wisconsin Studies of the Measurement and Prediction of Teacher Effectivness. Madison, Wisconsin: Dembar Publications, Inc., 1961.

(12) Barr, A. S., and Lester M. Emans. "What Qualities Are Prerequisite to Success in Teaching?" The Nation's Schools, VI (September, 1930), 60-64.

(13) Barr, A. S., and Lois Douglas. "The Pre-Training Selection of Teachers." Journal of Educational Research, XXVIII (October, 1934), 92-117.

(14) Barr, Arvil S. "The Measurement and Prediction of Teaching Efficiency." Review of Educational Research, XVI (June, 1946), 203-208.

(15) Barr, Arvil S., and Robert E. Jones. "The Measurement and Prediction of Teacher Efficiency." Review of Educational Research, XXVIII (June, 1958), 256-264.

(16) Barr, Arvil S., Theordore L. Torgerson, Carl E. Johnson, Vergil E. Lyon, and Anthony C. Walvoord. "The Validity of Certain Instruments Employed in the Measurement of Teaching Ability." The Measurement of Teaching Efficiency. Editor. Helen M. Walker. New York: The Macmillan Company, 1935, 71-141.

(17) Beggs, Walter K. The Education of Teachers. New York: The Center of Applied Research in Education, Inc., 1965.

(18) Birkelo, Carl P. "What Characteristics in Teachers Impress Themselves Most Upon Elementary and High School Students?" Educational Administration and Supervision, XV (September, 1929), 453-456.

(19) Bloom, Benjamin S., and Frank R. Peters. The Use of Academic Prediction Scales for Counseling and Selecting College Entrants. New York: The Free Press of Glencoe, Inc., 1961.

(20) Book, William F. "The High School Teacher From the Pupil's Point of View." The Pedagogical Seminary, XII (September, 1905), 239-88.

(21) Bretsch, Howard S., and Gene S. Jacobsen. "Recruitment, Guidance, and Screening of Prospective Elementary- and Secondary-School Teachers." Review of Educational Research, XXV (June, 1955), 204-12.

(22) Brown, Edwin J., and Victor T. Truster. "Admission Requirements in Teachers Colleges." School and Society, XXXIX (February, 1934), 252-55.

(23) Bruner, Jerome S. The Process of Education. New York: Random House, Inc., 1960.

(24) Buros, Oscar Krisen (ed.). The Sixth Mental Measurements Yearbook. Highland Park, New Jersey: The Gryphon Press, 1959, 62-7.

(25) Charters, W. W., and Douglas Waples. The Commonwealth Teacher-Training Study. Chicago: The University of Chicago Press, 1929.

(26) Cohen, Joseph W. "The Purposes of Education--Implication for Teacher Education." The Education of Teachers: New Perspectives. Washington, D. C.: National Education Association of the United States, 1958, 3-16.

(27) Conant, James Bryant. The Education of American Teachers. New York: McGraw-Hill Book Company, Inc., 1963.

(28) Cyphert, Frederick R., and Ernest Spaights. An Analysis and Projection of Research in Teacher Education. Cooperative Research Project No. F-015, Cooperative Research Program of the Office of Education, U. S. Department of Health, Education and Welfare, Columbus, Ohio: The Ohio State University Research Foundation, 1964.

(29) Daniel, J. McT. Excellent Teachers: Their Qualities and Qualifications. Columbia, South Carolina: The R. L. Bryan Company, 1944.

(30) Davis, Calvin O. "Our Best Teacher." School and Society, XXIV (August 21, 1926), 240-43.

(31) Dolch, Edward William, Jr. "Pupils' Judgments of Their Teachers." The Pedagogical Seminary, XXVII (June, 1920), 195-99.

(32) Durflinger, Glenn W. "Recruitment and Selection of Prospective Elementary and Secondary School Teachers." Review of Educational Research, XXXIII (October, 1963), 355-66.

(33) Ebel, Robert L. "Measurement Applications in Teacher Education: A Review of Relevant Research." The Journal of Teacher Education, XVII (Spring, 1966), 15-25.

(34) Edson, William H., and Don Davies. "Selectivity in Teacher Education." The Journal of Teacher Education, XI (September, 1960), 327-34.

(35) Ellena, William J., Margaret Stevenson, and Harold V. Webb (Editors). Who's a Good Teacher? Washington, D. C.: American Association of School Administrators, Washington, D. C.: Department of Classroom Teachers of the NEA, and Evanston, Illinois: The National School Boards Association, 1961.

(36) Farr, David S. "Evaluation and Selection Instruments in Teacher Education Programs." Action for Improvement of Teacher Education. Eighteenth Yearbook 1965 Annual Meeting, The American Association of Colleges for Teacher Education. Washington, D. C.: The American Association of Colleges for Teacher Education, 1965, 139-144.

(37) Garrett, Henry E. Statistics in Psychology and Education. New York: Longmans, Green and Co., 1961.

(38) Getzels, J. W., and P. W. Jackson. "The Teacher's Personality and Characteristics." Handbook of Research on Teaching. Ed. N. L. Gage. Chicago: Rand McNally and Company, 1963, 506-82.

(39) Guidance in Teacher Education. Thirty-Sixth Yearbook 1957 of the Association for Student Teaching in Cooperation with the Student Personnel Association for Teacher Education. Ann Arbor, Michigan: Edwards Brothers, Inc., 1957.

(40) Guilford, J. P. Fundamental Statistics in Psychology and Education, 4th ed. St. Louis: McGraw-Hill Book Company, 1965.

(41) Hall, Vernon C. "Former Student Evaluation as a Criterion For Teaching Success." The Journal of Experimental Education, XXXIV (Fall, 1965), 1-19.

(42) Hellfritzsch, A. G. "A Factor Analysis of Teacher Abilities." The Journal of Experimental Education, XIV (December, 1945), 166-199.

(43) Hult, Esther. "Study of Achievement in Educational Psychology." Journal of Experimental Education, XIII (June, 1945), 174-90.

(44) Ingrham, Mark H. "The Uses of Hysteria." The Education of Teachers: New Perspectives. National Commission on Teacher Education and Professional Standards, Washington, D. C.: National Education Association of the United States, 1958, 86-94.

(45) Jackson, Robert W. B. The Sixth Mental Measurements Yearbook. Ed. Oscar Krisen Buros. Highland Park, New Jersey: The Gryphon Press, 1959, 62-7.

(46) Jones, Margaret Lois. "Analysis of Certain Aspects of Teaching Ability." Journal of Experimental Education, XXV (December, 1956), 153-80.

(47) Jordan, Floyd. "A Study of Personal and Social Traits in Relation to High School Teaching." The Journal of Education Sociology, III (September, 1929), 27-43.

(48) Kerlinger, Fred N. Foundations of Behavioral Research. New York: Holt, Rinehart and Winston, Inc., 1965.

(49) La Duke, C. V. "The Measurement of Teaching Ability." The Journal of Experimental Education, XIV (September, 1945), 75-100.

(50) Lins, Leo Joseph. "The Prediction of Teaching Efficiency." The Journal of Experimental Education, XV (September, 1946), 2-60.

(51) MacLean, Malcolm S., May Seagoe Gowan, and John C. Gowan. "A Teacher Selection and Counseling Service." Journal of Educational Research, XLVIII (May, 1955), 669-77.

(52) Magee, Robert M. "Admission-Retention in Teacher Education." Journal of Teacher Education, XII (March, 1961), 81-85.

(53) Michael, William B., Robert A. Jones, Ted Gettinger, Jr., John D. Hodges, Jr., Peter E. Kolesnik, and James Seppals. "The Prediction of Success in Selected Courses in a Teacher Training Program from Scores in Achievement Tests and From Ratings on a Scale of Directed Teaching Performance." Educational and Psychological Measurement, XXI (Winter, 1961), 995-99.

(54) Pitzer, Kenneth S. "Education for Tomorrow's World." The Education of Teachers: New Perspectives. National Commission on Teacher Education and Professional Standards. Washington, D. C.: National Education Association of the United States, 1958, 55-66.

(55) Rolfe, J. F. "The Measurement of Teaching Ability." The Journal of Experimental Education, XIV (September, 1945), 52-74.

(56) Rosecrance, Francis C. "The Teacher and the Teaching Job." The Education of Teachers: New Perspectives. National Commission of Teacher Education and Professional Standards. Washington, D. C.: National Education Association of the United States of America, 1958, 272-78.

(57) Rostker, L. E. "The Measurement of Teaching Ability." Journal of Experimental Education, XIV (September, 1945), 6-51.

(58) Rutherford, Robert Davis. "Recommendations for Improved Selection and Retention Processes for Elementary Teacher Candidates in Selected State Teachers Colleges." Dissertation Abstracts, XXII (May, 1962), 3939-40.

(59) Ryans, David G. Characteristics of Teachers: Their Description, Comparison, and Appraisal. Washington, D. C.: American Council of Education, 1960.

(60) Ryle, Florence. "Qualities That Students Admire in Teachers." California Quarterly of Secondary Education, IV (October, 1928), 82-85.

(61) Sanford, Charles W., and J. Lloyd Trump. "Teacher Education - IV. Preservice Selection." Encyclopedia of Educational Research. Ed. Walter S. Monroe. New York: The Macmillan Co., 1950, 1390-96.

(62) Sarason, Seymour B., Kenneth S. Davidson, and Burton Blatt. The Preparation of Teachers. New York: John Wiley and Sons, Inc., 1962.

(63) Sequential Tests of Educational Progress, Technical Report. Princeton, N. J.: Cooperative Test Division, Educational Testing Service, 1957.

(64) Stoelting, Gustave J. "The Selection of Candidates for Teacher Education at the University of Wisconsin." Journal of Experimental Education, XXIV (December, 1955), 115-32.

(65) Stout, Ruth A. "Selective Admissions and Retention Practices in Teacher Education." The Journal of Teacher Education, VIII (September, 1957), 299-317.

(66) Stratemeyer, Florence B. "Issues and Problems in Teacher Education." Teacher Education For a Free People. Ed. Donald P. Cottrell. Oneonta, New York: The American Association of Colleges For Teacher Education, 1956, 56-83.

(67) Stripling, Robert O., and Thomas R. Horton. "Selective Admission to Teacher Education." Journal of Teacher Education. V (March, 1954), 74-78.

(68) "Teacher Certification at Oklahoma State University." (Mimeographed.)

(69) Trout, David M. The Education of Teachers. Lansing, Michigan: The Michigan Cooperative Teacher Education Study, 1943.

(70) Using ACT On The Campus. Iowa City, Iowa: The American College Testing Program, 1965.

(71) Wert, James, Charles O. Neidt, and J. Stanley Ahmann. Statistical Methods in Educational and Psychological Research. New York: Appleton-Century-Crofts, Inc., 1954.

(72) White, Verna. "Selection of Prospective Teachers At Syracuse University." Journal of Teacher Education, I (March, 1950), 24-31.

(73) Wiles, Kimball. "The Teacher Education We Need." The Journal of Teacher Education, XVII (Summer, 1966), 262-68.

(74) Wilk, Roger E., Walter W. Cook, William H. Edson, and Charles J. Glotzbach. A Study of Factors Operative in the Selective Retention of Students in Teacher Education. Project 174, U. S. Office of Education, Department of Health, Education, and Welfare, Minneapolis, Minnesota: University of Minnesota, 1963.

(75) Witty, Paul. "Some Characteristics of the Effective Teacher." Educational Administration and Supervision, XXXVI (April, 1950), 193-208.

(76) Woodring, Paul. "The Challenge For Excellence." Strength Through Reappraisal. Sixteenth Yearbook 1963 Annual Meeting American Association of Colleges for Teacher Education. Chicago, Ill., 1963, 24-31.

APPENDIX A

APPLICANTS AND RAW DATA FOR APPLICATION FOR ADMISSION TO TEACHER EDUCATION

APPENDIX A

APPLICANTS AND RAW DATA FOR APPLICATION FOR ADMISSION TO TEACHER EDUCATION

Key for column headings for Tables XLVI - Table L

A. Major
- 1 - English
- 2 - Mathematics
- 3 - Social Studies
- 4 - Science
- 5 - Art
- 6 - Music
- 7 - Physical Education
- 8 - Foreign Language
- 9 - Speech
- 10 - Special Education
- 11 - Speech Therapy
- 12 - Business
- 13 - Agriculture
- 14 - Home Economics
- 15 - Family Relations and Child Development
- 16 - Industrial Arts
- 17 - Technical Education
- 18 - Trade and Industrial Education
- 19 - Elementary Education
- 20 - Library

B. Certification
- 1 - Elementary
- 2 - Secondary
- 3 - General

C. Admission-Rejection Status
- 1 - Admitted
- 2 - Rejected
- 3 - No Action Taken

D. Speech Test Rating
- 1 - Satisfactory
- 2 - Unsatisfactory
- 3 - No Speech Test Rating

E. Rating on the Essay Examination
   1 - Satisfactory
   2 - Unsatisfactory

F. Total Hours Attempted

G. Total Grade Point Average

TABLE XLVI

THE MAJORS, CERTIFICATIONS, ADMISSION-REJECTION STATUS, SPEECH AND ESSAY RATINGS, TOTAL HOURS ATTEMPTED, AND TOTAL GPA'S FOR THE COLLEGE OF AGRICULTURE

Subject Code Number	A	B	C	D	E	F	G
A01	13	2	2	3	1	163	2.490
A02	13	2	2	1	2	51	2.090
A03	13	2	1	1	1	138	3.130
A04	13	2	2	1	1	105	1.952
A05	13	2	1	1	1	83	2.265
A06	13	2	2	3	1	77	2.974
A07	13	2	1	1	1	77	2.012
A08	13	2	2	1	1	84	1.761
A09	13	2	1	1	1	81	2.333
A10	13	2	2	1	2	74	2.405
A11	13	2	1	1	1	82	2.439
A12	13	2	1	1	1	113	2.407
A13	13	2	1	1	1	117	2.550
A14	13	2	1	1	1	46	2.586
A15	13	2	2	3	1	46	1.956
A16	13	2	2	1	1	49	2.326
A17	13	2	1	1	1	48	2.416
A18	13	2	2	1	1	47	1.404
A19	13	2	1	1	1	131	2.060
A20	13	2	1	1	1	84	2.583
A21	13	2	1	1	1	81	2.716
A22	13	2	1	1	1	83	2.795
A23	13	2	1	1	1	95	2.263
A24	13	2	2	1	2	17	1.410
A25	13	2	1	1	1	61	2.557
A26	13	2	2	1	2	17	1.580
A27	13	2	2	2	1	79	2.518
A28	13	2	1	1	1	76	2.276
A29	13	2	2	3	1	70	1.680
A30	13	2	1	1	1	99	2.133
A31	13	2	2	3	1	61	2.470
A32	13	2	2	1	2	67	2.612
A33	13	2	2	1	1	103	2.485
M							2.2919
SD							0.4106

