A COMPARATIVE STUDY OF THE ACADEMIC ACHIEVEMENT AND PERSISTENCE TO GRADUATE OF JUNIOR COLLEGE TRANSFER STUDENTS AND NATIVE STUDENTS IN THE COLLEGE OF ARTS AND SCIENCES AT OKLAHOMA STATE UNIVERSITY

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CHAPTER I

INTRODUCTION

Today there is a crisis in higher education. The present enrollment in colleges and universities is at an all-time high. The impact of increasing enrollments is a concern to many colleges and university educators and officials.

Several factors have contributed to the large enrollments. One is the complex and changing employment picture in the United States which has made education beyond high school a necessity for employment in many fields. There is also the idea that many people are beginning to accept--that not only a high school education is mandatory but that modern life necessitates education beyond high school. Finally, the rise in birth rate following World War II has resulted in high school graduates attending colleges in greater numbers. In 1962, forty per cent of the high school graduates were in colleges (7), approximately 4.5 million in number (13). It is estimated that by 1970, more than 50 per cent of the graduates will go on to some form of higher education (7) and that by 1975, American colleges will have to make room for 8.6 million students (13). College enrollment possibilities in the future are overwhelming.

Demands are already being made up on the four-year colleges and universities. With more and more students applying for entry, the

colleges are hard-pressed to cope with the flood of applicants. The junior colleges are shouldering more of this educational burden and society's demand for accessible and appropriate education beyond high school by enrolling their share of the underclassmen. This enables some four-year colleges and universities to devote more of their energies to upperclassmen and graduate students. In 1963, twenty-five per cent of the United States' college freshmen were enrolled in the two-year colleges. It is predicted that by 1970, seventy-five per cent of the students entering college will enroll at a junior college. As early as 1963, Florida had 50 per cent of its freshmen enrolled in junior colleges and California had 70 per cent (13).

Since the establishment of the junior college at the turn of the century, the junior college has experienced dramatic growth. In 1963 there were 701 two-year colleges, 424 public and 277 private (7), as compared to 597 in 1950 (13). At this time, two-year colleges are springing up profusely over the United States at the rate of 50 new ones each year. Junior colleges now total about 800, including some 500 publicly supported schools and 300 independent or church-affiliated schools (12). About 86 per cent of the approximately 1,250,000 students enrolled in 1966 attend the publicly supported institutions. In 1920, only 20,000 were enrolled (5). By 1985 there are likely to be no fewer than 1,000 public junior colleges, and they are likely to enroll between 4 and 5 million students (39).

As has been indicated, the increased enrollments of the junior colleges have benefitted the universities because the junior colleges take their share of the underclassmen. However, as the enrollment of the nation's colleges and universities becomes increasingly composed

of transfer students, various problems result. It is felt by educators that these perplexing questions and problems should be studied in depth. This study is concerned with several of these resulting problems.

Statement of the Problem

The transfer student is not a new phenomenon in higher education. He has been a perennial figure. Especially since the establishment of the first public junior college in Joliet, Illinois, the transfer student has become more common because the "transfer program" historically has been the primary function of the junior college. Thornton (38:63) writes:

> Preparation for further study at the four-year college or university is the traditional task of the junior college. It was the primary purpose envisaged by Tappan and Folwell, Harper, Lange, and Jordan. This was the objective adopted by the earliest established junior colleges both private and public.

It is thought that the junior college of the future will continue to exercise the transfer function as it has done in the past (32).

The success of the junior college student after transfer to a four-year college has been of continuing interest to some educators since the inception of the public junior college in 1902. Some junior college personnel feel that the critical test of their program is how well the student does after he transfers. Eells (6:254) in the Junior College states:

> How successful is the junior college transfer who enters the university? Does his work stand up in comparison with that of students who have had their previous training in the university? This is the acid test of the success of the preparatory function.

The junior colleges of Oklahoma have constituted an important segment of the system of higher education since 1908 when the first

legislature of the state established six secondary agricultural schools to improve the educational opportunities of boys and girls living in small towns and rural areas. From these six agricultural schools evolved three that currently exist as junior colleges: Cameron State Agricultural College, Connors State Agricultural College, and Murray State Agricultural College. These junior colleges have exercised a significant influence on the development of other such educational institutions in the state, which now include sixteen junior colleges (32). It is important for educators to be informed as to how well these junior colleges are preparing students who will continue their education in a four-year college or university. Thornton (38:265) speaks of this:

> The most useful method of estimating the success of the junior college in its transfer function is that of comparing grade-point averages achieved before and after transfer.

There is little evidence that the academic performance of the transfer student in the College of Arts and Sciences at Oklahoma State has been a subject of research in recent years. Cowley in 1938 wrote a Master's thesis, a part of which dealt with the success of junior college transfers in the College of Arts and Sciences (3).

Furthermore, due to the number of transfer students entering Oklahoma State University, and in light of the regulations concerning admission policy in the state of Oklahoma, it is becoming more evident that information should be obtained concerning the transfer student.

In 1962, 397 transfers from junior colleges entered Oklahoma State. In 1963, this figure was 356. For the fall semester of the 1966-67 school year, the junior class made the largest enrollment increase of all classes, 16 per cent. Concerning this increase, Dr. Robert Kamm,

President of Oklahoma State (37:1) stated: "This is the result of junior college students transferring to a four-year college after their sophomore year."

Currently, the two-year colleges operate as "open door" institutions so that any resident of the state who is a graduate of an accredited high school and has participated in the American College Testing Program is eligible for admission to any of the two-year colleges in the State system (16). A student may transfer from a junior college to a four-year college if he has a "C" average in all work attempted. If he fails to meet this requirement, he may be admitted on probation if he has earned at least a 1.5 (2.0 is "C") for his immediate past academic year (31).

However, a recent ruling of the State Regents for Higher Education proposes a change in its policy of admission, restricting admission to Oklahoma State and the University of Oklahoma. Students would be required to meet one of the three criteria for admission: 1) upper 50 per cent of the high school graduating class, 2) upper 50 per cent on American College Testing Program or a comparable test and 3) a 2.5 average from the high school (10). Although directly concerned with the universities in the state, this ruling, if adopted, will also affect the junior colleges indirectly.

The Academic Standards and Policies Committee of the Faculty Council is concerned with the implications of this ruling of the State Regents restricting enrollments to Oklahoma State University and the University of Oklahoma. The minutes of the October 11, 1966, meeting reflect this concern:

> Mr. Hillier mentioned the possible effects this policy could have on the grading system, also that many of those

> ineligible for admission to the universities in their freshman year might attend junior colleges and make acceptable grades where the competition was not as great, then transfer to the universities in the junior year with less preparation than their classmates (29:2).

Thus, the problem to be investigated appears to be a timely one and appropriate to Oklahoma State University. The problem herein researched deals with a comparison of the academic performance and persistency of junior college transfers into the College of Arts and Sciences at Oklahoma State University with Arts and Science majors who began their freshman year at OSU. Furthermore, this study will explore the interaction of other background and current factors that may have affected academic performance and persistency to graduate, such as sex, choice of major, and occupational status of the student's father.

Definition of Terms

The following terms and abbreviations will be used throughout this study:

Transfer student is one who has matriculated at the University after having attended another college. For specific purposes of this study, the transfer student will be one who has matriculated at the University after having acquired a minimum of 60 semester hours of transfer credit from a junior college located in Oklahoma.

Native student is a student who has matriculated at a particular university without previous college experience or directly from high school. For this study, the native student is one who has matriculated at Oklahoma State University directly from high school and without previous college experience.

Persistency is indicated by the number of students from a group completing each successive semester and the number who graduate.

Grade point averages is an index of academic achievement. It is arrived at by dividing the grade points or honor points by the number of units or credits carried during a given semester or term. In the case of the student at Oklahoma State, each letter grade receives the following number of quality points: A-4, B-3, C-2, D-1, and F-0.

Graduated in four years refers to a student who began his college studies in the fall of 1960, 1961, or 1962 and who graduated in eight semesters or sooner.

Graduated with a degree refers to a student who graduated with a degree.

Occupational classification of the student's father is determined by the Socio-economic classification with modification as explained by Shartle (35). For purposes of this study, the following five characteristics were used: Professionals; Proprietors, Managers, and Farmers; Clerical and Sales; Skilled, Semi-skilled, Foremen; and Unskilled.

Area of study is that broad field of learning in which the student elects to take a specific number of hours or a major. For this study, the areas of study in the College of Arts and Sciences are: Biological Sciences, Language and the Fine Arts, Physical Sciences, and Social Sciences.

ACT score is the student's composite score received on the American College Testing Program test.

Scholarship is scholastic achievement as measured by grade point.

Active student is one considered by the College of Arts and Sciences as currently enrolled but who has not graduated.

Inactive student is one considered by the College of Arts and Sciences as having been dropped, suspended, or withdrawn from this particular College.

Upper division refers to the senior division or the last two years of the University.

Lower division refers to the first two years of the University.

Withdrawn refers to a student who terminates his enrollment within the semester.

Dropped refers to a student who completes or finishes one semester but does not return the following semester or any semester thereafter.

Suspended refers to a student who has his attendance at the University terminated by University officials.

In attendance is a term given to a student who is considered a full-time student by the University and who was enrolled some time during the years 1960-66, in the case of the native student, and some time during the years 1962-66 in the case of the transfer student.

Still in school is the same as the active student--one who is currently enrolled.

OSU is the abbreviation used for Oklahoma State University.

A & M is the abbreviation used with a college or a university name and refers to Agricultural and Mechanical.

GPA is the abbreviation for grade point average.

Purpose of the Study

The purpose of this study is to analyze the academic performance and persistency of transfer and native students in their major field

at Oklahoma State University and to ascertain whether transfer students perform as well as native students in the College of Arts and Sciences. Generally, the main objective is to determine what effect the fact that a student is a transfer or a native has upon his academic success at the University. More specifically, the writer will attempt to achieve the following objectives:

1. To determine the scholastic competence of transfer and native groups as measured by their grade point at the end of two years of college work and succeeding semesters.

2. To determine whether sex differences exist in academic performance and ability to persist.

3. To determine whether academic performance and persistency differences exist because of the type of program or major pursued.

4. To determine whether academic performance and persistency differences exist because of the occupational status of the father.

5. To determine whether academic performance and persistency differences exist because of the junior college attended.

The whole general purpose of this study is to provide evidence as to the academic success and persistency of transfer students at Oklahoma State University which would be helpful to the student personnel and general administration in junior colleges and universities in the development of services, educational policy, and curriculum.

Hypotheses Tested

The following are stated in the form of null hypotheses for the purpose of statistical treatment:

1. There will be no significant difference in grade point average between transfers and natives at the beginning of their junior year.

2. There will be no significant difference in grade point average between transfers and natives at the end of the fall semester of their junior year and succeeding three semesters.
3. There will be no significant difference in the number who persist between the transfers and native students.
4. There will be no significant difference in grade point average between the transfers and natives of the same sex.
5. There will be no significant difference in the number who persist between the transfers and natives of the same sex.
6. There will be no significant difference in grade point average between the transfers and the natives in the same area of study.
7. There will be no significant difference in the number who persist between the transfers and natives in the same area of study.
8. There will be no significant difference in grade point average between the transfers and the natives whose fathers are in the same occupational classification.
9. There will be no significant difference in the number who persist between the transfers and the natives whose fathers are in the same occupational classification.
10. There will be no significant difference in grade point average between the transfers as to the particular junior college attended.
11. There will be no significant difference in the number who persist between the transfers as to the particular junior college attended.

Limitations of the Study

An important limitation of this study is that imposed in the selection of students. This study includes only those native students who enrolled in the College of Arts and Sciences during the years 1960, 1961, and 1962 and who were classified as juniors two years later--1962, 1963, and 1964. It includes those junior college students who transferred into Oklahoma State University during the fall of 1962, 1963, or 1964 with a minimum of sixty semester hours of credit and with junior standing.

Furthermore, only those students for whom a composite American College Testing Program score was available were included in the sample.

This study excluded those transfer students who obtained credit at colleges other than the junior college from which they transferred. It also excluded those students who changed majors and transferred to other Colleges within the University after initially enrolled in the College of Arts and Sciences.

There was no attempt in this study to ascertain whether students who dropped or withdrew from Oklahoma State University completed their requirements for graduation elsewhere. In addition, there was no attempt to measure such things as motivation, education of parents, income of parents, and level of aspiration--all which could be factors that would influence academic achievement and persistency.

The study was limited by a small sample due to the nature of the design, the matched-group technique. The matching of the two groups on five variables reduced considerably the number of matched pairs.

Furthermore, subjects dropping out of the University, and hence the study, impaired the matching design.

The results of this study are applicable almost exclusively to Oklahoma State University, the College of Arts and Sciences, and the junior colleges involved for this particular time of study.

CHAPTER II

REVIEW OF THE LITERATURE

An Overview of the Research

For the first fifty years of the existence of the junior college, information concerning the success of the junior college transfer students into institutions of higher education was quite sketchy. With the increased popularity of the community college movement and the rapid expansion of the junior colleges, more studies have been made to evaluate, in part, the caliber of the junior college offerings.

In the numerous research studies considered, it was evident that there was a wide variety of approaches and research designs used in approaching this topic. Because of this diversity, the writer has chosen to review chronologically these research contributions.

The earliest investigation of this nature was made by Koos (25) who studied graduates of junior colleges in 1919, 1920, and 1921. He secured records of 95 junior college graduates who entered thirteen universities and six colleges and compared them with 75 juniors at the University of Minnesota. The median grade of the junior college group was 80.6--for the Minnesota group, 79.8. This showed a very slight superiority of the junior college group. Koos assumed that the marks in the nineteen different colleges were comparable.

In 1927, Walter C. Eells (6) of Stanford University made studies to evaluate and predict the success of students transferring from junior colleges to four-year institutions. He found that while it took the 317 transfers a quarter to get started, they excelled the native in grade point every quarter thereafter.

Grossman (14), in 1934, did a study in which he compared the performance of junior college transfers, university transfers, and liberal arts college transfers to the University of Illinois. Results showed that female transfers from junior colleges and four-year colleges did equally well in upper division work, but that for males, the junior college transfers obtained upper division averages about .1 of a grade point higher than the transfers from four-year colleges. Grossman does not compare any of these groups with native students or with their own performances before transfer.

Gerberish and Kerr (9) reported on the success of transfer students at the University of Arkansas in 1936. They studied the junior college transfer students who entered between 1928 and 1932 with a junior classification or standing. They compared 215 transfer students with 436 native students. The latter were chosen on a random basis to match the transfers on class, sex, age, and college at the University. These researchers found that the native students showed a higher percentage of persistence at every level than did junior college transfers and that a greater percentage of the native graduated as contrasted to the transfers--56 per cent of the transfers as compared to 65 per cent for the natives.

Native students at Oklahoma A & M were compared with junior college transfers in 1938 by Cowley (3). The 188 students of the

native group in the lower division made an average grade point of 2.52; in the upper division 2.83. The junior college transfers, numbering 52, had an average of 2.68 before transfer and a 2.75 in the upper division of the University. Thus, the junior college transfers did not quite equal the upper division average achievement of the native students.

In 1947 the transfer study committee of the Junior College Council of the Middle Atlantic States (34) published the results of a study they had completed. This group followed 262 junior college graduates in their work in fifty-four colleges and universities along the East coast. Their grade average obtained was slightly higher than the grade point average of the student body of the school in which the transfer enrolled.

Dr. Darley (4) in his book presented data on 88 per cent of those who entered as freshmen in 1952. He had two groups--the junior college students and those junior college entrants who usually transferred to the University of Minnesota. The results showed that the junior college students who transferred to the University of Minnesota were more "able" than the total group of junior college entrants. However, their grade point was not as high as for the total junior group.

Mortorona and Williams in 1954 did research concerning the transfers to the State College of Washington during the period from 1947 to 1949. They matched 251 transfers with 251 natives on the basis of high school grades, aptitude test scores, and other variables. The junior college transfer obtained lower grades than the natives--about .2 to .3 of a grade point--during the fifth semester, but by the seventh and eighth semesters, the culumative grade point was only .15 in favor of

the natives. However, when semester by semester was considered, the natives performed significantly better than the transfers. Despite these findings, Mortorona and Williams (26:415) generalize and state:

> Taking the entire group of 251 transfers matched with 251 non-transfers, it must be observed that the transfers did at least as well academically as did the non-transfers. This conclusion is consistent with the almost unanimous decision of those who have made studies of this sort elsewhere in recent years.