TABLE XLVII

THE MAJORS, CERTIFICATIONS, ADMISSION-REJECTION STATUS, SPEECH AND ESSAY RATINGS, TOTAL HOURS ATTEMPTED, AND TOTAL GPA'S FOR THE COLLEGE OF ARTS AND SCIENCES

Subject Code Number	A	B	C	D	E	F	G
S01	3	2	1	1	1	158	2.449
S02	6	3	1	1	1	45	2.511
S03	1	2	2	1	1	127	1.622
S04	3	2	1	1	1	120	2.266
S05	4	2	1	1	1	134	2.037
S06	3	2	2	1	1	127	1.708
S07	8	2	2	1	1	125	1.760
S08	4	2	2	3	1	61	3.540
S09	2	2	1	1	1	100	2.030
S10	6	3	1	1	1	126	2.507
S11	4	2	1	1	1	127	3.409
S12	4	2	1	1	1	112	2.178
S13	7	3	1	1	1	96	1.770
S14	9	2	1	1	1	81	3.111
S15	6	3	1	1	1	91	3.439
S16	3	2	1	1	1	108	2.588
S17	8	2	1	1	1	99	3.373
S18	1	2	1	1	1	75	2.066
S19	4	2	1	1	1	75	3.186
S20	9	2	2	1	1	62	1.709
S21	3	2	1	1	1	82	3.146
S22	4	2	1	1	1	84	3.630
S23	9	2	1	1	1	89	3.078
S24	1	2	1	1	1	68	3.691
S25	4	2	1	1	1	79	2.481
S26	1	2	1	1	1	77	3.064
S27	7	3	1	1	1	81	2.617
S28	3	2	1	1	1	75	2.613
S29	8	2	1	1	1	83	2.759
S30	3	2	2	3	1	95	3.557
S31	1	2	2	3	1	94	3.904
S32	4	2	2	3	1	75	3.200
S33	8	2	1	1	1	85	2.388
S34	4	2	1	1	1	78	2.641
S35	11	3	1	1	1	79	3.810
S36	1	2	1	1	1	77	2.194
S37	5	2	1	1	1	71	2.281
S38	1	2	1	1	1	81	3.913
S39	11	3	1	1	1	87	3.471
S40	8	2	1	1	1	80	2.412
S41	4	2	1	1	1	65	2.184
S42	6	3	1	1	1	82	3.024

TABLE XLVII (Continued)

Subject Code Number	A	B	C	D	E	F	G
S43	7	3	1	1	1	72	2.236
S44	4	2	1	1	1	80	2.975
S45	7	3	1	1	1	80	2.500
S46	6	3	2	1	2	71	1.845
S47	5	1	1	1	1	25	2.640
S48	6	3	1	1	1	52	3.115
S49	1	2	1	1	1	56	3.625
S50	2	2	1	1	1	54	3.314
S51	1	2	2	3	1	48	2.645
S52	11	3	1	1	1	45	2.311
S53	1	2	1	1	1	50	3.480
S54	1	2	2	3	1	50	3.560
S55	6	3	1	1	1	50	3.200
S56	1	2	1	1	1	51	2.823
S57	4	2	1	1	1	46	2.956
S58	6	3	1	1	1	43	2.883
S59	1	2	1	1	1	50	3.420
S60	1	2	1	1	1	49	3.734
S61	6	3	1	1	1	52	3.076
S62	3	2	1	1	1	48	2.770
S63	11	3	2	1	1	46	2.347
S64	4	2	1	1	1	57	2.789
S65	9	2	1	1	1	43	3.231
S66	3	2	1	1	1	46	3.695
S67	11	3	1	1	1	42	2.214
S68	4	2	1	1	1	45	2.400
S69	6	3	1	1	1	50	3.500
S70	3	2	1	1	1	49	3.122
S71	4	2	1	1	1	51	3.392
S72	3	2	1	1	1	49	2.653
S73	7	3	1	1	1	50	2.222
S74	1	2	1	1	1	47	2.893
S75	6	3	2	1	2	49	2.551
S76	6	3	2	1	1	113	1.867
S77	11	3	1	1	1	74	3.013
S78	8	2	1	1	1	77	3.597
S79	11	3	2	1	1	78	2.679
S80	6	3	2	1	1	47	1.957
S81	11	3	1	1	1	94	3.021
S82	7	3	2	1	2	82	2.463
S83	2	2	1	1	1	79	3.215
S84	7	3	1	1	1	55	2.672
S85	5	3	1	1	1	106	2.698
S86	3	2	1	1	1	84	2.428
S87	3	2	1	1	1	48	3.458

TABLE XLVII (Continued)

Subject Code Number	A	B	C	D	E	F	G
S88	9	2	1	1	1	47	2.000
S89	11	3	1	1	1	110	2.400
S90	6	3	2	3	1	54	1.814
S91	2	2	1	1	1	57	2.894
S92	6	3	1	1	1	50	3.400
M							2.7936
SD							0.5948

TABLE XLVIII

THE MAJORS, CERTIFICATIONS, ADMISSION-REJECTION STATUS, SPEECH AND ESSAY RATINGS, TOTAL HOURS ATTEMPTED, AND TOTAL GPA'S FOR THE COLLEGE OF BUSINESS

Subject Code Number	A	B	C	D	E	F	G
B01	12	2	1	1	1	81	2.172
B02	12	2	1	1	1	42	2.523
B03	12	2	1	1	1	80	2.375
B04	12	2	1	1	1	79	3.987
B05	12	2	1	1	1	109	3.376
B06	12	2	2	1	1	83	1.819
B07	12	2	3	1	1	59	2.931
B08	12	2	1	1	1	47	2.829
B09	12	2	3	1	1	46	2.391
B10	12	2	1	1	1	47	2.106
B11	12	2	1	1	1	54	3.037
B12	12	2	1	1	1	46	3.065
B13	12	2	1	1	1	48	2.812
B14	12	2	1	1	1	47	2.489
B15	12	2	1	1	1	46	2.586
B16	12	2	3	1	1	47	2.234
B17	12	2	1	1	1	48	3.416
B18	12	2	1	1	1	79	2.632
B19	12	2	1	1	1	70	2.057
B20	12	2	1	1	1	76	2.881
B21	12	2	1	1	1	93	2.763
B22	12	2	1	1	1	62	2.693
B23	12	2	1	1	1	82	2.951
B24	12	2	1	1	1	90	2.556
M							2.6950
SD							0.4849

TABLE XLIX

THE MAJORS, CERTIFICATIONS, ADMISSION-REJECTION STATUS, SPEECH AND ESSAY RATINGS, TOTAL HOURS ATTEMPTED, AND TOTAL GPA'S FOR THE COLLEGE OF EDUCATION

Subject Code Number	A	B	C	D	E	F	G
E01	19	1	1	1	1	134	2.716
E02	18	2	1	1	1	116	3.206
E03	19	1	1	1	1	85	2.905
E04	19	1	1	1	1	58	2.172
E05	19	1	1	1	1	55	3.054
E06	2	2	1	1	1	105	2.028
E07	3	2	1	1	1	44	2.818
E08	3	2	1	1	1	122	2.467
E09	18	2	1	1	1	97	2.061
E10	17	2	1	1	1	137	2.583
E11	19	1	1	1	1	74	2.270
E12	7	3	2	1	1	92	1.815
E13	1	2	1	1	1	55	3.563
E14	8	2	1	1	1	109	2.000
E15	3	2	2	1	1	99	1.828
E16	2	2	2	2	1	121	2.413
E17	7	3	2	1	1	76	0.921
E18	18	2	1	1	1	100	2.410
E19	7	3	1	1	1	99	2.313
E20	3	2	1	1	1	106	2.433
E21	3	2	2	1	1	101	1.920
E22	3	2	1	1	1	85	2.164
E23	3	2	1	1	1	86	2.279
E24	4	2	1	1	1	79	3.012
E25	9	2	2	1	1	75	1.733
E26	19	1	1	1	1	74	2.108
E27	19	1	1	1	1	80	2.562
E28	3	2	1	1	1	63	2.984
E29	19	1	1	1	1	79	2.037
E30	19	1	1	1	1	80	2.325
E31	18	2	3	1	1	80	2.250
E32	4	2	1	1	1	72	2.458
E33	1	2	3	1	1	90	2.722
E34	19	1	1	1	1	76	3.894
E35	19	1	3	1	1	78	2.756
E36	19	1	2	1	1	72	1.888
E37	19	1	1	1	1	78	2.705
E38	19	1	1	1	1	87	2.632
E39	2	2	1	1	1	83	3.602
E40	19	1	1	1	1	75	2.813
E41	19	1	1	1	1	78	3.448
E42	19	1	1	1	1	71	2.282

TABLE XLIX (Continued)

Subject Code Number	A	B	C	D	E	F	G
E43	1	2	2	1	1	72	1.666
E44	3	2	1	1	1	85	2.827
E45	2	2	1	1	1	77	2.051
E46	1	2	1	1	1	83	3.084
E47	16	2	3	3	1	116	2.268
E48	3	2	1	1	1	101	2.019
E49	1	2	2	1	1	87	1.724
E50	19	1	1	1	1	79	3.303
E51	19	1	1	1	1	84	2.869
E52	19	1	1	1	1	83	2.132
E53	2	2	1	1	1	85	3.305
E54	17	2	3	3	1	78	2.384
E55	7	3	3	1	1	83	2.518
E56	7	3	2	1	1	61	1.459
E57	19	1	3	1	1	82	3.195
E58	19	1	1	1	1	82	3.000
E59	19	1	3	1	1	77	3.168
E60	12	2	1	1	1	74	2.500
E61	19	1	1	1	1	116	2.077
E62	19	1	2	1	1	66	1.970
E63	19	1	1	1	1	75	2.026
E64	3	2	1	1	1	60	2.466
E65	19	1	1	1	1	107	3.327
E66	19	1	3	1	1	73	2.835
E67	1	2	1	1	1	82	3.231
E68	19	1	1	1	1	81	3.271
E69	1	2	1	1	1	86	3.000
E70	1	2	1	1	1	61	3.786
E71	1	2	1	1	1	68	2.132
E72	19	1	1	1	1	51	3.235
E73	19	1	1	1	1	58	2.517
E74	1	2	1	1	1	57	2.368
E75	19	1	1	1	1	49	3.040
E76	19	1	1	1	1	49	3.367
E77	19	1	1	1	1	49	3.448
E78	19	1	1	1	1	48	3.125
E79	1	2	2	1	1	44	1.931
E80	19	1	1	1	1	42	2.309
E81	19	1	1	1	1	50	2.060
E82	2	2	1	1	1	48	3.979
E83	19	1	1	1	1	49	3.387
E84	19	1	1	1	1	48	2.958
E85	2	2	1	1	1	46	2.869
E86	19	1	1	1	1	48	3.125
E87	19	1	1	1	1	44	2.454
E88	1	2	1	1	1	47	3.276

TABLE XLIX (Continued)

Subject Code Number	A	B	C	D	E	F	G
E89	19	1	3	3	1	46	2.304
E90	2	2	1	1	1	47	3.063
E91	19	1	1	1	1	40	2.700
E92	19	1	1	1	1	47	2.468
E93	19	1	1	1	1	52	2.923
E94	19	1	1	1	1	46	3.434
E95	19	1	1	1	1	55	2.327
E96	19	1	1	1	1	47	2.489
E97	11	3	1	1	1	44	2.431
E98	10	3	1	1	1	44	2.386
E99	19	1	1	1	1	66	2.606
E100	19	1	2	1	1	55	3.018
E101	19	1	1	1	1	48	3.520
E102	19	1	2	1	1	49	1.693
E103	3	2	1	1	1	46	2.586
E104	19	1	1	1	1	48	3.458
E105	3	2	1	1	1	46	2.195
E106	19	1	1	1	1	48	2.083
E107	1	2	1	1	1	56	3.232
E108	19	1	1	1	1	47	2.468
E109	1	2	2	1	1	47	2.510
E110	19	1	3	1	1	42	2.714
E111	19	1	1	1	1	48	2.520
E112	19	1	1	1	1	42	2.333
E113	19	1	1	1	1	47	2.234
E114	19	1	1	1	1	49	2.714
E115	1	2	3	3	1	49	2.693
E116	1	2	1	1	1	49	2.040
E117	2	2	1	1	1	48	2.395
E118	19	1	1	1	1	47	2.744
E119	19	1	1	1	1	48	3.583
E120	19	1	1	1	1	53	3.018
E121	19	1	2	1	1	46	2.108
E122	19	1	2	1	1	44	2.159
E123	16	2	3	1	1	45	1.688
E124	9	2	1	1	1	54	2.222
E125	19	1	1	1	1	49	3.408
E126	19	1	1	1	1	43	2.162
E127	2	2	1	1	1	50	3.160
E128	19	1	2	1	1	45	1.711
E129	19	1	1	1	1	47	3.042
E130	19	1	1	1	1	47	3.446
E131	19	1	1	1	1	47	3.744
E132	19	1	1	1	1	47	2.361
E133	19	1	1	1	1	47	3.000
E134	1	2	1	1	1	47	2.765

TABLE XLIX (Continued)

Subject Code Number	A	B	C	D	E	F	G
E135	19	1	1	1	1	55	2.909
E136	19	1	1	1	1	45	2.600
E137	1	2	1	1	1	45	3.311
E138	19	1	1	1	1	48	3.333
E139	1	2	1	1	1	43	3.604
E140	16	2	2	1	2	43	2.302
E141	19	1	1	1	1	46	2.348
E142	1	2	1	1	1	50	2.080
E143	1	2	1	1	1	47	2.489
E144	19	1	1	1	1	44	2.386
E145	19	1	1	1	1	47	2.744
E146	2	2	1	1	1	44	3.227
E147	19	1	1	1	1	48	2.687
E148	19	1	1	1	1	51	4.000
E149	19	1	1	1	1	46	2.760
E150	19	1	1	1	1	49	3.755
E151	19	1	1	1	1	45	2.422
E152	19	1	1	1	1	44	2.250
E153	1	2	1	1	1	44	3.159
E154	19	1	2	2	1	46	3.586
E155	8	2	1	1	1	58	3.603
E156	2	2	1	1	1	47	3.382
E157	19	1	1	1	1	43	2.046
E158	4	2	1	1	1	47	2.425
E159	2	2	1	1	1	47	3.340
E160	19	1	1	1	1	42	2.166
E161	19	1	1	1	1	60	3.282
E162	19	1	2	1	1	71	2.070
E163	19	1	3	2	1	79	2.974
E164	20	3	1	1	1	76	2.684
E165	2	2	1	1	1	103	2.068
E166	4	2	1	1	1	83	2.915
E167	1	2	1	1	1	71	3.690
E168	19	1	1	1	1	79	2.405
E169	3	2	2	1	2	57	2.105
E170	19	1	1	1	1	56	2.428
E171	3	2	1	1	1	50	2.680
E172	19	1	1	1	1	47	3.765
E173	16	2	1	1	1	110	2.354
E174	7	3	1	1	1	80	2.225
E175	19	1	1	1	1	63	3.349
E176	17	2	2	1	1	42	1.642
E177	19	1	1	1	1	81	3.703
E178	19	1	1	1	1	82	2.134
E179	2	2	1	1	1	83	2.879
E180	19	1	1	1	1	78	2.794