Holmes (17) made a comparison of 385 junior college transfers to the College of Liberal Arts at Syracuse University for the years 1946-1955. The junior college transfer grades dropped to 1.3 as compared to the 1.6 average in the junior college. He implied in his study that the junior college students got lower grades than either the natives or the transfers from four-year institutions.

Nall (30) studied the transfers at the University of Colorado. He compared the success of junior college transfers with native students over a four-year period, 1951-55. He found that by the last semester of the senior year, the transfer student in the College of Arts and Sciences had a mean grade point of 2.61 (2.00 is "C" grade) as compared with 2.84 for native students at the same point in their academic career.

Grace Bird (1:81) in the Fifty-fifth Yearbook of the National Society for the Study of Education, released in 1956, wrote: "Happily the success generally achieved by junior college transfers is reassuring to both the junior college and senior institutions."

In 1960, Medsker (27) in The Junior College: Progress and Prospect reported the results of his study which involved sixteen four-year colleges located in eight states. Each college collected information on the performance of junior college transfers. Over 2,500 transfer

students were included. For most of the institutions, comparisons were made between the performance of transfers and the performance of native students. In twelve of the sixteen colleges, the natives obtained higher grade point averages than the transfers. It should be noted that Medsker's data did not control for academic aptitude of natives and transfers. His study also implies that transfers are slower at getting degrees than the natives.

Hoyt (18) studied 310 men and 80 women who transferred to Kansas State University in a three-year period. They were compared with a random sample of natives matched with regard to sex, year of first enrollment, and class. The study revealed that the junior college transfer grades averaged .25 to .50 grade point higher than the grades they received after transfer to Kansas State University. However, the grades of transfers were not significantly different from the upper division grades of the natives. It is important to note Hoyt's failure to match the two groups on the basis of an aptitude score or high school grade average.

An article, "It Doesn't Have to be a Four-year College," in the July, 1961, issue of Changing Times gives numerical evidence concerning the success of junior college transfers at the University of California:

> A couple of years ago about 2,500 junior college students entered the University of California. Half would not have been eligible as freshmen. Subsequently, 73 per cent graduated (20:36).

Klitzke in 1961, on the basis of three masters and doctoral theses from the period of 1949 to 1958, reported that research indicated that Colorado transfer students are significantly inferior to

native students at the University of Colorado and Denver University. He then studied 231 individuals who had attended one of the Colorado junior colleges before entering Colorado State between the years 1953-57. Klitzke (22:256) found a significant difference between the proportions of natives and transfers who graduated--90 per cent of the natives as contrasted to 78 per cent of the transfers. He concluded:

> The students in the junior college transfer group decreased in cumulative grade-point average from junior college to senior college, while native students increased their cumulative grade-point average from lower to upper division.

At the University of Georgia in 1963, Russell (33) compared natives in the College of Arts and Sciences with transfers into the College from junior colleges in Georgia. One hundred twenty transfers and 178 natives made up the study. Russell found that the transfers obtained higher lower division grades than the natives, but that the two groups' upper division grades were not significantly different from each other.

"Facing Facts About the Two-year College," a booklet released in 1963 with a foreword by Dr. Edmund J. Gleazer, Jr., Executive Director of the American Association of Junior Colleges, refers to the success of the transfer student:

> Among the two-year graduates who transfer to four-year institutions at the junior years, according to studies in California, Washington, and other states, the students do as well or better than comparable students who take their first years at the four-year institution (7:10).

John Casey (2:49) in 1963, referred to a study by De Ritter in which he summarized the statistics compiled by Congdon, Eells, Pendorf, and Sammartino in their studies of the transfer student. The summary showed that "community college transfer students actually demonstrated

superiority over comparable groups of students who had entered four-year colleges and universities as freshmen."

A recent study, and by far the most national in scope, is that completed by Knoell with the assistance of Medsker in 1964 (24). It researched 7,243 junior college students who entered the four-year institutions in the fall of 1960 and made comparisons with 4,026 transfer students in 1960 or earlier, and 3,349 native students who graduated in 1962. The findings revealed that the junior college transfer typically dropped about .3 of a grade point after transfer. However, after this initial drop, the grades continued to rise. Despite this increase, the natives have a higher grade point average than the junior college transfers. Also, transfers are less likely to raise their grade point if they transfer to a major state university as contrasted to other colleges. Junior college transfers were found to require more time to complete their degree programs than the natives. The lowest rate of graduation for transfers was that of the state universities.

Dr. Robert Hanson (15:10) in an article in the Minnesota Journal of Education writes concerning junior college transfers to Moorhead State College in Minnesota:

> These who have received the Associate in Arts or the Associate in Science degree prior to their transfer to Moorhead have done about as well in upper-division courses on the average as those who took all their work at this four-year institution.

In a letter to this writer, Dr. John Givens (11:1), Acting Chief, Bureau of Junior Colleges in California, summarizes studies that have been made concerning the achievement of the transfer student by this statement:

> Studies have been made . . . in California that relate to this matter. These conclusions are as follows: The student enrolled in a junior college who was eligible to enter the University at the time of his high school graduation does better in his studies at the University than the student who entered the University directly upon high school graduation. On the other hand, the student who was not eligible to enter the University at the time of his high school graduation, does not succeed as well in his University work as does the student who entered the University following high school graduation.

Dr. Givens was unable to "put his hands on any specific study" that gave evidence of these conclusions.

A Summary of the Research

In a review of the different research accomplished on the junior college transfer student, it becomes apparent that the research has not followed any definite or particular pattern as to problem studied, size of sample, institutions involved, and type of research design.

Nineteen different research studies and statements of individuals concerning the subject of the performance of transfers has been considered. It is difficult to make any accurate summary due to the great diversity in the presentation of each.

In many of the studies, the junior college transfers were compared with the native students. In other studies comparisons were made with transfers from other universities, from liberal arts colleges, and from colleges within the university. Some comparisons were made with various students who had graduated. Most of the junior college transfers in the research had a junior classification. However, this was not characteristic of all students.

The research studies dealt with comparisons of transfers in a single university as well as transfers in as many as fifty-four

colleges. The number of subjects involved ranged from a low of 170 in the early Koos' study to the recent one of national scope, by Knoell-Medsker. This significant study involved some 10,000 students. Most of the research was conducted over a minimum two-year period. The longest one, a ten-year study, was carried on by Holmes at Syracuse University.

In most of the studies reviewed, the grade point of both the transfer and native student was the chief concern. Researchers were interested in the grade point at the end of two years of college and the grade point of both groups for the last two years of college. Several cases also were concerned with the number of transfers who graduated from college as contrasted to the natives.

In the majority of the cases, the transfer student suffered a drop in grade point the first semester after transfer. Moreover, the studies also revealed that in six cases the transfers showed superiority over the natives in grade point at the end of four years. In eight cases, the natives' academic performance excelled that of the transfers, and in five instances, the research concluded that the junior college transfer does about as well as the native student. Several investigations showed that a greater percentage of the native students graduated than did the transfers.

A statement by Eells (6:262) typifies and summarizes the type and nature of most research studies pertaining to the success of the transfer student:

> In some cases very careful and detailed scientific studies have been made; in others, rather vague generalities must suffice. Some of the results are meager. In many cases they are only suggestive and may be misleading. They have been made between groups that were not strictly comparable,

> e.g., junior college entrants with freshmen entrants, or with all students in the university; junior college entrants at several institutions with advanced students at a single one; first semester grades only, during a period of adjustment to new conditions; or junior college transfers with one semester or more of credit, instead of the real junior college product--the graduate who transferred as a junior.

Holmes (17:457) also refers to the conflicts in research material concerning transfer students; some data indicate that transfer students are highly successful while other information reveals a lack of success. Holmes in his analysis of related literature on the transfer student writes:

> In reviewing and analyzing a multitude of periodical and journal articles, theses, dissertations, and general research concerning transfer students, the conclusion established by usually valid research indicates that no pattern or established norms of any type are available on the transfer student--either from the four year institution or junior college. In fact, there are conflicting reports on the success or the lack of success of transfer students among the various colleges which indicate that no individual college or university can claim on the basis of previous research just how transfer students will measure up at their own institution.

It would seem that these inconclusive reports would make it imperative that each institution conduct its own research concerning the academic achievement and persistency of the transfer student, for the data collected appears meaningful only for that particular school.

CHAPTER III

METHODOLOGY AND DESIGN

This chapter will be divided into four parts: the origin of the study; sources and types of information collected; collection, organization and assembly of data; and research design and statistic techniques.