TABLE XLIX (Continued)

Subject Code Number	A	B	C	D	E	F	G
E181	19	1	1	1	1	45	3.022
E182	16	2	2	1	1	85	2.964
E183	19	1	1	1	1	47	3.531
E184	19	1	1	1	1	48	3.500
E185	19	1	2	1	2	56	2.642
E186	19	1	2	1	2	48	2.375
E187	1	2	1	1	1	83	2.277
E188	6	3	2	1	1	78	1.935
E189	16	2	2	1	2	90	1.560
E190	16	2	3	1	1	87	3.597
E191	16	2	1	1	1	85	2.694
E192	5	3	3	2	2	40	2.350
E193	19	1	1	1	1	60	2.500
E194	19	1	2	1	1	61	2.295
E195	19	1	1	1	1	45	2.711
E196	3	2	1	1	1	91	2.373
E197	19	1	1	1	1	53	3.320
E198	16	2	1	1	1	78	2.051
E199	2	2	1	1	1	83	2.927
E200	19	1	1	1	1	79	3.126
E201	16	2	2	1	1	80	1.550
E202	7	3	1	1	1	83	2.710
E203	1	2	3	3	1	50	2.700
E204	5	3	3	3	2	63	2.142
E205	19	1	1	1	1	81	3.444
E206	16	2	1	1	1	77	2.168
E207	18	2	1	1	1	81	2.259
E208	7	3	1	1	1	76	2.026
E209	3	2	1	1	1	45	2.488
E210	19	1	1	1	1	47	2.106
E211	3	2	1	1	1	82	2.439
E212	19	1	1	1	1	101	2.237
E213	17	2	2	1	2	68	3.735
E214	19	1	1	1	1	48	2.646
E215	19	1	1	1	1	81	2.469
E216	19	1	1	1	1	53	2.415
E217	16	2	2	1	2	82	2.036
E218	3	2	1	1	1	47	2.531
E219	4	2	1	1	1	47	2.319
E220	18	2	2	1	1	101	1.960
M							2.6484
SD							0.5726

TABLE L

THE MAJORS, CERTIFICATIONS, ADMISSION-REJECTION STATUS, SPEECH AND ESSAY RATINGS, TOTAL HOURS ATTEMPTED, AND TOTAL GPA'S FOR THE COLLEGE OF HOME ECONOMICS

Subject Code Number	A	B	C	D	E	F	G
H01	14	2	1	1	1	82	2.305
H02	14	2	1	1	1	127	2.275
H03	14	2	1	1	1	64	2.172
H04	15	1	1	1	1	95	2.736
H05	15	1	1	1	1	117	2.075
H06	14	2	1	1	1	128	2.390
H07	14	2	1	1	1	79	2.392
H08	15	1	1	1	1	81	3.345
H09	15	1	1	1	1	96	2.552
H10	14	2	1	1	1	81	2.740
H11	14	2	1	1	1	67	2.268
H12	15	1	2	2	1	76	2.394
H13	15	1	1	1	1	73	2.205
H14	14	2	1	1	1	81	2.506
H15	15	1	1	1	1	101	2.000
H16	14	2	1	1	1	79	2.759
H17	14	2	1	1	1	76	3.157
H18	14	2	1	1	1	85	3.105
H19	14	2	2	1	1	55	1.909
H20	14	2	1	1	1	96	2.781
H21	14	2	1	1	1	66	3.257
H22	14	2	1	1	1	59	3.000
H23	14	2	1	1	1	52	2.346
H24	14	2	1	1	1	47	2.978
H25	14	2	1	1	1	46	2.413
H26	15	1	1	1	1	49	3.060
H27	14	2	1	1	1	49	2.693
H28	14	2	1	1	1	50	2.260
H29	14	2	1	1	1	48	3.470
H30	14	2	1	1	1	46	3.217
H31	14	2	1	1	1	48	2.729
H32	14	2	1	1	1	47	2.000
H33	14	2	2	1	1	45	1.866
H34	14	2	1	1	1	57	3.087
H35	15	1	1	1	1	49	2.959
H36	14	2	1	1	1	54	2.722
H37	14	2	1	1	1	48	2.000
H38	14	2	2	3	1	47	2.638
H39	14	2	1	1	1	46	2.065
H40	14	2	1	1	1	47	2.297
H41	14	2	1	1	1	84	3.333
H42	15	1	3	1	2	69	2.463

TABLE L (Continued)

Subject Code Number	A	B	C	D	E	F	G
H43	14	2	1	1	1	62	3.516
H44	14	2	1	1	1	89	3.213
H45	14	2	1	1	1	54	2.833
H46	14	2	2	2	2	47	2.468
H47	14	2	1	1	1	50	3.160
H48	14	2	1	1	1	80	3.087
H49	14	2	1	1	1	71	2.619
H50	14	2	2	1	2	82	2.182
H51	14	2	1	1	1	49	3.734
H52	14	2	1	1	1	59	3.762
H53	14	2	1	1	1	51	3.176
H54	14	2	1	1	1	83	3.156
H55	14	2	1	1	1	81	2.641
H56	14	2	1	1	1	123	2.455
H57	15	1	1	1	1	77	2.766
H58	14	2	1	1	1	56	3.089
H59	14	2	2	1	1	56	2.500
M							2.6996
SD							0.4737

TABLE LI

HOURS ATTEMPTED AND GPA'S IN ENGLISH, MATHEMATICS, SOCIAL STUDIES, AND SCIENCE IN THE COLLEGE OF AGRICULTURE

Subject Code Number	English		Mathematics		Social Studies		Science	
	Hours	GPA	Hours	GPA	Hours	GPA	Hours	GPA
A01	11	1.727	3	2.000	12	2.250	46	2.370
A02	11	1.812	3	2.000	9	2.333	20	1.200
A03	11	3.545	6	4.000	12	3.500	50	2.360
A04	16	1.437	4	2.000	6	1.500	29	1.172
A05	13	1.769	3	3.000	6	2.000	20	2.150
A06	7	3.286	3	2.000	6	3.000	22	2.045
A07	9	2.111	3	2.000	3	3.000	26	1.154
A08	7	1.714	3	1.000	3	2.000	30	1.500
A09	9	2.000	5	2.000	3	3.000	29	1.897
A10	7	1.000			6	2.000	22	2.455
A11	9	2.889	3	4.000	3	2.000	25	2.080
A12	10	2.600	5	1.000	9	3.000	27	1.667
A13	8	2.500	3	3.000	9	3.000	38	2.474
A14	5	4.000	3	4.000	6	1.500	20	2.200
A15	8	2.000	6	2.500	6	1.500	12	1.333
A16	7	2.286	5	3.000			19	1.947
A17	7	2.857	3	2.000	6	2.500	16	2.000
A18	10	1.400	3	1.000	9	1.111	21	1.238
A19	8	1.250	5	3.000	18	2.056	45	2.089
A20	8	2.500	6	1.500	12	3.500	17	1.706
A21	8	2.250	3	4.000	9	3.000	32	2.469
A22	15	3.133	3	3.000	9	2.000	23	2.652
A23	11	1.364	5	2.000	9	2.333	28	2.000
A24	8	1.625	6	1.000	9	1.333	22	1.455
A25	12	2.000	6	2.000	8	2.375	8	3.000
A26	9	2.333	3	1.000	12	1.500	32	1.094
A27	8	2.000	3	3.000	12	3.000	19	2.368
A28	11	2.455	3	2.000	15	2.000	18	1.556
A29	12	2.250			15	1.400	26	1.654
A30	9	1.667	3	4.000	9	1.000	26	1.462
A31	11	2.091	3	2.000	14	2.786	17	2.118
A32	8	2.375	3	1.000	9	2.333	17	2.529
A33	11	1.909	4	2.000	14	2.357	22	1.818
M		2.1859		2.3226		2.2552		1.9155
SD		0.6709		0.9878		0.6850		0.4969

TABLE LII

HOURS ATTEMPTED AND GPA'S IN ENGLISH, MATHEMATICS, SOCIAL STUDIES, AND SCIENCE IN THE COLLEGE OF ARTS AND SCIENCES

Subject Code Number	English		Mathematics		Social Studies		Science	
	Hours	GPA	Hours	GPA	Hours	GPA	Hours	GPA
S01	9	3.000	9	1.333	56	2.500	19	2.632
S02	7	2.286	3	2.000	24	.750	5	0.000
S03	18	2.667	3	1.000	20	1.650	24	1.000
S04	10	1.200			86	2.453	15	.800
S05	9	2.222	16	1.187	11	1.909	72	2.222
S06	10	2.300	11	0.000	39	1.538	16	1.250
S07	6	2.500	28	1.750	13	2.769	25	1.880
S08	6	4.000	3	3.000	13	4.000	24	3.500
S09	10	2.500	31	2.258	17	1.941	12	2.000
S10	10	2.200	10	1.000	11	2.364	12	1.333
S11	7	3.714	5	1.000	9	3.333	67	3.343
S12	9	3.556	11	1.273	12	2.000	59	1.949
S13	7	2.000	11	1.455	15	1.600	25	1.160
S14	5	4.000	3	3.000	10	3.300	20	2.950
S15	7	3.000			11	3.273	8	4.000
S16	9	3.000	3	2.000	24	2.958	17	2.235
S17	9	2.333	3	4.000	9	3.667	12	2.000
S18	20	2.700	3	2.000	9	1.333	16	1.000
S19	7	3.000	6	3.000	9	3.333	36	3.111
S20	5	2.000			14	1.429	12	1.333
S21	8	3.625	3	2.000	35	3.314	16	2.750
S22	9	2.444	19	3.842			36	3.889
S23	11	2.909	3	3.000	12	4.000	16	2.750
S24	14	3.643	3	4.000	12	4.000	12	3.417
S25	7	2.286	6	2.500	11	2.000	38	2.553
S26	16	3.000	5	3.000	12	3.250	16	2.812
S27	5	2.000	6	2.000	14	2.214	16	2.312
S28	7	2.286	3	3.000	27	2.889	16	1.750
S29	15	2.800	3	2.000	6	2.500	12	2.000
S30	11	3.455	3	4.000	30	3.500	15	3.067
S31	9	4.000	3	4.000	9	4.000	12	4.000
S32	9	2.222	10	2.500	11	3.636	36	3.556
S33	13	2.231	3	3.000	9	2.333	16	2.500
S34	9	2.556	6	2.500	11	2.364	34	2.971
S35	5	4.000	3	4.000	9	3.333	12	3.667
S36	11	2.636	6	3.000	17	2.235	16	1.500
S37	7	2.714			18	1.333	8	2.000
S38	13	4.000	3	4.000	15	3.800	16	4.000
S39	8	3.750	3	3.000	9	3.333	16	3.937
S40	2	3.000	3	2.000	12	2.000	16	2.000
S41	5	2.000	10	1.500	4	3.000	24	2.333
S42	5	3.400			14	2.786	4	3.000

TABLE LII (Continued)

Subject Code Number	English Hours	English GPA	Mathematics Hours	Mathematics GPA	Social Studies Hours	Social Studies GPA	Science Hours	Science GPA
S43	5	1.000	9	2.000	6	2.500	24	1.833
S44	7	3.000	8	2.375	6	2.500	40	3.200
S45	6	2.000	8	2.375	7	2.000	20	2.650
S46	8	.375			8	1.250		
S47	12	2.250	6	1.500	6	3.000		
S48	5	3.000			7	2.429	8	3.000
S49	8	3.750	3	4.000	9	3.667	17	3.765
S50	7	4.000	15	3.333	9	3.333	12	3.333
S51	8	2.000	5	3.000	6	2.500	8	2.500
S52	5	3.000	3	2.000	9	1.667	8	2.500
S53	9	3.667	3	4.000	9	3.333	8	3.500
S54	9	3.333	3	3.000	7	3.571	13	3.308
S55	5	2.000	3	2.000	3	4.000		
S56	9	3.000	5	2.000	6	2.500	12	3.000
S57	5	3.000	3	4.000	11	2.636	20	2.850
S58	5	3.600	10	2.500	3	2.000	8	2.500
S59	8	4.000	3	4.000	8	2.500	8	3.000
S60	10	4.000	5	4.000	9	4.000	12	3.667
S61	7	2.000			3	2.000	4	2.000
S62	7	2.286	5	3.000	18	2.667	8	2.000
S63	8	3.000	8	2.250	9	2.000	8	1.500
S64	10	2.500	5	4.000	9	2.667	16	2.750
S65	3	4.000	3	3.000			4	2.000
S66	8	4.000			9	3.667	15	3.533
S67	7	2.714	3	3.000	3	2.000	8	1.500
S68	7	2.286	3	2.000	4	2.000	18	2.556
S69	7	3.000	3	2.000	3	4.000	4	4.000
S70	6	3.500	3	3.000	9	3.333	8	3.500
S71	5	3.000	10	3.500	9	3.333	20	3.600
S72	7	2.000	3	2.000	15	2.800	16	2.500
S73	7	2.000			9	2.000	17	1.706
S74	5	3.400	3	2.000	9	2.667	8	3.000
S75	5	1.000			3	2.000		
S76	8	1.250			14	.857	4	1.000
S77	5	3.000			15	3.200	15	2.733
S78	5	3.600	6	3.000	9	4.000	12	4.000
S79	15	3.000	3	2.000	11	1.545	12	2.333
S80	7	1.000			3	1.000	4	2.000
S81	21	3.286	3	1.000	27	2.778	12	3.500
S82	9	2.000	6	1.000	18	2.167	8	2.000
S83	9	4.000	22	3.045	18	3.167	13	2.769
S84	6	3.000	6	2.000	9	2.333	10	2.600
S85	6	1.500			18	1.667	12	2.000
S86	6	2.000	6	1.000	41	2.634	12	2.333
S87	9	3.000			23	3.609	8	4.000
S88	9	3.000			6	1.500	8	1.500

TABLE LII (Continued)

Subject Code Number	English Hours	English GPA	Mathematics Hours	Mathematics GPA	Social Studies Hours	Social Studies GPA	Science Hours	Science GPA
S89	9	3.000	6	1.500	29	2.414	17	2.235
S90	6	2.000			6	2.000	4	1.000
S91	12	3.000	15	3.133	6	2.500	5	1.000
S92	6	3.500			4	3.250	4	2.000
M		2.7819		2.5152		2.6340		2.5252
SD		0.8153		0.9759		0.8270		0.9074

TABLE LIII

HOURS ATTEMPTED AND GPA'S IN ENGLISH, MATHEMATICS, SOCIAL STUDIES, AND SCIENCE IN THE COLLEGE OF BUSINESS

Subject Code Number	English		Mathematics		Social Studies		Science	
	Hours	GPA	Hours	GPA	Hours	GPA	Hours	GPA
B01	10	1.500	6	2.000	15	2.000	4	2.000
B02	5	3.000	3	2.000	14	2.286	8	2.500
B03	5	4.000	3	2.000	15	2.000	4	2.000
B04	5	4.000	6	4.000	15	4.000	4	4.000
B05	6	3.000	21	4.000	12	3.500	20	3.200
B06	5	2.000	8	.625	15	2.000	8	1.500
B07	3	3.000	5	3.000	12	2.750	4	2.000
B08	5	3.000	3	3.000	9	2.333	4	3.000
B09	8	2.250	3	4.000	9	2.000	8	2.000
B10	5	2.000	3	3.000	6	1.500		
B11	3	4.000	3	3.000	9	2.667	8	3.000
B12	5	3.000			8	2.000	12	3.000
B13	5	2.000	3	4.000	9	2.667	9	3.000
B14	5	3.000	5	2.000	6	2.000	4	2.000
B15	3	3.000	3	2.000	6	2.500		
B16	5	2.000	3	3.000	14	2.000	4	2.000
B17	3	3.000	5	3.000	9	2.667	8	4.000
B18	6	2.000	3	4.000	12	2.750	10	3.100
B19	6	2.000			15	1.400	4	2.000
B20	6	2.000			15	2.800	12	2.000
B21	6	4.000	7	2.857	15	2.400	9	2.556
B22	9	2.000	5	3.600	8	2.000	7	2.571
B23	9	2.333	6	3.000	15	2.600	10	2.600
B24	12	3.000	10	2.600	18	2.000	8	2.000
M		2.7118		2.8896		2.3675		2.5467
SD		0.7594		0.8923		0.5779		0.6751

TABLE LIV

HOURS ATTEMPTED AND GPA'S IN ENGLISH, MATHEMATICS, SOCIAL STUDIES, AND SCIENCE IN THE COLLEGE OF EDUCATION

Subject Code Number	English		Mathematics		Social Studies		Science	
	Hours	GPA	Hours	GPA	Hours	GPA	Hours	GPA
E01	6	2.500	12	3.500	24	2.125	6	2.000
E02	2	2.000	6	3.000	3	2.000		
E03	9	3.000			9	2.000	11	2.364
E04	6	2.500			9	1.667	12	1.333
E05	6	3.500			7	2.857	16	2.750
E06	5	3.000	25	2.800	8	2.000	12	1.167
E07	9	2.333	3	2.000	16	2.437	10	2.000
E08	13	1.077	11	.818	38	2.605	16	3.250
E09	5	1.600	10	0.000	12	1.250	7	2.000
E10	5	3.000	20	2.250	17	1.706	12	2.333
E11	14	3.000	6	2.000	12	1.500	15	1.733
E12	5	1.800	8	1.625	15	1.400	22	1.318
E13	14	3.000			6	2.500	8	2.000
E14	8	1.625	5	2.000	8	1.750	8	1.500
E15	10	1.500	5	2.000	34	1.941	12	.667
E16	8	3.000	19	2.474	8	3.000	15	2.600
E17	3	0.000			11	.364	15	.467
E18	10	.500	5	3.000	9	2.000	8	1.000
E19	7	2.000			8	1.375	22	2.364
E20	5	2.000	9	2.333	27	2.000	10	2.300
E21	10	1.900	8	1.125	17	1.765	16	1.250
E22	11	2.000	3	3.000	41	2.073	14	2.000
E23	5	2.000	3	3.000	35	1.943	14	2.286
E24	5	4.000	9	3.333	6	2.500	25	3.040
E25	22	1.500			9	1.333	8	1.500
E26	16	1.625	3	3.000	15	.600	12	2.667
E27	8	2.625	9	2.667	9	1.667	8	2.500
E28	5	2.000	3	2.000	27	3.333	18	1.889
E29	8	2.000	6	1.500	12	1.750	12	1.000
E30	12	1.917	6	3.000	12	2.250	11	1.636
E31	5	3.000	15	.333	6	1.500	16	2.250
E32	9	2.222	5	3.000	6	1.000	22	2.773
E33	22	3.182	22	2.136	9	2.667	8	2.500
E34	10	4.000	3	4.000	6	3.500	9	4.000
E35	13	2.538	6	2.500	9	2.667	16	2.250
E36	13	2.154	6	3.000	3	1.000	32	1.000
E37	11	2.545	6	3.000	14	2.714	15	2.200
E38	8	2.375	8	2.625	14	3.000	17	3.118
E39	12	3.250	31	3.548	11	4.000	8	3.500
E40	14	2.571			12	2.500	16	2.500
E41	9	4.000	3	4.000	12	3.000	12	3.333
E42	11	2.000	6	2.000	9	1.333	11	2.000

TABLE LIV (Continued)

Subject Code Number	English Hours	English GPA	Mathematics Hours	Mathematics GPA	Social Studies Hours	Social Studies GPA	Science Hours	Science GPA
E43	11	1.909	3	2.000	9	1.333	12	2.000
E44	7	2.714	6	4.000	26	2.654	11	3.000
E45	5	1.000	21	2.476	11	2.091	13	1.692
E46	20	3.000			16	2.750	8	3.000
E47	9	.667	13	2.385	10	1.000	13	1.385
E48	5	3.400			50	1.940	7	1.571
E49	19	2.105	3	0.000	12	1.333	8	1.500
E50	11	3.182	3	3.000	18	3.333	12	3.333
E51	14	3.214	3	2.000	14	2.214	15	2.400
E52	8	2.250	3	2.000	12	1.500	11	2.000
E53	7	4.000	26	2.538	11	3.727	20	3.600
E54	7	2.286	5	1.000	4	2.000	8	1.000
E55	7	1.714	3	2.000	4	2.000	12	1.667
E56	5	2.000	5	1.000	7	2.000	16	2.000
E57	19	3.368	3	2.000	12	2.750	12	2.667
E58	13	2.615	3	4.000	9	2.333	12	3.000
E59	14	3.143			9	2.667	11	3.000
E60	5	2.000	9	2.000	13	1.846	11	2.636
E61	9	2.000	3	0.000	15	2.000	12	1.750
E62	6	2.000	3	2.000	12	1.250	7	1.000
E63	9	1.667	4	3.000	15	1.600	23	1.217
E64	5	4.000	5	2.000	19	2.421	11	2.273
E65	6	3.000			9	3.000	8	3.500
E66	15	3.000	6	1.500	12	3.000	21	2.810
E67	24	3.000	3	2.000	12	3.250	8	3.000
E68	12	3.250	3	3.000	12	3.250	12	3.000
E69	20	2.950			12	3.000	13	2.308
E70	18	3.833			8	4.000	8	4.000
E71	17	2.294			9	1.667	8	2.500
E72	8	3.625			9	3.000	7	2.571
E73	11	2.727	3	2.000	14	2.000	12	2.667
E74	11	2.727			6	1.500	8	2.000
E75	8	3.375	8	3.000	9	2.667	9	2.444
E76	8	3.000	6	4.000	3	3.000	12	3.333
E77	5	3.600	3	4.000	11	3.273	8	3.500
E78	8	3.625	3	2.000	8	2.000	8	3.000
E79	8	3.000			11	.727	8	1.500
E80	10	2.500	3	2.000	3	2.000	12	2.000
E81	11	2.000	3	2.000	9	2.000	11	1.636
E82	5	4.000	13	4.000	8	4.000	13	4.000
E83	8	3.250	3	4.000	8	3.500	11	3.273
E84	5	4.000	3	4.000	3	3.000	12	2.667
E85	7	2.000	11	3.273	4	3.000	12	2.667
E86	11	2.636	6	3.000	4	3.000	8	3.000
E87	8	1.625	6	3.000	4	1.000	8	2.500
E88	8	3.625			9	3.333	8	3.000

TABLE LIV (Continued)

Subject Code Number	English Hours	English GPA	Mathematics Hours	Mathematics GPA	Social Studies Hours	Social Studies GPA	Science Hours	Science GPA
E89	13	3.385	3	1.000	3	2.000	13	1.308
E90	5	3.000	16	2.812	9	3.000	8	3.000
E91	8	2.000	8	3.000			8	2.000
E92	8	2.000			11	2.364	8	2.000
E93	11	3.000	3	2.000	9	2.333	8	2.500
E94	5	2.400	6	4.000	6	3.500	15	3.467
E95	11	1.727	3	2.000	9	2.333	8	2.500
E96	7	2.714			6	2.000	12	2.333
E97	8	3.000	3	2.000	3	1.000	4	4.000
E98	5	3.000	5	2.000	6	2.000	8	2.000
E99	11	3.000	3	1.000	15	3.000	8	2.125
E100	11	3.000					12	2.667
E101	5	3.600	6	3.500	6	3.000	7	4.000
E102	8	1.250	3	1.000	3	2.000	8	1.000
E103	5	3.000	3	3.000	6	2.000	7	1.857
E104	5	3.000	3	4.000	6	3.000	12	3.333
E105	5	2.000	5	2.000	9	2.667	7	2.000
E106	8	2.000	3	2.000	11	2.364	8	1.625
E107	17	3.176			6	3.000	8	3.500
E108	8	2.625	3	3.000	4	1.000	8	2.000
E109	11	2.909			11	2.364	8	1.500
E110	8	2.625			6	2.500	12	3.000
E111	5	2.000			9	2.333	12	2.333
E112	5	2.000	13	2.385	6	3.000	12	2.000
E113	11	2.455	6	2.500	6	2.000	4	2.000
E114	8	2.375	3	3.000	11	2.273	4	3.000
E115	11	3.000			3	3.000	8	2.000
E116	7	1.714			10	1.600	12	2.333
E117	3	3.000	15	2.667	6	1.500	8	2.500
E118	7	3.000	6	3.000	11	2.000	8	2.500
E119	8	4.000	6	3.500	6	4.000	12	3.667
E120	11	2.727	6	3.500	6	2.500	8	2.500
E121	7	3.000	9	3.333	6	1.500	12	1.000
E122	12	2.583			11	2.182	4	2.000
E123	5	2.000	3	1.000	6	1.000	13	.615
E124	5	2.000	3	1.000	9	1.667	8	2.000
E125	8	3.000	3	4.000	6	3.000	16	3.312
E126	8	2.375	3	3.000	3	1.000	11	1.000
E127	5	4.000	15	3.333	6	3.000	8	3.000
E128	9	2.222	8	2.000	6	1.000	5	1.000
E129	8	2.375	6	2.500	3	2.000	11	3.273
E130	8	4.000	3	4.000	6	2.500	8	3.000
E131	5	4.000	6	4.000	11	4.000	8	3.500
E132	5	2.000			3	3.000	14	2.000
E133	11	3.000	3	1.000	11	4.000	4	3.000
E134	11	2.727			6	2.500	8	2.500

TABLE LIV (Continued)

Subject Code Number	English Hours	English GPA	Mathematics Hours	Mathematics GPA	Social Studies Hours	Social Studies GPA	Science Hours	Science GPA
E135	8	3.625	6	3.500	9	2.333	12	2.667
E136	8	3.000			6	2.000	12	2.000
E137	8	3.625			6	3.000	12	3.000
E138	7	3.714	10	3.000	6	3.000	12	3.667
E139	11	3.455			8	4.000	8	3.500
E140	5	2.000	6	2.000			14	2.000
E141	5	3.000	3	3.000	4	2.000	8	1.875
E142	15	1.600			8	2.000	8	2.500
E143	10	3.500			6	2.000	8	1.500
E144	7	2.714	3	3.000	6	2.000	8	2.000
E145	8	3.000	8	3.000	4	2.000	8	3.000
E146	5	3.000	11	4.000	8	3.000	8	3.000
E147	8	2.625	6	3.000	3	1.000	12	2.667
E148	9	4.000			14	4.000	7	4.000
E149	8	3.000	5	4.000	9	2.333	8	2.500
E150	5	4.000	3	4.000	6	3.000	12	3.667
E151	5	2.000	8	2.000	3	2.000	3	3.000
E152	8	2.625	3	2.000	8	2.500	8	2.000
E153	5	3.000	5	4.000	6	3.000	8	2.625
E154	6	4.000	6	4.000	6	3.000	12	3.667
E155	5	3.600					4	3.000
E156	8	3.000	13	4.000	9	3.000	8	3.000
E157	5	3.000	13	1.846	8	2.500	11	1.636
E158	5	2.000	13	2.385	6	3.000	12	2.333
E159	5	3.000	13	3.385	8	2.500	8	3.000
E160	11	1.909	3	2.000	3	3.000	12	2.250
E161	11	3.273	6	3.500	10	2.600	11	3.364
E162	12	1.750	3	2.000	14	1.500	16	2.562
E163	14	2.929	3	3.000	15	3.000	7	3.000
E164	12	2.500			9	2.333	8	2.500
E165	8	2.250	29	2.000	15	2.600	29	1.586
E166	6	3.000	6	3.000	6	3.000	17	2.647
E167	24	4.000			9	3.333	4	3.000
E168	6	2.500	5	2.000	12	2.250	9	2.444
E169	6	2.000	6	1.500	20	1.950	11	2.364
E170	8	2.000	3	2.000	6	1.500	11	2.364
E171	8	3.000			16	2.437	8	2.000
E172	8	3.625	3	4.000	8	4.000	11	3.636
E173	9	1.667	5	2.000	16	1.562	12	1.667
E174	6	2.000	6	1.500	11	2.818	13	1.231
E175	9	3.667	11	3.727	6	2.500	8	3.500
E176	6	2.000	9	1.556	3	2.000	8	.500
E177	12	3.500	6	4.000	21	3.429	5	4.000
E178	12	2.000	6	2.000	21	2.286	9	2.000
E179	9	2.333	14	3.643	12	1.750	19	3.263
E180	12	2.500	6	4.000	17	2.353	11	2.364