Origin of the Study

The conflicting evidence found in the review of related literature would indicate that more significant research is needed in the area of the transfer student. Furthermore, the review of literature fails to yield recent data concerning the performance of junior college transfers at the Oklahoma State University. While this study does not purport to answer all of the many questions pertaining to the transfer student, it does intend to delve into his performance and his background at the University in an effort to better understand transfer students at Oklahoma State University. A comparison of the transfer group with a native group will be the method used to satisfy this interest and curiosity.

This study will be limited to transfers from junior colleges located in the state of Oklahoma. Out-of-state transfers would introduce more variability in background than those with transfer status from an Oklahoma junior college.

This study will be restricted to those who were pursuing a major from the College of Arts and Sciences. This would constitute the greatest number of potential transfers to the University and would also provide an opportunity to measure what effect a particular course of study or major had on his performance. The native subjects were selected from those who had enrolled in the College of Arts and Sciences as freshmen and were still enrolled two years later with a junior classification. In the event a student changed colleges within the University after beginning his university studies, he was eliminated from the study.

To be included in the study, a transfer must have transferred at least 60 semester hours of credit. This was to be the total accumulated two years after having begun his studies at a junior college. This was done to make the two groups--the natives and the transfers--comparable. The native group also required 60 hours of credit to be classified as juniors. Many transferred into OSU after one year at a junior college or after two years, but with less than 60 semester hours of credit, thus were ineligible for the sample.

A composite ACT score was also a requirement for the study and therefore it was not possible to include all of the original 220 junior college transfers for the years 1962, 1963, and 1964. Many of these particular junior college students had enrolled in a junior college prior to the 1962 Policy of the Oklahoma State Regents for Higher Education that required that Oklahoma students who wished to be admitted to a college in the state system as a first-time freshman must have participated in the American College Testing Program (16). This further reduced the size of the sample.

Some studies reviewed have indicated that sex differences do exist with regard to academic performance, voluntary withdrawal, and the percentage who graduate and therefore both sexes were also considered in this study. However, only three in ten freshmen attending Oklahoma junior colleges in the fall of 1962 were women (16).

The student's major area of study and the occupational status of the student's father were included in the study to make it more meaningful. This additional information was included to determine whether these factors affect academic performance and persistency to graduate.

Sources of Data and Types of Information Collected

There were three different offices that provided the sources from which data was gathered for this study: The Registrar's Office at Oklahoma State University; The Registrar's Office of the junior colleges located in the state; and the Office of the Dean of Student Personnel, College of Arts and Sciences, Oklahoma State University.

The initial source of data was that of the Registrar's Office at Oklahoma State University. Without this information, the study could not have been undertaken. This office furnished the names of those students who transferred from Oklahoma junior colleges during the years 1962, 1963, and 1964 into the College of Arts and Sciences at OSU. The Registrar's Office of the various junior colleges in the state supplied ACT scores on transfer students.

The Office of the Dean of Student Personnel, College of Arts and Sciences, at Oklahoma State, became the chief source for the data used in this study. Most of the information, but not all, was gleaned from the student's cumulative folder filed in this office. These folders

were filed in three categories: graduates, inactives, and actives. The graduates were filed on the basis of those who had graduated in 1964 or before, in 1965, and in 1966. Those in the inactive files were students who had withdrawn or had dropped from the university or had been suspended by University officials. The active file consisted of those students who were still in attendance.

The cumulative folders contained the following data vital to this study:

For the transfer student:

1. Name
2. Date of birth
3. Sex
4. Name of junior college attended
5. Major area of study declared in junior year
6. Occupation of father while living
7. Year of entrance to junior college
8. Year of entrance to Oklahoma State
9. Number of semester hours transferred into OSU
10. Grade point average of credits transferred
11. Accumulated grade point semester by semester at OSU
12. Date of graduation

For the native student:

1. Name
2. Date of birth
3. Sex
4. ACT composite score
5. Major area of study declared in junior year
6. Occupation of father while living
7. Year of entrance to Oklahoma State
8. Accumulated grade point at beginning of junior year
9. Accumulated grade point semester by semester at OSU
10. Date of graduation

Collection, Organization, and Assembly of Data

The initial step in the collection of data was to secure from the Registrar's Office at Oklahoma State a list of students who transferred into the College of Arts and Sciences during the fall of 1962, 1963, or

1964. This list also indicated the name of the junior college from which the student transferred.

After this list was received, the next procedure was to write the registrars at the 16 junior colleges from which these students transferred in an attempt to secure the ACT composite score. After this score was received, other pertinent information was secured from the student's cumulative folder in the Office of the Dean of Student Personnel of the College of Arts and Sciences. This additional information included data on each transfer's date of birth, sex, major declared, occupation of father, year of entrance into junior college, number of semester hours transferred to OSU, accumulated grade point of transferred hours, accumulated grade point semester by semester, and current status of transfer--graduated, active, or inactive student.

Many of the 220 transfers in the original list could not be used in the study because they had fewer than the minimum 60 hours of transfer credit and no junior classification at time of enrollment, had attended another college in addition to a junior college prior to transferring to OSU, had begun college prior to 1960, had failed to take the ACT test, or had changed colleges within the University after having transferred to Oklahoma State. Furthermore, 14 students would not be considered in the study because they stated their fathers' occupation as "U.S. Army"; and this classification was considered too ambiguous to use for later analysis. Therefore, the final number of transfer students for whom all desired characteristics and information could be obtained was 106.

Each of the 106 transfer students involved in the study was then assigned a code number. The characteristics to be used in the study

were then coded for later computer and statistical data convenience. Continuous variables were recorded in raw score or converted form while discrete variables were coded for statistical treatment. The factors included on the data listing sheets included:

1. Name

2. Sex

   Code: Male: 0

   Female: 1

3. Year of transfer to Oklahoma State

4. Junior College from which transferred

   Code: 1 Altus Junior College
   2 Bacone College
   3 Cameron State Agricultural College
   4 Connors State Agricultural College
   5 Eastern Oklahoma A & M College
   6 Murray State Agricultural College
   7 Northeastern Oklahoma A & M College
   8 Northern Oklahoma College
   9 Oklahoma Military Academy
   10 St. Gregory's Junior College

5. ACT composite score

6. Age

7. Major area of study

   Code: 1 Biological Sciences (Example: Botany, Medical Technology, Microbiology, Natural Science, HPE&R, Wildlife, and Zoology)

   2 Language, Music, and the Fine Arts (Example: Foreign Language, English, Journalism, Music, Speech, and Art)

   3 Physical Sciences (Example: Chemistry, Geology, Physics, Mathematics, Physical Sciences, and Air Science)

   4 Social Sciences (Example: Economics, History, Humanities, Political Science, Pre-law, Social Science, Sociology, Psychology.)

8. Junior College or Lower Division two-year cumulative average

9. Fifth semester cumulative grade point average

10. Sixth semester cumulative grade point average

11. Seventh semester cumulative grade point average

12. Eighth semester cumulative grade point average

13. Graduated in four years?

    Code: Yes 1

          No 0

14. Still in school?

    Code: Yes 1

          No 0

15. Graduated with a degree?

    Code: Yes 1

          No 0

16. Date of graduation

17. Occupational Classification of the student's father

    Code: 1 Professional
          2 Proprietor, management, farmer
          3 Clerical and Sales
          4 Skilled and semi-skilled workers; foreman
          5 Unskilled worker

After complete information was obtained on the 106 transfer subjects, the next procedure was to match the transfers with the natives on the basis of five characteristics: sex, age, ACT composite score, major area of study declared by the student, and occupational status of the student's father.

To gain a pool from which to secure a native population, the next step was to examine completely all the cumulative folders of the native students that were available. This included all the files containing

the records of students who had graduated, those who were inactive, and those who were active and currently enrolled. Data obtained from the student's cumulative folder were recorded in code form for each student on the five desired characteristics. Example:

Smith, Jerry 0 25 19 1 1

The "0" indicates a male native; the "25" an ACT composite score, "19" the age of the native at the beginning of his junior year; "1" a major in the Biological Science area; and "1" indicates the student's father as being in a professional capacity.

The next course of action in the process of matching was to devise a worksheet which listed the requirements for each of the 106 transfers. The requirements were the five different characteristics that each of the 106 transfers possessed:

Year of Transfer	Sex	ACT	Age	Major Area	Father's Occupation
'62	0	25	19	1	1
'64	0	20	20	1	1
'63	1	18	19	1	1
'64	0	25	19	2	1
'64	0	20	21	2	1
'63	0	29	20	3	1

This requirement worksheet was grouped in this manner to expedite the matching process. If the natives did not match on the last two characteristics, further matching of the other three traits was not pursued because the major area of study and father's occupation were not manipulative.

The task then was to match from the pool of natives that was acquired earlier, the natives with the transfers on all five characteristics: sex, ACT score, age, major area of study, and occupation of the father. To facilitate matching, a band was considered acceptable for both ACT score and age. (This meant that if a transfer had an ACT score of 20, he could be matched with a native having an ACT composite of 19 or 21. Likewise, a transfer of 19 years of age could be matched with a native of 18 or 20.)

As the researcher went through his pool of natives, an attempt was made to match the natives' characteristics with those of the transfers. If they matched, a check was placed next to the name of the native.

Next in the process of matching was to print on a 3" x 5" card the name of the transfer student, the sex, ACT score, age, major area of study, and occupation of the father in code form. Upon completion of this phase, the next step was to review the native pool and take from it those students who matched the transfers and to record their names and information under the transfer student matched. The result was that for some transfers there was more than one native who matched. This was especially true when the ACT score was about 20, the approximate median score for OSU students. The matches that were possible were those who had graduated, those who were still enrolled (actives) and those who had dropped (inactives) from the University. Example:

	Stein, John	T	62	0	20	19	1	1
1.	Jones, Ted (grad.)	N	63	0	21	20	1	1
2.	Hill, Jim ("I")	N	64	0	20	20	1	1
3.	Case, Fred ("A")	N	63	0	20	19	1	1

In this instance, Stein was the transfer student, the others were natives. Jones was a graduate, while Hill and Case were inactive and active students respectively. To determine which of the natives to use as a match for Stein, the natives on the card were numbered 1, 2, and 3. The table of random numbers were used to determine who should be selected.

In the case of some low ACT scores; for example, a score of nine, it was impossible to match due to a lack of a sufficient pool of natives having this score. Because of this and similar factors, only 90 of the possible 106 potential matches became a reality. These 90 natives and 90 transfers then became a basis for this study.

Table I on page 33 presents the sources and institutions of the Oklahoma junior college transfers to the College of Arts and Sciences. Ten different junior colleges are represented in the 90 pairs of the study. The matching process reduced the number of junior colleges in the study from the original 16 to 10. The greatest number of transfer students came from four junior colleges.

A description of the variables on which the transfer students and natives were matched at the beginning of their junior year is presented in Table II on page 34.

The two characteristics, the ACT and age, are described together because they were treated as flexible for matching purposes. Considering a band about the score or age, one above and one below, facilitated the matching of transfers with the natives.

TABLE I

OKLAHOMA JUNIOR COLLEGES ATTENDED BY TRANSFERS TO THE COLLEGE OF ARTS AND SCIENCES--1962, 1963, 1964

Code	Name of Junior College	1962	1963	1964	Totals
1	Altus Junior College	-	1	1	2
2	Bacone College	1	-	-	1
3	Cameron State Agricultural College	8	4	5	17
4	Connors State Agricultural College	1	2	-	3
5	Eastern Oklahoma A & M College	2	8	1	11
6	Murray State Agricultural College	2	2	1	5
7	Northeastern Oklahoma A & M College	9	10	12	31
8	Northern Oklahoma College	4	6	5	15
9	Oklahoma Military Academy	-	3	1	4
10	St. Gregory's Junior College	-	-	1	1
	Totals	27	36	27	90

The ACT figures indicate that the years of the study are quite homogeneous as to the measured ability of the transfer student. Also, the composite ACT scores of the transfers approximated the median ACT score of the entering freshmen at OSU in 1962 (16). The average age of a transfer student was between 19.5 and 20.0 years.

TABLE II

DESCRIPTION OF THE TRANSFER SAMPLE
(Part I)

Variable	1962	1963	1964	Composite
ACT composite score				
range	12-27	14-29	15-30	12-30
mean	20.3	21.5	20.9	20.9
median	21.0	21.5	20.0	21.0
AGE				
range	19-20	19-21	19-21	19-21
mean	19.4	19.7	20.0	19.7
median	19.0	20.0	20.0	20.0

Table III is a description of additional characteristics of the sample. Because of the nature of these characteristics, the native had to be matched specifically with the transfers--characteristic for characteristic. There was no flexibility in matching, nor was a band used as was the case in the variables described in Table II.

Table III shows that the actual number of junior college transfers used in this statistical comparison and study was 90. There were 74 men and 16 women students. As a result of the matching process, the total sample was 180.

The figures also reveal that the transfer student selected biological science and social science areas most often. The father's occupation which appeared with the greatest frequency was proprietor, manager, or farmer.

TABLE III

DESCRIPTION OF THE TRANSFER SAMPLE
(Part II)

Code	Sex	1962	1963	1964	Totals
0	Male	22	29	23	74
1	Female	5	7	4	16
	Totals	27	36	27	90

Code	Major Area of Study	1962	1963	1964	Totals
1	Biological Sciences	9	13	6	28
2	Language & Fine Arts	4	2	7	13
3	Physical Sciences	7	8	3	18
4	Social Sciences	7	13	11	31
	Totals	27	36	27	90

Code	Occupational Status of Father	1962	1963	1964	Totals
1	Professional	2	7	6	15
2	Proprietors, Managers, and Farmers	11	10	10	31
3	Clerical and Sales	5	5	1	11
4	Skilled and Semi-skilled workers; Foremen	5	6	4	15
5	Unskilled Workers	4	8	6	18
	Totals	27	36	27	90

A complete listing of the student data will be found in the Appendix.

Research Design

The type of research done in this study is referred to as ex post facto. It may be defined as:

> That research in which the independent variable or variables have already occurred and in which the researcher starts with the observation of a dependent variable or variables. He then studies the independent variables in retrospect for their possible relations to, and effects on, the dependent variable or variables (21:360).

In this study the two groups enrolled in the College of Arts and Sciences, the natives and transfers, will be the independent variables. The grades received by the native and transfer students and their persistency will be the dependent variables. Because of the nature of the design, the manipulative elements of the study will be minimal.

The controls for this experimental design call for the equating of the two groups, the natives and transfers, on the basis of sex, composite ACT score, age, major area of study, and occupational classification of the student's father. The ACT score was needed to control for differences in academic ability because the yardstick used to measure student success was grade point earned. It was felt that a comparative analysis could be more effective if there had been a pairing of the cases at the beginning of the study. This matching represents an attempt to remove individual differences which otherwise would have been ignored and "to overcome the difficulty imposed by extraneous differences between groups" (36:61).

However, this study does intend to measure persistency of the student and the number who graduate after they receive a junior classification. Hence, the transfers and natives paired at the beginning lose their identity as pairs for the testing of hypotheses pertaining to persistency. For this analysis, the subjects are considered as individuals in the comparison of natives and transfers.

Statistical Techniques

The *t*-test was used to test hypotheses 1, 2, 4, 6, 8; the chi square technique was used to test hypotheses 3, 5, 7, 9, 11; and the analysis of variance was used to test hypothesis 10.

To select an appropriate test of the grade point data on the transfers and natives, certain facts concerning the nature of the data must be considered. The groups are not large, and they are composed of interval type data, parametric data. The *t*-test of significance for differences between means was selected for the purposes of this study, as it enables the researcher to analyze the difference between arithmetic means. The paired *t* or correlated *t* was used as "these groups are correlated samples in which one member of one group will be like a member of the other group" (40:141). Therefore, the correlated design will be evaluated for a significant difference between the two means at the .05 level of significance.

The data secured from the two groups concerning persistency and the number who graduate indicate that the data are non-parametric. That is, the information concerning each student could be categorized with a simple frequency tabulation system. It seems appropriate, therefore, to select a statistical instrument and technique that would measure the sign difference between numbers of cases falling into a given category from each group. For this purpose, chi square was chosen. It was decided that the difference between group totals of students falling in each designated category must reach the .05 level of significant before attributed to factors other than chance.

To determine the significant difference in grade point achieved by individuals from four different junior colleges, it would seem logical to analyze these data by performing four _t_-tests. However, this procedure would violate certain principles of probability, and in addition, may become cumbersome as the number of groups involved is quite large. Wert (40:172) discusses this:

> Whenever only two groups are being compared, _t_ is appropriate for the test of significance between the groups. When, however, a comparison of more than two groups is desired, _t_ is no longer suitable.