TABLE LIV (Continued)

Subject Code Number	English Hours	English GPA	Mathematics Hours	Mathematics GPA	Social Studies Hours	Social Studies GPA	Science Hours	Science GPA
E181	9	3.000			6	3.500	7	2.429
E182	6	1.500	9	2.667	11	2.000	8	2.500
E183	6	3.500	3	4.000	12	3.250	15	3.733
E184	9	4.000	6	3.000	9	4.000	10	3.000
E185	9	2.333	6	3.000	9	2.333	8	2.500
E186	6	2.500			15	2.800	10	1.000
E187	24	2.500			6	1.500	8	.875
E188	6	2.000	2	2.000	11	1.727	4	0.000
E189	17	1.235	18	1.000	15	1.400	15	.733
E190	6	2.500	5	3.000	6	3.500	8	4.000
E191	6	2.000	11	2.182	6	2.500	4	3.000
E192	5	1.000			9	2.000	4	2.000
E193	9	2.000			12	2.250	16	2.750
E194	12	1.750	3	3.000	9	1.667	7	2.000
E195	8	3.000	3	4.000	9	2.333	10	2.000
E196	8	2.375	9	3.000	14	2.286	18	1.944
E197	9	3.333	3	4.000	9	2.667		
E198	6	2.000	8	1.375	11	1.727	12	1.333
E199	6	2.500	27	3.259	9	3.000	14	2.643
E200	9	3.000	6	3.500	21	3.000	16	3.000
E201	6	2.000	3	2.000	21	1.000	20	1.800
E202	6	2.000	6	2.000	18	2.833	11	3.273
E203	12	3.500			6	3.000	7	2.857
E204	10	2.300	3	2.000	6	1.500	11	2.000
E205	13	3.769	6	3.500	9	3.333	15	2.800
E206	6	2.500	15	.333	13	2.615	8	2.500
E207	6	2.500			11	2.182		
E208	8	2.000	12	1.500	17	2.353	15	1.733
E209	6	2.000			17	2.588	8	2.000
E210	6	2.500			9	1.333	18	1.833
E211	16	2.500	8	2.375	33	2.545	7	2.000
E212	10	2.500			26	2.077	9	2.000
E213	6	3.000	6	3.000	6	4.000	37	4.000
E214	9	3.000			9	2.000	4	1.000
E215	18	2.167	6	2.000	11	2.182	11	2.000
E216	6	3.000	6	3.000	9	1.667	12	2.250
E217	6	2.000	3	0.000	6	2.000	8	1.000
E218	8	2.625	5	2.000	16	2.562	4	3.000
E219	6	2.000	6	2.500	6	1.500	13	2.615
E220	12	.833	6	1.333	9	1.333		
M		2.6199		2.5645		2.3466		2.3741
SD		0.7618		0.9872		0.7680		0.8187

TABLE LV

HOURS ATTEMPTED AND GPA'S IN ENGLISH, MATHEMATICS, SOCIAL STUDIES AND SCIENCE IN THE COLLEGE OF HOME ECONOMICS

Subject Code Number	English		Mathematics		Social Studies		Science	
	Hours	GPA	Hours	GPA	Hours	GPA	Hours	GPA
H01	9	1.667			12	1.500	12	1.250
H02	5	2.000	3	2.000	12	1.500	6	1.500
H03	5	2.000	3	1.000	12	2.250	8	2.000
H04	9	3.333	3	2.000	30	2.500	16	2.750
H05	11	2.273			18	2.000	12	1.583
H06	9	1.571			15	1.400	14	2.000
H07	5	2.000			9	1.667	16	1.750
H08	8	3.625			18	3.333	8	3.500
H09	16	2.437	3	2.000	17	2.353	12	2.333
H10	5	3.000			6	2.500	11	2.364
H11	5	2.000					17	2.000
H12	11	2.727	6	2.500	9	2.333	16	2.000
H13	10	2.700			9	2.000	13	1.231
H14	7	2.000			8	1.625	17	2.235
H15	5	3.000			18	.833	12	1.333
H16	5	2.000			3	3.000	17	2.294
H17	5	4.000			3	3.000	27	2.667
H18	6	4.000	3	2.000	6	2.500	17	3.176
H19					9	1.667	9	.889
H20	6	2.000			12	2.250	9	2.444
H21	8	3.250			3	2.000	15	3.467
H22	5	3.000			9	2.000	12	3.333
H23	5	3.000					13	2.000
H24	5	3.000			7	3.000	9	2.889
H25	7	3.000					7	2.000
H26	11	3.000			9	2.667	8	3.500
H27	7	3.000			3	2.000	11	2.000
H28	7	2.429			3	2.000	12	1.667
H29	5	4.000			6	3.500	13	2.846
H30	3	2.000			9	3.667	8	3.000
H31	7	3.000			9	2.000	8	2.500
H32	7	2.000			9	1.333	9	1.444
H33	5	2.000					14	1.643
H34	5	3.000			3	2.000	13	3.308
H35	11	3.455			9	2.667	8	2.000
H36	5	2.600			3	3.000	17	2.588
H37	5	4.000			6	2.000	14	3.000
H38	5	3.000	5	3.000			13	2.231
H39	5	2.000			6	2.000	8	1.000
H40	5	3.000					17	2.000
H41	6	3.500			12	3.500	17	2.882
H42	9	2.000	3	3.000	9	3.000	15	2.267

TABLE LV (Continued)

Subject Code Number	English Hours	English GPA	Mathematics Hours	Mathematics GPA	Social Studies Hours	Social Studies GPA	Science Hours	Science GPA
H43	8	4.000			15	3.200	15	3.267
H44	6	2.500			3	4.000	15	3.000
H45	6	3.000			9	2.667	11	2.727
H46	6	2.000					8	1.500
H47	6	3.000			3	3.000	11	2.727
H48	6	2.500	3	4.000	6	3.500	17	2.471
H49	7	2.714	3	2.000	12	2.917	8	2.000
H50	6	2.000			12	2.000	12	1.417
H51	6	3.500			6	4.000	11	3.636
H52	6	4.000			9	3.333	12	4.000
H53	6	3.500			14	3.214	6	3.000
H54	6	3.000			12	3.000	13	3.385
H55	6	2.500	3	2.000	9	2.333	9	3.000
H56	6	2.000	3	3.000	21	2.000	19	1.789
H57	22	2.636	3	4.000	21	2.571	15	2.667
H58	6	3.000	3	3.000	5	2.400	6	2.667
H59	6	1.000			12	2.500	8	2.500
M		2.7313		2.5357		2.4842		2.3833
SD		0.7085		0.8427		0.7135		0.7260

TABLE LVI

RAW SCORES AND PERCENTILE RANKS OF THE STEP TESTS
FOR THE COLLEGE OF AGRICULTURE

Subject Code Number	Writing RS	Writing %ile	Mathematics RS	Mathematics %ile	Social Studies RS	Social Studies %ile	Science RS	Science %ile
A01	38	53	23	44	31	26	33	62
A02	37	48	15	13	32	30	24	24
A03	40	64	43	97	40	54	40	84
A04	32	27	21	38	41	54	32	56
A05	28	11	26	58	35	38	35	71
A06	47	93	37	91	52	89	39	82
A07	33	30	29	72	46	71	35	71
A08	22	4	17	22	30	20	36	71
A09	40	64	21	38	49	85	44	93
A10	26	9	24	48	27	13	28	40
A11	38	53	28	68	41	54	41	88
A12	34	33	32	82	36	38	41	88
A13	35	37	27	62	39	49	37	74
A14	41	68	35	88	48	82	40	84
A15	38	53	34	85	49	85	32	56
A16	34	33	27	62	27	13	34	68
A17	44	78	30	74	49	85	32	56
A18	35	37	23	48	37	44	33	62
A19	30	18	22	41	32	30	33	62
A20	37	48	22	41	40	54	38	78
A21	46	90	31	79	46	71	35	71
A22	27	11	18	25	36	38	20	11
A23	34	33	21	38	27	13	38	78
A24	24	7	19	27	37	44	32	56
A25	42	71	33	82	39	49	34	68
A26	31	22	17	22	39	49	27	35
A27	25	8	22	41	39	49	29	45
A28	29	14	21	38	31	26	20	11
A29	36	42	28	68	46	71	44	93
A30	41	68	19	27	29	15	38	78
A31	41	68	26	58	51	87	35	71
A32	28	11	29	72	31	26	33	62
A33	26	9	20	32	37	44	28	40
M	34.5152		25.4848		38.4545		33.9394	
SD	6.5865		6.4861		7.4795		5.9105	

RS - Raw Score
%ile - Percentile

TABLE LVII

RAW SCORES AND PERCENTILE RANKS OF THE STEP TESTS
FOR THE COLLEGE OF ARTS AND SCIENCES

Subject Code Number	Writing RS	Writing %ile	Mathematics RS	Mathematics %ile	Social Studies RS	Social Studies %ile	Science RS	Science %ile
S01	42	71	32	82	60	97	37	74
S02	27	11	17	22	41	54	27	35
S03	29	14	19	27	50	85	22	18
S04	39	60	27	62	65	99	43	91
S05	29	14	32	82	51	87	47	96
S06	39	60	24	48	45	71	36	71
S07	25	8	25	53	44	66	40	84
S08	53	98	30	74	60	97	45	94
S09	43	75	32	82	35	38	36	71
S10	45	82	40	94	54	92	36	71
S11	43	75	41	96	57	95	51	99
S12	42	71	21	38	37	44	31	50
S13	32	27	24	48	41	54	35	71
S14	38	53	20	32	49	85	33	62
S15	41	68	21	38	40	54	29	45
S16	50	96	40	94	55	93	47	96
S17	39	60	23	44	51	87	35	71
S18	43	75	30	74	39	49	27	35
S19	38	53	27	62	51	87	36	71
S20	33	30	12	7	20	1	14	1
S21	45	82	27	62	54	92	38	78
S22	38	53	38	92	51	87	41	88
S23	42	71	23	44	48	82	35	71
S24	37	48	54	98	30	20	52	99
S25	43	75	34	85	46	71	44	93
S26	47	92	27	62	50	85	36	71
S27	41	68	30	74	50	85	39	82
S28	39	60	31	79	50	85	30	45
S29	46	90	25	53	46	71	24	24
S30	50	96	35	88	55	93	32	56
S31	50	96	43	97	62	98	42	90
S32	37	48	35	88	60	97	44	93
S33	42	71	25	53	59	97	39	82
S34	32	27	29	72	36	38	35	71
S35	44	78	22	41	39	49	30	45
S36	50	96	33	82	49	85	23	20
S37	34	33	20	32	29	15	21	16
S38	46	90	35	88	58	96	44	93
S39	41	68	18	25	53	92	33	62
S40	44	78	24	48	47	76	30	45
S41	45	82	32	82	58	96	47	96
S42	34	33	25	53	58	96	29	45
S43	36	42	39	94	49	85	43	91

TABLE LVII (Continued)

Subject Code Number	Writing RS	Writing %ile	Mathematics RS	Mathematics %ile	Social Studies RS	Social Studies %ile	Science RS	Science %ile
S44	32	27	36	88	46	71	39	82
S45	38	53	27	62	34	33	33	62
S46	23	6	13	8	22	2	21	16
S47	42	71	23	44	51	87	30	45
S48	42	71	26	58	37	44	24	24
S49	49	95	37	91	57	95	40	84
S50	43	75	37	91	44	66	37	74
S51	43	75	27	62	42	61	32	56
S52	43	75	27	62	39	49	27	35
S53	44	78	42	96	46	71	40	84
S54	47	92	28	68	44	66	28	40
S55	42	71	29	72	56	94	38	78
S56	45	82	30	74	54	92	26	29
S57	50	96	31	79	54	92	47	96
S58	42	71	32	82	44	66	39	82
S59	45	82	27	62	48	82	28	40
S60	45	82	28	68	57	95	44	93
S61	43	75	26	58	47	76	30	45
S62	45	82	21	38	51	87	31	50
S63	40	64	25	53	42	61	20	11
S64	46	90	29	72	36	38	31	50
S65	48	93	30	74	38	44	27	35
S66	51	96	26	58	60	97	33	62
S67	35	37	26	58	34	33	30	45
S68	27	11	31	79	41	54	34	68
S69	44	78	25	53	43	66	30	45
S70	45	82	23	44	56	94	35	71
S71	42	71	36	88	53	92	40	84
S72	44	78	29	72	54	92	37	74
S73	45	82	24	48	45	71	38	78
S74	49	95	20	32	46	71	24	24
S75	28	11	19	27	39	49	27	35
S76	46	90	23	44	46	71	39	82
S77	39	60	23	44	40	54	27	35
S78	47	92	30	74	58	96	41	88
S79	38	53	22	41	20	1	27	35
S80	35	37	26	58	42	61	33	62
S81	45	82	27	62	47	76	27	35
S82	27	11	27	62	48	82	33	62
S83	37	48	31	79	35	38	36	71
S84	37	48	12	7	41	54	27	35
S85	31	22	18	25	38	44	26	29
S86	29	14	24	48	43	66	32	56
S87	39	60	23	44	59	97	33	62
S88	41	68	21	38	39	49	24	24

TABLE LVII (Continued)

Subject Code Number	Writing RS	Writing %ile	Mathematics RS	Mathematics %ile	Social Studies RS	Social Studies %ile	Science RS	Science %ile
S89	44	78	25	53	48	82	32	56
S90	45	82	16	18	50	85	36	71
S91	41	68	34	85	51	87	29	45
S92	46	90	21	38	55	93	31	50
M	40.7283		27.5435		46.7609		33.8152	
SD	6.4860		7.1521		9.2468		7.4079	

RS - Raw Score
%ile - Percentile

TABLE LVIII

RAW SCORES AND PERCENTILE RANKS OF THE STEP TESTS
FOR THE COLLEGE OF BUSINESS

Subject Code Number	Writing		Mathematics		Social Studies		Science	
	RS	%ile	RS	%ile	RS	%ile	RS	%ile
B01	48	93	31	79	36	38	30	45
B02	39	60	24	48	37	44	32	56
B03	47	92	29	72	48	82	36	71
B04	44	78	34	85	51	87	32	56
B05	42	71	40	94	47	76	41	88
B06	41	68	27	62	34	33	31	50
B07	41	68	18	25	37	44	26	29
B08	39	60	21	38	42	61	24	24
B09	37	48	22	41	36	38	24	24
B10	42	71	22	41	37	44	24	24
B11	47	92	33	82	47	76	37	74
B12	49	95	19	27	37	44	34	68
B13	41	68	24	48	41	54	37	74
B14	44	78	26	58	34	33	28	40
B15	46	90	28	68	48	82	34	68
B16	39	60	25	53	39	49	33	62
B17	45	82	40	94	47	76	46	95
B18	38	53	23	44	41	54	37	74
B19	44	78	31	79	38	44	24	24
B20	45	82	27	62	48	82	34	68
B21	34	33	15	13	34	33	25	24
B22	38	53	32	82	38	44	27	35
B23	40	64	28	68	39	49	31	50
B24	37	48	27	62	49	85	26	29
M	41.9583		26.9167		41.0417		31.3750	
SD	3.9615		6.2549		5.5441		5.8815	

RS - Raw Score
%ile - Percentile

TABLE LIX

RAW SCORES AND PERCENTILE RANKS OF THE STEP TESTS
FOR THE COLLEGE OF EDUCATION

Subject Code Number	Writing		Mathematics		Social Studies		Science	
	RS	%ile	RS	%ile	RS	%ile	RS	%ile
E01	47	92	35	88	51	87	34	68
E02	40	64	36	88	47	76	48	98
E03	39	60	24	48	43	66	34	68
E04	41	68	21	38	43	66	32	56
E05	50	96	27	62	57	95	31	50
E06	41	68	41	96	54	92	40	84
E07	23	6	14	11	38	44	24	24
E08	40	64	28	68	68	99	51	99
E09	34	33	31	79	43	66	44	93
E10	40	64	36	88	59	97	43	91
E11	36	42	26	58	48	82	26	29
E12	41	68	28	68	51	87	39	82
E13	38	53	23	44	47	76	38	78
E14	42	71	26	58	42	61	26	29
E15	31	22	24	48	47	76	36	71
E16	41	68	40	94	44	66	42	90
E17	27	11	20	32	33	30	30	45
E18	29	14	25	53	48	82	36	71
E19	32	27	21	38	41	54	32	56
E20	39	60	29	72	38	44	22	18
E21	42	71	19	27	41	54	24	24
E22	40	64	34	85	53	92	42	90
E23	35	37	31	79	53	92	33	62
E24	35	37	28	68	37	44	37	74
E25	42	71	25	53	42	61	27	35
E26	46	90	26	58	39	49	31	50
E27	40	64	27	62	32	30	20	11
E28	44	78	29	72	59	97	44	93
E29	38	53	25	53	42	61	30	45
E30	35	37	20	32	29	15	21	16
E31	46	90	28	68	56	94	48	98
E32	29	14	28	68	47	76	41	88
E33	43	75	31	79	56	94	26	29
E34	35	37	25	53	41	54	33	62
E35	40	64	30	74	48	82	38	78
E36	37	48	25	53	37	44	35	71
E37	42	71	24	48	43	66	38	78
E38	40	64	35	88	48	82	36	71
E39	47	92	41	96	51	87	38	78
E40	34	33	23	44	48	82	32	56
E41	53	98	37	91	41	54	31	50
E42	31	22	22	41	42	61	29	45
E43	42	71	16	18	30	20	27	35

TABLE LIX (Continued)

Subject Code Number	Writing RS	Writing %ile	Mathematics RS	Mathematics %ile	Social Studies RS	Social Studies %ile	Science RS	Science %ile
E44	40	64	16	18	40	54	30	45
E45	41	68	35	88	57	95	47	96
E46	52	98	26	58	51	87	27	35
E47	24	7	25	53	39	49	35	71
E48	32	27	18	25	45	71	26	29
E49	40	64	23	44	46	71	31	50
E50	45	82	23	44	54	92	22	18
E51	42	71	28	68	36	38	25	24
E52	36	42	21	38	36	38	29	45
E53	52	98	33	82	54	92	40	84
E54	33	30	29	72	40	54	37	74
E55	43	75	33	82	46	71	40	84
E56	45	82	32	82	53	92	42	90
E57	40	64	19	27	48	82	27	35
E58	46	90	27	62	53	92	29	45
E59	42	71	22	41	42	61	28	40
E60	31	22	17	22	44	66	29	45
E61	38	53	20	32	36	38	21	16
E62	28	11	9	3	20	1	18	7
E63	32	27	21	38	43	66	25	24
E64	30	18	26	58	40	54	36	71
E65	41	68	25	53	46	71	37	74
E66	40	64	22	41	29	15	23	20
E67	49	95	32	82	57	95	33	62
E68	40	64	22	41	36	38	29	45
E69	51	96	27	62	52	89	34	68
E70	40	64	31	79	55	93	42	90
E71	41	68	29	72	48	82	33	62
E72	37	48	28	68	58	96	37	74
E73	43	75	24	48	49	85	30	45
E74	39	60	19	27	34	33	33	62
E75	50	96	26	58	49	85	33	62
E76	36	42	22	41	44	66	35	71
E77	44	78	33	82	48	82	36	71
E78	44	78	21	38	47	76	26	29
E79	39	60	20	32	50	85	24	24
E80	36	42	15	13	25	9	19	10
E81	40	64	27	62	39	49	26	29
E82	50	96	40	94	53	92	43	91
E83	43	75	21	38	50	85	35	71
E84	35	37	26	58	38	44	30	45
E85	41	68	30	74	38	44	38	78
E86	43	75	34	85	53	92	34	68
E87	38	53	29	72	41	54	26	29
E88	46	90	30	74	51	87	31	50
E89	40	64	27	62	40	54	35	71

TABLE LIX (Continued)

Subject Code Number	Writing RS	Writing %ile	Mathematics RS	Mathematics %ile	Social Studies RS	Social Studies %ile	Science RS	Science %ile
E90	43	75	29	72	60	97	30	45
E91	43	75	31	79	45	71	26	29
E92	47	92	31	79	43	66	27	35
E93	36	42	25	53	50	85	28	40
E94	48	93	29	72	50	85	31	50
E95	40	64	23	44	46	71	34	68
E96	34	33	20	32	28	15	23	20
E97	42	71	26	58	37	44	21	16
E98	42	71	23	44	33	30	26	29
E99	40	64	24	48	38	44	24	24
E100	41	68	15	13	28	15	27	35
E101	50	96	37	91	55	93	43	91
E102	27	11	19	27	21	1	23	20
E103	41	68	20	32	35	38	26	29
E104	47	92	28	68	42	61	35	71
E105	30	18	30	74	48	82	24	24
E106	35	37	7	3	41	54	24	24
E107	45	82	27	62	46	71	35	71
E108	40	64	25	53	38	44	21	16
E109	44	78	15	13	54	92	28	40
E110	36	42	17	22	37	44	27	35
E111	42	71	22	41	38	44	24	24
E112	36	42	30	74	37	44	26	29
E113	40	64	26	58	40	54	32	56
E114	39	60	25	53	37	44	28	40
E115	39	60	26	58	50	85	32	56
E116	35	37	24	48	33	30	30	45
E117	42	71	21	38	48	82	35	71
E118	38	53	27	62	49	85	29	45
E119	43	75	29	72	49	85	31	50
E120	37	48	24	48	34	33	29	45
E121	22	4	17	22	27	13	23	20
E122	36	42	23	44	26	12	29	45
E123	30	18	28	68	35	38	34	68
E124	46	90	22	41	40	54	30	45
E125	38	53	31	79	52	89	27	35
E126	39	60	27	62	31	26	26	29
E127	37	48	36	88	52	89	40	84
E128	37	48	17	22	29	15	25	24
E129	44	78	22	41	40	54	30	45
E130	45	82	30	74	44	66	31	50
E131	48	93	37	91	50	85	36	71
E132	40	64	27	62	43	66	30	45
E133	44	78	25	53	48	82	30	45
E134	47	92	25	53	42	61	33	62
E135	43	75	22	41	46	71	32	56

TABLE LIX (Continued)

Subject Code Number	Writing RS	Writing %ile	Mathematics RS	Mathematics %ile	Social Studies RS	Social Studies %ile	Science RS	Science %ile
E136	44	78	30	74	49	85	34	68
E137	51	96	32	82	54	92	34	68
E138	46	90	31	79	47	76	40	84
E139	51	96	29	72	50	85	32	56
E140	29	14	27	62	24	6	39	82
E141	38	53	21	38	36	38	31	50
E142	35	37	22	41	33	30	25	24
E143	39	60	24	48	46	71	43	91
E144	45	82	31	79	48	82	35	71
E145	36	42	29	72	45	71	26	29
E146	27	11	34	85	45	71	38	78
E147	38	53	30	74	39	49	26	29
E148	50	96	28	68	62	98	39	82
E149	46	90	27	62	54	92	29	45
E150	53	98	34	85	53	92	40	84
E151	43	75	26	58	29	15	37	74
E152	42	71	31	79	39	49	24	24
E153	48	93	29	72	43	66	25	24
E154	45	82	37	91	56	94	48	98
E155	50	96	37	91	56	94	33	62
E156	45	82	35	88	47	76	47	96
E157	43	75	37	91	41	54	34	68
E158	40	64	24	48	46	71	39	82
E159	47	92	37	91	50	85	34	68
E160	42	71	35	88	45	71	35	71
E161	44	78	25	53	47	76	24	24
E162	29	14	27	62	33	30	34	68
E163	38	53	24	48	35	38	30	45
E164	48	93	32	82	58	96	33	62
E165	33	30	32	82	43	66	41	88
E166	42	71	31	79	47	76	37	74
E167	48	93	31	79	61	97	39	82
E168	37	48	22	41	35	38	21	16
E169	28	11	26	58	40	54	30	45
E170	39	60	28	68	40	54	32	56
E171	44	78	34	85	52	89	36	71
E172	50	96	24	48	53	92	41	88
E173	31	22	27	62	28	15	34	68
E174	32	27	16	18	35	38	34	68
E175	36	42	25	53	39	49	31	50
E176	33	30	31	79	48	82	43	91
E177	38	53	29	72	50	85	30	45
E178	32	27	18	25	37	44	30	45
E179	32	27	36	88	29	15	29	45
E180	45	82	40	94	43	66	33	62
E181	42	71	26	58	35	38	28	40

TABLE LIX (Continued)

Subject Code Number	Writing RS	Writing %ile	Mathematics RS	Mathematics %ile	Social Studies RS	Social Studies %ile	Science RS	Science %ile
E182	29	14	23	44	47	76	41	88
E183	32	27	23	44	36	38	28	40
E184	45	82	26	58	51	87	35	71
E185	35	37	24	48	41	54	35	71
E186	41	68	22	41	49	85	36	71
E187	54	98	22	41	51	87	29	45
E188	32	27	20	32	31	26	23	20
E189	27	11	28	68	33	30	33	62
E190	29	14	34	85	40	54	46	95
E191	28	11	28	68	33	30	39	82
E192	37	48	24	48	39	49	27	35
E193	47	92	20	32	43	66	29	45
E194	36	42	20	32	27	13	26	29
E195	49	95	30	74	50	85	34	68
E196	41	68	30	74	45	71	30	45
E197	43	75	31	79	37	44	37	74
E198	31	22	28	68	32	30	34	68
E199	39	60	29	72	38	44	33	62
E200	44	78	19	27	49	85	27	35
E201	27	11	23	44	33	30	33	62
E202	32	27	24	48	46	71	35	71
E203	49	95	19	27	58	96	34	68
E204	24	7	16	18	26	12	32	56
E205	38	53	24	48	46	71	32	56
E206	37	48	24	48	46	71	40	84
E207	30	18	24	48	42	61	36	71
E208	33	30	33	82	46	71	35	71
E209	40	64	37	91	62	98	37	74
E210	52	98	28	68	52	89	37	74
E211	39	60	34	85	47	76	36	71
E212	44	78	24	48	46	71	34	68
E213	19	1	23	44	35	38	31	50
E214	47	92	16	18	50	85	27	35
E215	38	53	30	74	43	66	36	71
E216	40	64	29	72	44	66	31	50
E217	23	6	22	41	34	33	24	24
E218	44	78	30	74	58	96	35	71
E219	41	68	30	74	52	89	40	84
E220	30	18	22	41	35	38	35	71
M	39.4682		26.4773		43.6500		32.3136	
SD	6.7394		5.9276		8.6669		6.3091	

RS - Raw Score
%ile - Percentile

TABLE LX

RAW SCORES AND PERCENTILE RANKS OF THE STEP TESTS
FOR THE COLLEGE OF HOME ECONOMICS

Subject Code Number	Writing RS	Writing %ile	Mathematics RS	Mathematics %ile	Social Studies RS	Social Studies %ile	Science RS	Science %ile
H01	36	42	22	41	39	49	29	45
H02	38	53	22	41	36	38	27	35
H03	39	60	25	53	44	66	33	62
H04	46	90	28	68	44	66	40	84
H05	24	7	17	22	32	30	23	20
H06	38	53	30	74	44	66	31	50
H07	40	64	23	44	39	49	34	68
H08	44	78	28	68	46	71	33	62
H09	33	30	17	22	39	49	34	68
H10	42	71	26	58	49	85	38	78
H11	39	60	23	44	35	38	27	35
H12	34	33	31	79	50	85	31	50
H13	35	37	18	25	31	26	26	29
H14	41	68	21	38	36	38	26	29
H15	33	30	31	79	38	44	28	40
H16	30	18	25	53	27	13	23	20
H17	45	82	33	82	49	85	40	84
H18	47	92	24	48	50	85	29	45
H19	33	30	27	62	36	38	30	45
H20	43	75	14	11	32	30	28	40
H21	43	75	22	41	37	44	34	68
H22	39	60	27	62	50	85	41	88
H23	28	11	23	44	35	38	34	68
H24	37	48	21	38	36	38	18	7
H25	31	22	36	88	39	49	39	82
H26	39	60	25	53	33	30	24	24
H27	37	48	26	58	42	61	31	50
H28	43	75	23	44	39	49	26	29
H29	46	90	35	88	47	76	40	84
H30	49	95	23	44	53	92	35	71
H31	36	42	25	53	43	66	39	82
H32	40	64	20	32	46	71	33	62
H33	37	48	21	38	28	15	28	40
H34	31	22	29	72	35	38	43	91
H35	38	53	27	62	45	71	32	56
H36	42	71	22	41	42	61	30	45
H37	41	68	28	68	45	71	25	24
H38	38	53	24	48	34	33	29	45
H39	43	75	26	58	38	44	29	45
H40	36	42	17	22	38	44	25	24
H41	51	96	27	62	55	93	41	88
H42	46	90	41	96	56	94	37	74
H43	44	78	26	58	59	97	32	56

TABLE LX (Continued)