The analysis of variance procedure allows one to test for difference among several groups simultaneously. Extension of the basic procedures permits the analysis of several variables as well as interaction among the variables.

CHAPTER IV

ANALYSIS OF THE DATA AND THE RESULTS OF THE STUDY

In this chapter, an analysis of the data collected and tabulated in the study and the results of the statistical treatment of the hypotheses will be stated.

The method of presenting the data collected in this study shall be one which can be followed with minimum difficulty. The statistical data will be summarized in a series of tables. The results of the statistical treatment of each variable will be briefly stated. Each statement will be followed by more specific analysis of the data presented and an application of the results to the related hypotheses. As this study is concerned with a comparison of the academic achievement and persistency of transfers and natives, first the area of academic achievement will be analyzed with its related hypotheses and then the aspect of persistency with its related hypotheses--rather than a discussion of the hypotheses in numerical order. A summary of the results and their significance shall conclude the chapter.

The hypotheses to be tested are in the form of null hypotheses and are listed in Chapter I. In reporting the findings of this study, the five per cent of probability is used. If the null hypothesis is rejected at the five per cent level, it is implied that the sample mean difference is so great that it would occur in less than five per cent of similar samples on the basis of chance. Whenever the null

hypothesis is rejected, the level of significance is reported in decimal form of .05 for the five per cent level of probability.

Analysis of Cumulative Grade Point Average

Comparative data on matched groups of transfers and natives were used in analyzing the quality of performance of these two groups as reflected by their grade point averages. The procedure followed in matching was described in detail in Chapter III.

Table IV presents the comparative data relative to the scholastic performance of the junior college transfer group matched with a group of native Oklahoma State University students on the basis of sex, age, ACT composite score, major area of study, and occupational status of the student's father. The *t*-test was applied to the difference in the grade point means of the transfers and the natives. The means, standard deviations, standard errors, and *t*-values for the transfer and native groups are listed in Table IV.

Analysis by Matched Pairs of Transfers and Natives

The two-year cumulative grade point average indicates a difference of .28 favoring the transfer student upon the completion of the lower division work. This marked differential between the grade point average of transfers at the beginning of their junior year and those of comparable native students is consistent with earlier reports, e.g., Knoell and Medsker (23), Hoyt (19), and French (8), which confirm that normally a student will make higher grades in a junior college than a four-year college. Hoyt and Munday, on the basis of their study of the junior colleges concluded: ' . . . "when academic potential is held

TABLE IV

THE MEANS AND STANDARD DEVIATIONS OF THE GRADE POINTS OF TRANSFERS AND NATIVES BY SEMESTERS AND THE RESULTANT *t*-VALUES FROM THE MEAN DIFFERENCES

Comparative Factors	2 Year Cum. Av.	5th Sem.	6th Sem.	7th Sem.	8th Sem.
No. Pairs	90	90	75	59	48
Mean GPA					
Transfers	2.78	2.72	2.64	2.74	2.81
Natives	2.50	2.50	2.55	2.55	2.59
Mean Differences					
Transfers Natives	.28	.22	.09	.17	.22
S. E. Mean	.08	.07	.08	.08	.09
S. D. Sigma	.72	.69	.71	.62	.62
t-Value	4.65*	3.06*	1.14	2.14*	2.44*

Degrees of Freedom = (Pairs - 1) *Significant at .05 level

constant, junior college grades are higher than four-year college grades" (19). In this particular study involving junior college transfers to Oklahoma State University, the academic potential, as indicated by the ACT composite score, was held constant.

The data from Table IV concerning the native and transfer groups represent a completion of the testing of hypothesis number one. From this analysis, it can be concluded that a significant difference does exist. The *t*-value of 4.65 is well above 1.99 required for significance at the .05 level of probability. This is the basis for the rejection of hypothesis number one which reads: There will be no

significant difference in grade point average between transfers and natives at the beginning of their junior year.

As an analysis of the data concerning the scholastic achievement of these two groups is continued, it is noted that the transfers dropped in performance after the fifth semester by .06 of a grade point. This was also true of the transfers in the major studies conducted by Knoell and Medsker (23), Medsker (27) and other researchers referred to in Chapter II. The greatest drop, however, came after the sixth semester. It was observed that after the sixth semester, a recovery occurred and the grade point average rose steadily. In fact, the grade point for transfers, although statistically insignificant, was higher at the end of their eighth semester and senior year than it was at the end of their junior college experience--going from a 2.78 to a 2.81.

The performance of the natives was quite consistent. Although their grade point remained the same after the fifth and sixth semesters, a slight rise in grade point each semester thereafter was noted. Like the transfer student, the grade point of the native group was higher at the end of the eighth semester than at the end of the first two years of college work, 2.58 as contrasted with 2.50.

The difference in means at the end of the sixth semester was .09, this having a t-value of 1.14. This was not considered significant at the .05 level of confidence. However, in all other cases, at the end of the fifth, seventh, and eighth semesters, the difference in means and the resultant t-values was greater than that required for significance when one used the appropriate degrees of freedom. Therefore, for these three semesters, we must reject the null hypothesis number

two which reads: There will be no significant difference in grade point average between transfers and natives at the end of the fall semester of their junior year and succeeding three semesters.

Analysis by Sex

Another category for analyzing scholastic achievement is by sex. Some studies have noted that women tend to earn higher grades than men in the university probably as a consequence of cultural and maturational factors (23). However, the sex variable was used in this study as a basis for comparison of like pairs--transfers and natives of the same sex--not a comparison of grade point averages between male and female.

In Table V, the means and standard deviations of the grade points of male transfer and native students is given.

The data and profile of the male students reveals the grade point average of the native students to be the same for the fifth semester as it was for their first two years in the University. It continued to improve as they progressed toward graduation. Despite the fact that the transfer students' grade point average dropped after the fifth semester, the transfers' grade point average the eighth semester was higher than was their two-year accumulated junior college average. Also, there was no significant difference between the means of the two groups for semesters six and seven. After statistical treatment, it was noted that the *t*-values of the means did not exceed the figures of 2.00 and 2.01 respectively, required for significance. However, on the basis of the significant differences for the fifth and eighth semesters for the male students, the null hypothesis number four must

TABLE V

THE MEAN AND STANDARD DEVIATIONS OF THE GRADE POINT OF TRANSFERS AND NATIVES BY SEMESTERS AND BY SEX
(Male)

Comparative Factors	2 Year Cum. Av.	5th Sem.	6th Sem.	7th Sem.	8th Sem.
No. Pairs	74	74	61	49	40
Mean GPA					
Transfers	2.70	2.65	2.57	2.70	2.76
Natives	2.45	2.45	2.45	2.51	2.55
Mean Differences					
Transfers Natives	.25	.20	.06	.17	.21
S. E. Mean	.09	.09	.10	.09	.10
S. D. Sigma	.76	.74	.75	.65	.65
t-Value	2.84*	2.32*	.60	1.84	2.11*

Degrees of Freedom = (Pairs - 1) *Significant at .05 level

be rejected: There will be no significant difference in grade point average between the transfers and natives of the same sex.

Table VI gives data on the scholastic performance of the female transfer and native students by semesters.

A very wide differential of .39 in mean grade point between the transfer and native female students at the beginning of the junior year is indicated in Table VI. The difference in the means for the fifth semester is also great, .34 of a grade point. From a table of t's, with the appropriate fifteen degrees of freedom, a t-value of 3.21 is greater than the 2.13 required for significance. Moreover, after the

TABLE VI

THE MEANS AND STANDARD DEVIATIONS OF THE GRADE POINT OF TRANSFERS AND NATIVES BY SEMESTERS AND BY SEX
(Female)

Comparative Factors	2 Year Cum. Av.	5th Sem.	6th Sem.	7th Sem.	8th Sem.
No. Pairs	16	16	14	10	8
Mean GPA					
Transfers	3.10	3.04	2.96	2.93	3.03
Natives	2.71	2.70	2.72	2.74	2.80
Mean Differences					
Transfers	.39	.34	.24	.19	.23
Natives					
S. E. Mean	.12	.11	.12	.16	.17
S. D. Sigma	.48	.42	.45	.51	.49
t-Values	3.21*	2.21*	2.00	1.18	1.33

Degrees of Freedom = (Pairs - 1) *Significant at .05 level

fifth semester, there was no significant difference between the means of the sixth, seventh, and eighth semesters.