Subject Code Number	Writing RS	Writing %ile	Mathematics RS	Mathematics %ile	Social Studies RS	Social Studies %ile	Science RS	Science %ile
H44	41	68	28	68	49	85	36	71
H45	35	37	17	22	40	54	31	50
H46	35	37	24	48	30	20	30	45
H47	49	95	34	85	43	66	36	71
H48	34	33	26	58	30	20	35	71
H49	34	33	18	25	38	44	37	74
H50	27	11	18	25	45	71	32	56
H51	50	96	22	41	44	66	28	40
H52	37	48	27	62	43	66	33	62
H53	37	48	27	62	49	85	35	71
H54	28	11	22	41	31	26	30	45
H55	41	68	24	48	52	89	40	84
H56	36	42	26	58	38	44	33	62
H57	48	93	35	88	38	44	36	71
H58	38	53	19	27	39	49	26	29
H59	32	27	15	13	33	30	27	35
M	38.5932		24.7627		40.8983		31.8644	
SD	6.0090		5.4277		7.3595		5.3770	

RS - Raw Score
%ile - Percentile

TABLE LXI

RAW SCORES AND PERCENTILE RANKS OF THE ACT TESTS
FOR THE COLLEGE OF AGRICULTURE

Subject Code Number	English SS	English %ile	Mathematics SS	Mathematics %ile	Social Studies SS	Social Studies %ile	Science SS	Science %ile	Composite SS	Composite %ile
A01										
A02	6	1	18	37	9	3	15	19	12	5
A03	21	60	21	50	20	44	25	70	22	60
A04	11	5	13	13	15	16	17	25	14	9
A05	16	19	12	11	11	4	12	9	13	8
A06	24	80	27	85	29	93	23	63	26	87
A07	18	33	23	69	20	48	18	35	20	48
A08	12	7	17	34	13	9	16	24	15	15
A09	19	41	17	34	25	76	21	51	21	55
A10	12	7	11	8	7	1	9	3	10	2
A11	19	41	17	34	17	30	22	57	19	40
A12	15	15	16	25	9	2	16	20	14	9
A13	19	40	20	51	21	52	19	34	20	44
A14	22	65	24	73	15	18	25	74	22	61
A15	26	92	23	69	17	30	21	51	20	48
A16	16	20	22	63	16	23	18	34	18	32
A17	19	40	23	68	16	23	21	50	20	46
A18	19	41	11	8	18	36	14	15	16	20
A19	10	4	8	4	13	9	9	3	10	2
A20	19	41	14	19	18	36	18	35	17	26
A21	23	73	16	28	20	47	16	23	19	39
A22	16	19	6	1	13	9	16	24	13	8
A23	16	19	15	20	14	11	11	5	14	9
A24	18	33	19	46	16	24	14	15	17	26
A25	19	41	29	90	15	18	19	41	21	55
A26										
A27	9	13	10	7	7	1	9	3	9	1
A28	12	7	15	24	10	3	14	15	13	8
A29										
A30	18	33	13	14	18	36	18	35	17	26
A31	23	73	19	46	24	72	24	69	23	69
A32	11	5	15	23	16	23	15	18	14	11
A33	9	3	10	6	10	3	10	4	10	2
M	16.5667		16.8000		15.7333		16.8333		16.6333	
SD	4.9875		5.6042		5.2189		4.6910		4.3281	

SS - Standard Scores
%ile - Percentile

TABLE LXII

RAW SCORES AND PERCENTILE RANKS OF THE ACT TESTS
FOR THE COLLEGE OF ARTS AND SCIENCES

Subject Code Number	English SS	English %ile	Mathematics SS	Mathematics %ile	Social Studies SS	Social Studies %ile	Science SS	Science %ile	Composite SS	Composite %ile
S01										
S02										
S03	20	50	11	8	19	35	13	10	16	17
S04	20	55	19	43	27	87	23	61	22	63
S05	8	2	19	43	19	40	20	43	17	26
S06	20	55	11	9	18	34	18	33	17	26
S07	9	3	17	30	17	25	18	30	15	16
S08	26	91	21	57	29	52	28	45	26	52
S09	24	79	24	71	19	39	21	45	22	60
S10	24	79	28	87	27	86	27	84	27	91
S11	24	79	27	83	25	74	26	79	26	86
S12	16	19	14	16	15	16	15	15	15	13
S13	19	40	13	13	17	27	18	30	17	22
S14	14	12	13	14	17	30	12	9	14	11
S15	20	49	20	52	20	48	16	24	19	40
S16	26	91	27	83	27	86	30	96	28	95
S17	28	97	27	85	32	99	28	90	29	97
S18	25	87	19	46	26	80	23	63	23	69
S19	24	80	27	85	24	72	32	98	27	91
S20	17	25	11	8	11	4	9	3	12	5
S21	22	66	25	78	23	67	26	81	24	76
S22	14	12	26	82	20	48	29	93	22	62
S23	26	92	16	29	23	67	25	76	23	69
S24	28	97	26	82	29	93	30	95	28	94
S25	26	92	22	64	22	61	22	57	23	69
S26	24	80	20	52	22	61	28	90	24	76
S27	19	41	20	52	22	61	26	81	22	62
S28	23	73	24	73	22	61	23	63	23	69
S29	26	92	21	58	16	24	23	63	22	62
S30	27	95	24	73	26	80	26	81	26	87
S31	27	95	32	96	31	98	30	95	30	98
S32	12	7	21	58	22	61	28	90	21	55
S33	24	80	18	40	26	80	24	69	23	69
S34	12	7	20	52	16	24	18	35	17	26
S35	19	41	17	34	20	48	15	19	18	33
S36	25	87	21	58	17	30	21	51	21	55
S37	20	49	13	14	16	24	5	1	14	11
S38	22	66	22	64	23	67	17	30	21	55
S39	25	87	22	64	20	48	20	47	22	62
S40	27	95	14	19	26	80	25	76	23	69
S41	28	97	24	73	30	96	29	93	28	94
S42	26	92	20	52	21	54	26	81	23	69
S43	22	66	28	87	17	30	28	90	24	76

TABLE LXII (Continued)

Subject Code Number	English SS	English %ile	Mathematics SS	Mathematics %ile	Social Studies SS	Social Studies %ile	Science SS	Science %ile	Composite SS	Composite %ile
S44	21	58	22	64	17	30	23	63	21	55
S45	21	58	23	69	16	24	19	41	20	48
S46	6	1	12	11	10	3	15	19	10	2
S47	25	58	18	40	26	80	23	63	22	62
S48	24	80	18	40	23	65	17	28	21	54
S49	27	95	27	85	27	85	28	89	27	91
S50	22	65	31	95	26	80	26	79	26	87
S51	26	91	24	73	25	75	26	79	25	82
S52	20	49	18	40	20	47	16	23	19	39
S53	28	97	28	88	29	93	29	93	29	97
S54	26	91	23	68	26	80	26	79	25	82
S55	20	49	26	81	26	80	24	68	24	75
S56	26	91	18	40	28	89	22	55	24	75
S57	25	86	31	95	29	93	30	95	29	97
S58	25	86	30	93	27	85	18	34	25	82
S59	25	86	25	77	25	75	21	50	24	75
S60	21	57	24	73	31	98	28	89	26	87
S61	22	65	24	73	24	70	27	84	24	75
S62	20	49	14	19	24	70	16	23	19	39
S63	24	80	21	57	25	75	15	18	24	75
S64	18	32	25	77	19	41	13	12	19	39
S65	24	80	30	93	21	53	24	68	25	82
S66	24	80	25	77	30	96	27	84	27	91
S67	22	65	16	28	19	41	18	34	19	39
S68	16	20	16	28	23	65	22	55	19	39
S69	21	57	25	77	27	85	25	74	25	82
S70	27	95	28	88	28	89	27	84	28	95
S71	22	65	32	97	26	80	27	84	27	91
S72	24	80	23	68	18	35	26	79	23	69
S73	24	80	20	51	25	75	24	68	23	69
S74	24	80	18	40	27	85	21	50	23	69
S75	16	20	16	28	19	41	13	12	16	20
S76	20	48	19	44	22	58	28	89	22	60
S77	19	41	19	46	19	42	12	9	17	26
S78										
S79										
S80	15	15	20	51	16	23	20	45	18	32
S81										
S82	16	19	17	34	23	67	23	63	20	48
S83	16	19	22	64	13	9	19	41	18	33
S84	23	75	8	4	17	25	15	16	16	17
S85	19	40	13	13	23	64	17	25	18	29
S86	16	19	14	19	16	24	16	24	16	20
S87	24	80	23	68	29	93	21	50	24	75
S88	24	80	16	28	21	53	21	50	21	54

TABLE LXII (Continued)

Subject Code Number	English SS	English %ile	Mathematics SS	Mathematics %ile	Social Studies SS	Social Studies %ile	Science SS	Science %ile	Composite SS	Composite %ile
S89	15	15	18	36	23	64	25	73	20	44
S90										
S91	26	91	24	73	23	65	23	62	24	75
S92	24	80	18	40	30	96	28	89	25	82
M	21.6395		21.0000		22.5581		22.1512		21.9884	
SD	4.7723		5.4254		4.8908		5.5847		4.2303	

SS - Standard Score
%ile - Percentile

TABLE LXIII

RAW SCORES AND PERCENTILE RANKS OF THE ACT TESTS
FOR THE COLLEGE OF BUSINESS

Subject Code Number	English SS	English %ile	Mathematics SS	Mathematics %ile	Social Studies SS	Social Studies %ile	Science SS	Science %ile	Composite SS	Composite %ile
B01	24	79	19	44	19	39	19	34	20	44
B02	22	64	19	44	18	33	21	45	20	44
B03	24	80	15	24	23	67	26	81	22	62
B04	26	92	25	78	20	48	19	41	23	69
B05	20	48	28	87	20	46	26	79	24	75
B06	19	41	11	8	21	54	20	47	18	33
B07										
B08	20	49	18	40	22	59	19	40	20	46
B09	17	25	16	28	11	5	19	40	16	20
B10	21	57	13	15	20	47	15	18	17	25
B11	27	95	30	93	23	65	27	84	27	91
B12	16	20	19	46	17	29	16	23	17	25
B13	18	32	19	46	22	59	26	79	21	54
B14	21	57	18	40	7	1	14	15	15	15
B15	26	91	25	77	23	65	23	62	24	75
B16	17	25	25	77	16	23	16	23	19	39
B17	29	99	27	85	28	89	27	84	28	95
B18										
B19	23	72	17	30	19	39	17	25	19	37
B20	23	73	19	46	24	72	25	76	23	69
B21	21	58	6	2	13	9	11	7	13	8
B22										
B23	21	58	17	34	13	9	21	51	18	33
B24										
M	21.7500		19.3000		18.9500		20.3500		20.2000	
SD	3.5374		5.9657		4.9892		4.7381		3.7762	

SS - Standard Score
%ile - Percentile

TABLE LXIV

RAW SCORES AND PERCENTILE RANKS OF THE ACT TESTS
FOR THE COLLEGE OF EDUCATION

Subject Code Number	English SS	English %ile	Mathematics SS	Mathematics %ile	Social Studies SS	Social Studies %ile	Science SS	Science %ile	Composite SS	Composite %ile
E01										
E02										
E03										
E04										
E05										
E06										
E07										
E08										
E09	10	4	21	58	22	59	21	48	19	39
E10	22	70	29	91	18	34	29	93	25	84
E11	19	40	19	46	18	35	23	62	20	46
E12	21	55	24	71	22	58	27	84	24	75
E13	23	72	22	63	20	46	21	45	22	60
E14	18	32	18	36	13	8	18	30	17	22
E15										
E16	19	40	32	96	26	80	30	96	27	91
E17	12	7	14	16	7	1	6	1	10	2
E18	12	7	15	20	14	11	19	34	15	13
E19	11	5	7	3	18	33	19	34	14	9
E20	23	72	18	36	17	27	17	25	19	37
E21	18	32	18	36	14	11	10	4	15	13
E22	24	79	30	92	23	64	28	89	26	86
E23	18	32	22	63	21	52	25	73	22	60
E24	19	41	17	34	20	48	27	86	21	55
E25	18	33	17	34	18	36	22	57	19	40
E26	25	87	18	40	18	36	22	57	21	55
E27	17	25	15	24	12	7	16	24	15	15
E28	20	49	22	64	28	89	28	90	25	82
E29	16	19	14	19	23	67	22	57	19	40
E30	15	15	11	8	18	36	8	2	13	8
E31	21	58	26	82	25	76	28	90	25	82
E32	15	15	26	82	12	7	11	7	16	20
E33	23	73	23	69	30	96	20	47	24	76
E34	24	80	22	64	23	67	12	9	20	48
E35	24	80	17	34	23	67	19	41	21	55
E36	20	49	21	58	14	13	21	51	19	40
E37	25	87	24	73	19	42	20	47	22	62
E38	17	25	28	87	28	89	24	69	24	76
E39	26	92	29	90	30	96	24	69	27	91
E40	23	73	15	24	26	80	21	51	21	55
E41	29	98	33	98	22	61	15	19	25	82
E42	21	58	19	46	23	67	20	47	21	55
E43	24	80	18	40	12	7	8	2	16	20

TABLE LXIV (Continued)

Subject Code Number	English SS	English %ile	Mathematics SS	Mathematics %ile	Social Studies SS	Social Studies %ile	Science SS	Science %ile	Composite SS	Composite %ile
E44	21	58	18	40	19	42	12	9	18	33
E45	22	66	24	73	23	67	29	93	25	82
E46	27	95	20	52	27	85	23	63	24	76
E47	13	10	15	22	12	8	19	37	15	15
E48	19	41	12	11	21	54	20	47	18	33
E49	23	73	14	19	20	48	16	24	18	33
E50	25	87	24	73	24	72	23	63	24	76
E51	22	66	20	52	20	48	22	57	21	55
E52	19	41	18	40	22	61	23	63	21	55
E53	23	73	21	58	25	76	18	35	22	62
E54	16	19	26	82	18	36	20	47	20	48
E55	20	49	23	69	17	30	25	76	21	55
E56	23	73	23	69	28	89	29	93	26	87
E57	24	80	13	14	23	67	23	63	21	55
E58	22	66	18	40	19	42	28	90	22	62
E59	18	33	17	34	21	54	21	51	19	40
E60	13	9	23	69	20	48	23	63	20	48
E61	18	32	7	3	14	11	15	15	14	9
E62	19	41	18	40	12	7	11	7	15	15
E63	19	41	17	34	23	67	18	35	19	40
E64										
E65	20	49	21	57	23	65	25	74	22	61
E66	21	58	16	29	20	48	17	30	19	40
E67	28	97	27	85	28	89	21	51	26	87
E68	22	66	19	46	14	13	25	76	20	48
E69	25	87	21	58	26	80	28	90	25	82
E70	20	49	21	57	27	85	26	79	24	75
E71	18	32	16	28	21	53	18	34	18	32
E72	26	91	18	40	30	96	26	79	25	82
E73	25	86	21	57	23	65	16	23	21	54
E74	23	73	13	15	24	70	20	45	20	46
E75	22	65	16	28	27	85	22	55	22	61
E76	17	25	24	73	19	41	22	55	21	54
E77	29	99	28	88	26	80	24	68	27	91
E78	25	86	20	51	23	65	16	23	21	54
E79	19	40	22	63	15	18	18	34	19	39
E80	14	12	14	19	18	35	15	18	15	15
E81	17	25	16	28	24	70	18	34	19	39
E82	21	57	25	77	26	80	28	89	25	82
E83	24	80	22	63	24	70	22	55	23	69
E84	17	25	19	46	18	35	24	68	20	46
E85	19	40	23	68	18	35	20	45	20	46
E86	20	49	21	57	23	65	30	95	24	75
E87	18	32	24	73	16	23	21	50	20	46
E88	28	97	19	46	23	65	26	79	24	75
E89	22	65	16	28	17	29	25	75	20	46