However, because significant differences between the means of the grade point averages for the females were found, the null hypothesis number four must be rejected for the fifth semester: There will be no significant difference in grade point average between the transfers and the natives of the same sex.

The information provided in Tables V and VI show that the females had a higher two-year accumulated grade point average than the male students and that they maintained a higher grade point in the upper

division. A reason for this might be that the question of sex differences is related to the areas of study, since choice of major is a sex-related characteristic (23). For example, majors in mathematics attract a predominantly male group, whereas the fine arts attract a higher percentage of women.

Analysis by Major Area of Study

To learn whether differences exist between transfers and natives in the same area of study, analysis was made in the four major areas of study: biological sciences, language and the fine arts, physical sciences, and social sciences. Four tables showing the means and standard deviations of the grade points by major area of study are presented. The first is Table VII for the biological science area.

In the area of the biological sciences for the eighth semester, a *t*-value of 2.12 was indicated which required a *t*-value greater than 2.12 for significance and the rejection of the null hypothesis.

Analysis of the data in Table VII reveals that the transfers dropped in grade point after their entry into the University and continued to do so until the seventh semester at which time their grade point average increased. Furthermore, both transfers and natives had a higher grade point at the end of the eighth semester than at the end of their first two years of college. The mean difference in grade point for these two grade periods was almost identical--the two-year cumulative differential being .22 and the eighth semester .23.

Data pertinent to grade point averages in the areas of language and the fine arts will be presented in Table VIII. Included in these areas are English, journalism, foreign language, speech, music, and art.

TABLE VII

THE MEANS AND STANDARD DEVIATIONS OF THE GRADE POINTS OF TRANSFERS AND NATIVES BY THE MAJOR AREA OF STUDY (Biological Sciences)

Comparative Factors	2 Year Cum. Av.	5th Sem.	6th Sem.	7th Sem.	8th Sem.
No. Pairs	28	28	25	22	17
Mean GPA					
Transfers	2.67	2.64	2.58	2.67	2.73
Natives	2.45	2.45	2.50	2.54	2.50
Mean Differences					
Transfers	.22	.19	.08	.13	.23
Natives					
S. E. Mean	.11	.09	.11	.11	.11
S. D. Sigma	.58	.50	.55	.51	.46
t-Values	2.03	1.93	.73	1.23	2.12

Degrees of Freedom = (Pairs - 1) *Significant at .05 level

Table VIII concerning language and fine arts majors shows a significant difference in the two-year cumulative average. The .38 differential favoring the transfers at the end of the two years is reduced to .03 at the end of the seventh semester. At the eighth semester the natives who increased in grade point with each successive semester overtook the transfers in grade point. However, it is important to note that only four pairs remained for the eighth semester.

Although there was a significant difference for the two-year cumulative average, there was no significance noted for the four semesters.

TABLE VIII

THE MEANS AND STANDARD DEVIATIONS OF THE GRADE POINTS OF TRANSFERS AND NATIVES BY THE MAJOR AREA OF STUDY (Language and Fine Arts)

Comparative Factors	2 Year Cum. Av.	5th Sem.	6th Sem.	7th Sem.	8th Sem.
No. Pairs	13	13	12	8	4
Mean GPA					
Transfers	2.92	2.85	2.74	2.61	2.86
Natives	2.54	2.56	2.57	2.58	2.88
Mean Differences					
Transfers	.38	.29	.17	.03	
Natives					.02
S. E. Mean	.15	.13	.14	.19	.17
S. D. Sigma	.53	.48	.48	.53	.35
t-Value	2.56*	2.13	1.24	.17	.02

Degrees of Freedom = (Pairs - 1) *Significant at .05 level

The next table will give the means and standard deviations of the grade points of transfers and natives in the major area of the physical sciences.

From Table IX pertaining to the physical sciences, it can be seen that there are no signficant *t*-values in this area of study. The difference in the means was not sufficiently great to reach a significance at .05.

Furthermore, it was noted that the transfers with a major in physical sciences possessed a 3.11 two-year cumulative grade point while the natives earned a 2.92. However, the grade point average of the

TABLE IX

THE MEANS AND STANDARD DEVIATIONS OF THE GRADE POINTS OF TRANSFERS AND NATIVES BY THE MAJOR AREA OF STUDY (Physical Sciences)

Comparative Factors	2 Year Cum. Av.	5th Sem.	6th Sem.	7th Sem.	8th Sem.
No. Pairs	18	18	15	12	12
Mean GPA					
Transfers	3.11	3.06	2.89	2.01	2.99
Natives	2.92	2.88	2.84	2.97	2.95
Mean Differences					
Transfers	.19	.18	.05	.04	.04
Natives					
S. E. Mean	.15	.14	.17	.20	.19
S. D. Sigma	.64	.58	.64	.68	.66
t-Value	1.26	1.34	.29	.22	.20

Degrees of Freedom = (Pairs - 1) *Significant at .05 level

transfers dropped from 3.11 to 2.99 at the end of the eighth semester. The grade point of the natives increased slightly during this same period.

The next table, Table X, will give an analysis of grade point averages in the area of the Social Sciences. This is an area of study in which the largest number of matched pairs of natives and transfers is represented in this study. It is also that area of study which attracted transfers and natives with junior classification and the lowest two-year cumulative averages of the four major areas of study.

TABLE X

THE MEANS AND STANDARD DEVIATIONS OF THE GRADE POINTS OF TRANSFERS AND NATIVES BY THE MAJOR AREA OF STUDY (Social Sciences)

Comparative Factors	2 Year Cum. Av.	5th Sem.	6th Sem.	7th Sem.	8th Sem.
No. Pairs	31	31	23	17	15
Mean GPA					
Transfers	2.62	2.54	2.50	2.70	2.73
Natives	2.28	2.29	2.41	2.32	2.33
Mean Differences					
Transfers Natives	.34	.25	.09	.38	.40
S. E. Mean	.17	.17	.20	.18	.20
S. D. Sigma	.94	.95	.98	.73	.78
t-Value	1.98	1.50	.44	2.13*	1.98

Degrees of Freedom = (Pairs - 1) *Significant at .05 level

From Table X it can be observed that there exists a significant difference in grade point average between the transfers and natives for the seventh semester. For this semester the t-value was 2.13, and 2.12 was required for significance at the .05 level with sixteen degrees of freedom. For the other semesters, however, there were no statistical significant differences. Therefore, for the seventh semester only in the social science area of study, we must reject the null hypothesis number six: There will be no significant difference in grade point average between the transfers and natives in the same area of study.

Analysis with other major areas of study gives evidence that physical science majors possessed both the highest two-year cumulative average as well as the highest grade point average at the end of the eighth semester of the four major areas.

Analysis by the Occupational Classification of the Father

The inference is often made that there is a correlation between the intelligence of students with socio-economic and non-intellectual factors such as the income or the occupation of the father. If this assumption is correct, students with fathers in the higher socio-economic classifications, such as the professions, should earn a higher grade point average than those students coming from homes where the fathers are laborers.

In this study, all students did not pursue the same major. Therefore, it is not possible to determine whether the above is also characteristic of the transfers and natives in this study. However, an attempt has been made in the following pages to determine whether significant differences in grade point averages exist between transfers and natives whose fathers are in the same occupational classification. Analysis is made in five major occupational areas: Professional; Proprietor, Manager, Farmer; Clerical or Sales; Skilled, Semi-skilled; Foreman; and Unskilled. Table XI shows the means and standard deviations of the grade points of transfers and natives whose fathers were classified as professionals.

The results in Table XI show that both the transfers and natives dropped in grade point average after the first two years of college work. The performance of students of professional fathers was unique

TABLE XI

THE MEANS AND STANDARD DEVIATIONS OF THE GRADE POINTS OF TRANSFERS AND NATIVES BY THE OCCUPATION OF THEIR FATHERS
(Professional)

Comparative Factors	2 Year Cum. Av.	5th Sem.	6th Sem.	7th Sem.	8th Sem.
No. Pairs	15	15	13	9	8
Mean GPA					
Transfers	2.47	2.44	2.27	2.38	2.36
Natives	2.63	2.54	2.51	2.61	2.61
Mean Differences					
Transfers					
Natives	.16+	.10+	.24+	.23+	.25+
S. E. Mean	.15	.14	.16	.15	.21
S. D. Sigma	.56	.55	.59	.44	.51
t-Value	1.10	.75	1.56	1.59	1.19

Degrees of Freedom = (Pairs - 1) *Significant at .05 level

+Natives mean greater than Transfers

in that despite the fact that the overall grade point for the 90 matched pairs was significantly higher for the transfers as contrasted to the natives, the natives' grade point was not only higher at the end of two years but also remained higher than the transfers for the remaining four semesters. However, the mean differences were not statistically significant.