TABLE LXIV (Continued)

Subject Code Number	English SS	English %ile	Mathematics SS	Mathematics %ile	Social Studies SS	Social Studies %ile	Science SS	Science %ile	Composite SS	Composite %ile
E90	24	80	27	85	25	75	26	79	26	87
E91	26	91	19	46	24	70	24	68	23	69
E92	25	86	19	46	25	75	25	74	24	75
E93	21	57	17	34	22	59	23	62	21	54
E94	26	91	25	77	25	75	22	55	25	82
E95	22	65	11	9	24	70	25	74	21	54
E96	18	32	11	9	17	29	21	50	17	25
E97	22	65	16	28	20	47	24	68	21	54
E98	20	49	15	23	24	70	14	15	18	32
E99	15	15	19	46	20	47	10	5	16	20
E100	17	25	11	9	20	47	11	6	15	15
E101	28	97	32	97	27	85	28	89	29	97
E102	20	49	16	28	20	47	19	40	19	39
E103	24	80	22	63	12	7	24	68	21	54
E104	24	80	25	77	17	29	27	84	23	69
E105	19	40	16	28	23	65	15	18	18	32
E106	17	25	13	15	18	35	13	12	15	15
E107	22	65	19	46	22	59	22	55	21	54
E108	17	25	18	40	24	70	18	34	19	39
E109	25	86	18	40	24	70	22	55	22	61
E110	20	49	15	23	15	18	23	62	18	32
E111	23	73	23	68	25	75	22	55	23	69
E112	20	49	24	73	16	23	22	55	21	54
E113	19	40	22	63	18	35	24	68	21	54
E114	20	49	20	51	19	41	15	18	19	39
E115	27	95	15	23	20	47	25	74	22	61
E116	17	25	18	40	17	29	17	28	17	25
E117	26	91	25	77	24	70	21	50	24	75
E118	24	80	17	34	26	80	21	50	22	61
E119	25	86	19	46	27	85	25	74	24	75
E120	21	57	18	40	10	4	18	34	17	25
E121	7	2	15	23	16	23	6	1	11	4
E122	20	49	15	23	20	47	12	9	17	25
E123	13	9	21	57	12	7	24	68	18	32
E124	21	57	13	15	18	35	18	34	18	32
E125	31	99	16	28	26	80	22	55	24	75
E126	21	57	16	28	16	23	21	50	19	39
E127	22	65	26	81	25	75	24	68	24	75
E128	12	7	10	6	8	2	16	23	12	5
E129	19	40	16	28	20	47	18	34	18	32
E130	24	80	28	88	18	35	27	84	24	75
E131	24	80	30	93	21	53	26	79	25	82
E132	20	49	23	68	15	18	17	28	19	39
E133	23	73	17	34	25	75	24	68	22	61
E134	26	91	19	46	26	80	23	62	23	69
E135	25	86	16	28	16	23	19	40	19	39

TABLE LXIV (Continued)

Subject Code Number	English SS	English %ile	Mathematics SS	Mathematics %ile	Social Studies SS	Social Studies %ile	Science SS	Science %ile	Composite SS	Composite %ile
E136	27	95	25	77	22	59	26	79	25	82
E137	27	95	19	46	28	89	25	74	25	82
E138	24	80	26	81	26	80	24	68	25	82
E139	26	91	23	68	25	75	29	93	26	87
E140	17	25	23	68	7	1	18	34	16	20
E141	17	25	14	19	18	35	21	50	18	32
E142	17	25	16	28	14	13	20	45	17	25
E143	24	80	18	40	20	47	22	55	21	54
E144	23	73	25	77	20	47	24	68	23	69
E145	23	73	23	68	16	23	18	34	20	46
E146	17	25	28	88	23	65	24	68	23	69
E147	19	40	24	73	19	41	19	40	20	46
E148	28	97	18	40	32	99	27	84	26	87
E149	22	65	21	57	11	5	22	55	19	39
E150	26	91	25	77	23	65	27	84	25	82
E151	23	73	23	68	16	23	12	9	19	39
E152	22	65	19	46	15	18	22	55	20	46
E153	27	95	25	77	23	65	23	62	25	82
E154	25	86	23	68	24	70	25	74	24	75
E155	27	95	25	77	27	85	27	84	27	91
E156	28	97	24	73	32	99	32	99	29	97
E157	23	73	25	77	21	53	21	50	23	69
E158	21	57	19	46	20	47	24	68	21	54
E159	18	32	28	88	22	59	24	68	23	69
E160	20	49	21	57	20	47	29	93	23	69
E161	22	65	22	63	23	65	24	68	23	69
E162	18	33	13	14	16	24	16	24	16	20
E163										
E164	29	99	25	78	31	98	29	93	29	97
E165	13	10	22	56	21	50	18	30	19	36
E166	22	65	26	81	20	47	26	79	24	75
E167	26	91	18	40	25	75	22	55	23	69
E168	18	33	12	11	18	36	18	35	17	26
E169	13	9	14	19	15	18	15	18	14	11
E170	20	49	11	9	23	65	7	1	15	15
E171	25	86	20	51	25	75	24	68	24	75
E172	27	95	23	68	28	89	24	68	26	87
E173										
E174	14	12	15	24	16	24	19	41	16	20
E175	21	57	24	73	19	41	19	40	21	54
E176	13	9	25	77	25	75	27	84	23	69
E177	23	73	19	46	19	42	24	69	21	55
E178	17	25	15	24	17	30	8	2	14	11
E179	19	41	27	85	8	2	15	19	17	26
E180										
E181	22	67	16	28	21	51	23	60	21	53

TABLE LXIV (Continued)

Subject Code Number	English SS	English %ile	Mathematics SS	Mathematics %ile	Social Studies SS	Social Studies %ile	Science SS	Science %ile	Composite SS	Composite %ile
E182	22	64	24	71	27	86	28	89	25	81
E183	20	49	23	68	17	29	14	15	19	39
E184	23	73	18	40	27	85	19	40	22	61
E185	13	9	20	51	15	18	18	34	17	25
E186	22	65	17	34	25	75	22	55	22	61
E187	29	99	20	52	26	80	20	47	24	76
E188	15	15	9	5	12	7	12	9	12	5
E189	11	5	7	3	10	4	10	5	10	2
E190										
E191	10	4	18	40	13	9	25	76	17	26
E192	20	49	14	19	18	35	11	6	16	20
E193	19	40	20	51	20	47	22	55	20	46
E194	17	25	16	28	18	35	14	15	16	20
E195	18	33	17	34	15	18	15	19	16	20
E196	20	49	18	40	19	42	19	41	19	40
E197	24	80	21	57	27	85	24	68	24	75
E198	14	12	18	36	16	21	17	25	16	17
E199	19	41	22	64	22	61	20	47	21	55
E200	15	15	13	14	13	9	11	7	13	8
E201	20	49	18	40	18	36	13	12	17	26
E202	16	19	13	14	19	42	24	69	18	33
E203	24	80	13	15	22	59	23	62	21	54
E204	18	32	14	19	16	23	18	34	17	25
E205	25	87	12	11	26	80	23	63	22	62
E206	19	41	17	34	13	9	18	35	17	26
E207										
E208	12	7	23	69	16	24	28	90	20	48
E209	24	80	27	85	28	89	28	89	27	91
E210										
E211										
E212										
E213	10	4	24	73	15	18	18	34	17	25
E214	19	40	8	4	22	59	24	68	18	32
E215	22	66	15	24	23	67	27	86	22	62
E216										
E217	7	2	12	11	19	42	16	24	14	11
E218	17	25	23	68	25	75	26	79	23	69
E219	19	40	24	73	16	23	27	84	22	61
E220										
M	20.5800		19.5400		20.4100		20.8600		20.4850	
SD	4.5350		5.0979		5.0705		5.3228		3.7973	

SS - Standard Score
%ile - Percentile

TABLE LXV

RAW SCORES AND PERCENTILE RANKS OF THE ACT TESTS
FOR THE COLLEGE OF HOME ECONOMICS

Subject Code Number	English SS	English %ile	Mathematics SS	Mathematics %ile	Social Studies SS	Social Studies %ile	Science SS	Science %ile	Composite SS	Composite %ile
H01										
H02	14	13	16	25	14	13	21	45	16	17
H03	15	18	11	9	20	46	20	43	17	26
H04	27	95	25	75	26	80	23	58	25	81
H05	17	24	8	4	15	16	21	45	15	13
H06	19	40	16	25	20	46	29	93	21	52
H07	24	79	21	57	26	80	19	34	23	68
H08	21	58	20	52	22	61	23	63	22	62
H09	16	19	15	24	21	54	24	69	19	40
H10	24	80	13	14	29	93	28	90	24	76
H11	20	49	20	52	16	24	18	35	19	40
H12	25	87	19	46	25	76	24	69	23	69
H13	20	49	17	34	11	4	15	19	16	20
H14	21	58	11	8	12	7	19	41	16	20
H15	24	80	20	52	24	72	16	24	21	55
H16	18	33	26	82	18	36	18	35	21	55
H17	24	80	22	64	23	67	20	47	22	62
H18	24	80	21	58	25	76	15	19	21	55
H19	13	9	14	19	13	9	12	9	13	8
H20	18	33	15	24	15	18	18	35	17	26
H21	19	40	15	23	17	29	16	23	17	25
H22	22	65	23	68	18	35	19	40	21	54
H23	20	49	19	46	11	5	21	50	18	32
H24	19	40	10	6	17	29	14	15	15	15
H25	21	57	27	85	17	29	16	23	20	46
H26	20	49	17	34	17	29	11	6	16	20
H27	21	57	14	19	21	53	18	34	19	39
H28	14	12	15	23	18	35	21	50	17	25
H29	25	86	27	85	25	75	26	79	26	87
H30	24	80	20	51	25	75	26	79	24	75
H31	22	65	20	51	26	80	26	79	24	75
H32	21	57	14	19	27	85	21	50	21	54
H33	22	65	17	34	20	47	18	34	19	39
H34	17	25	16	28	22	59	26	79	20	46
H35	23	73	10	6	22	59	17	28	18	32
H36	15	15	16	28	20	47	24	68	19	39
H37	20	49	17	34	20	47	18	34	20	46
H38	16	20	16	28	17	29	13	12	16	20
H39	22	65	25	77	20	47	23	62	23	69
H40	22	65	17	34	17	29	20	45	19	39
H41	30	99	20	52	28	89	27	86	26	87
H42										
H43	23	73	27	85	26	80	25	74	25	82

TABLE LXV (Continued)

Subject Code Number	English SS	English %ile	Mathematics SS	Mathematics %ile	Social Studies SS	Social Studies %ile	Science SS	Science %ile	Composite SS	Composite %ile
H44										
H45	26	91	14	19	17	29	15	18	18	32
H46	21	57	13	15	16	23	16	23	17	25
H47	26	91	22	63	25	75	25	74	25	82
H48	16	19	23	69	11	4	18	35	17	26
H49	22	65	18	40	20	47	18	34	20	46
H50	7	2	12	11	12	7	6	1	9	1
H51	25	86	24	73	20	47	26	79	24	75
H52	22	65	26	81	25	75	26	79	25	82
H53										
H54	18	33	12	11	19	42	19	41	17	26
H55	22	65	20	51	28	89	26	79	24	75
H56	16	20	17	34	17	29	20	45	18	32
H57	26	92	34	99	23	67	18	35	25	82
H58	19	40	19	46	16	23	18	34	18	32
H59	14	12	11	9	10	4	16	23	13	8
M	20.4000		18.1273		19.7273		19.9273		19.7090	
SD	4.1926		5.2952		4.9720		4.7331		3.6961	

SS - Standard Score
%ile - Percentile

VITA

Rheua Dale Spickelmier Fisher

Candidate for the Degree of

Doctor of Education

Thesis: A STUDY OF GRADES AND TEST SCORES IN A SELECTIVE ADMISSIONS PROGRAM FOR TEACHER EDUCATION

Major Field: Student Personnel and Guidance

Biographical:

Personal Data: Born near Willis, Kansas, March 28, 1911, the daughter of Thomas A. and Ella G. Spickelmier.

Education: Grade school in Brown County, Kansas and Glendale, Arizona; graduated from Willis Kansas High School in 1928; attended Baker University, Baldwin, Kansas, 1928-1930; received the Bachelor of Science in Education degree magna cum laude from Southwest Missouri State College, Springfield, Missouri, with a major in Elementary Education, in August, 1957; received the Master of Education degree from the University of Missouri, Columbia, Missouri, August, 1961; completed requirements for Doctor of Education degree at Oklahoma State University in July, 1968.

Professional Experience: Elementary teacher in Brown County, Kansas, 1930-1931; elementary teacher in Greene County, Missouri, 1951-1956; elementary teacher in Springfield, Missouri, 1956-1959; secondary teacher in Springfield, Missouri, 1959-1960; counselor in Springfield, Missouri, 1960-1966 and 1967-1968; graduate assistant at the University of Missouri, summer 1962; graduate assistant at Oklahoma State University, Stillwater, Oklahoma, 1966-1967.

Professional Organizations: American Personnel and Guidance Association, American School Counselor Association, Association for Measurement and Evaluation in Guidance, Missouri Guidance Association, Ozark Personnel and Guidance Association, National Education Association (Life Member), Missouri State Teachers Association, Springfield Education Association, and Delta Kappa Gamma.