The following Table XII gives an analysis of grade point averages for students whose father was a proprietor, manager, or farmer.

TABLE XII

THE MEANS AND STANDARD DEVIATIONS OF THE GRADE POINTS OF TRANSFERS AND NATIVES BY THE OCCUPATION OF THEIR FATHERS (Proprietor, Manager, Farmer)

Comparative Factors	2 Year Cum. Av.	5th Sem.	6th Sem.	7th Sem.	8th Sem.
No. Pairs	31	31	25	21	17
Mean GPA					
Transfers	2.67	2.63	2.59	2.74	2.76
Natives	2.54	2.54	2.49	2.50	2.51
Mean Differences					
Transfers	.13	.09	.10	.24	.25
S. E. Mean	.14	.12	.14	.10	.10
S. D. Sigma	.79	.69	.68	.47	.40
t-Value	.93	.71	.77	2.30*	2.57*

Degrees of Freedom = (Pairs - 1) *Significant at .05 level

The data pertaining to students whose fathers are proprietors, managers, or farmers is summarized in Table XII and indicates that the transfers increased in grade point average from a 2.67 two-year cumulative average to a 2.76 at the end of the eighth semester. The grade point of the natives, however, dropped slightly from 2.54 to 2.51. The difference in the means of the two groups is statistically significant only for semesters seven and eight. The t-values of 2.30 and 2.57 are well above the .05 level of 2.09 and 2.12 required for significance for semesters seven and eight, respectively. Therefore, on the basis of the findings for semesters seven and eight for the occupation of proprietor, manager, or farmer, we must reject hypothesis number eight:

There will be no significant difference in grade point average between the transfers and natives whose fathers are in the same occupational classification.

Table XIII concerns the grade point mean of transfers and natives whose fathers were engaged in clerical or sales occupations. The table reveals a very large differential between the grade point mean of transfers and natives at the end of two years of college work, .46. The findings also show that the grade point of the transfers decreased from 3.09 to 3.03 and that the grade point of the natives increased slightly--2.63 to 2.64. There was a significant difference in the means of the two groups at the end of the fifth semester, the t-value being 2.38 with 2.23 required for significance. Therefore, on the basis of the findings for semester five for students whose fathers were employed in clerical or sales occupations, we must reject the null hypothesis number eight: There will be no significant difference in grade point average between the transfers and natives whose fathers are in the same occupational classification.

Data concerning the grade point averages of students whose fathers are employed in skilled, semi-skilled occupations or in foreman positions are found in Table XIV.

Table XIV shows that the grade point average of the natives improved at the end of the sixth semester to the extent that the natives surpassed the transfers in academic performance, 2.41 to 2.37. However, for the eighth semester this was again reversed, the transfers' cumulative grade point rose to a 2.52 as contrasted to the natives' 2.47. In no semester was there a statistical significant difference.

TABLE XIII

THE MEANS AND STANDARD DEVIATIONS OF THE GRADE POINTS OF TRANSFERS AND NATIVES BY THE OCCUPATION OF THEIR FATHERS
(Clerical or Sales)

Comparative Factors	2 Year Cum. Av.	5th Sem.	6th Sem.	7th Sem.	8th Sem.
No. Pairs	11	11	10	9	8
Mean GPA					
Transfers	3.09	3.06	2.98	2.95	3.03
Natives	2.63	2.60	2.62	2.60	2.64
Mean Differences					
Transfers	.46	.46	.36	.35	.29
Natives					
S. E. Mean	.21	.19	.22	.24	.25
S. D. Sigma	.70	.64	.70	.71	.71
t-Value	2.21	2.38*	1.65	1.49	1.59

Degrees of Freedom = (Pairs - 1) *Significant at .05 level

The final analysis is made to determine if there is any significant difference in grade point averages between the transfers and natives whose fathers are unskilled workers. These data are found in Table XV.

In reviewing the results in Table XV for the students whose fathers were classified as unskilled workers, the small grade point differential in the two-year cumulative average for transfers and natives was immediately noted. At the end of the fifth semester, the natives' grade point was but .01 greater than the transfers'. For semester seven and eight, a wide differential of .39 grade point

TABLE XIV

THE MEANS AND STANDARD DEVIATIONS OF THE GRADE POINTS OF TRANSFERS AND NATIVES BY THE OCCUPATION OF THEIR FATHERS
(Skilled; Semi-skilled, Foreman)

Comparative Factors	2 Year Cum. Av.	5th Sem.	6th Sem.	7th Sem.	8th Sem.
No. Pairs	15	15	11	8	8
Mean GPA					
Transfers	2.48	2.44	2.37	2.45	2.52
Natives	2.20	2.19	2.41	2.50	2.47
Mean Differences					
Transfers	.28	.25			.05
Natives			.04	.05	
S. E. Mean	.21	.22	.22	.26	.32
S. D. Sigma	.81	.85	.71	.74	.80
t-Value	1.34	1.15	.18	.20	.13

Degrees of Freedom = (Pairs - 1) *Significant at .05 level

favoring the transfer student is observed, although the t-values did not reach the level required for significance.

Analysis by Junior College Attended

Grade point achievement in the junior college has been found to be an important factor in achievement after transfer (24). There is some speculation, however, that some colleges "grade higher" than other colleges. If this is the situation, students from certain junior colleges would tend to transfer to Oklahoma State University with a higher grade point average than would students who transferred from other junior colleges.

TABLE XV

THE MEANS AND STANDARD DEVIATIONS OF THE GRADE POINTS OF TRANSFERS AND NATIVES BY THE OCCUPATION OF THEIR FATHERS
(Unskilled Worker)

Comparative Factors	2 Year Cum. Av.	5th Sem.	6th Sem.	7th Sem.	8th Sem.
No. Pairs	18	18	16	12	11
Mean GPA					
Transfers	2.90	2.83	3.00	3.06	3.11
Natives	2.86	2.84	2.73	2.67	2.72
Mean Differences					
Transfers	.04		.27	.39	.39
Natives		.01			
S. E. Mean	.19	.19	.19	.21	.22
S. D. Sigma	.81	.80	.78	.73	.74
t-Value	.02	.05	1.39	1.84	1.75

Degrees of Freedom = (Pairs - 1) *Significant at .05 level

The following table, Table XVI, gives statistical data for four junior colleges which in this study had the greatest number of transfers to Oklahoma State. The analysis has been made to determine whether there is a significant difference in grade point--before and after transfer to Oklahoma State--between the transfers as to the particular junior college attended.

The results of the analysis of variance reveal that no statistically significant difference in grade point averages exist for students who attended the four junior colleges studied: Cameron State Agricultural College, Eastern Oklahoma A & M College, Northeastern Oklahoma

TABLE XVI

ANALYSIS OF VARIANCE OF GRADE POINT AVERAGES OF TRANSFER STUDENTS AT SEMESTERS AND AT GRADUATION WHO HAD ATTENDED FOUR JUNIOR COLLEGES IN OKLAHOMA

Source of Variation	Degrees Freedom	Sum of Squares	Mean Squares	F-Ratio
Two-year Cumulative				
Colleges	3	.62	.21	.59
Within	70	24.36	.35	
Total	73	24.98		
Sixth Semester				
Colleges	3	.43	.14	.30
Within	63	30.06	.48	
Total	66	30.49		
Seventh Semester				
Colleges	3	.65	.22	.84
Within	53	13.77	.26	
Total	56	14.42		
Eighth Semester				
Colleges	3	1.09	.36	1.56
Within	49	11.36	.23	
Total	52	12.45		
Graduated in Four Years				
Colleges	3	.88	.29	1.45
Within	14	2.86	.20	
Total	17	3.74		
Graduated With a Degree				
Colleges	3	1.07	.36	1.80
Within	40	7.41	.20	
Total	43	8.48		

A & M College, and Northern Oklahoma College. The F-ratios were considerably below that required for significance with the appropriate degrees of freedom. Therefore, hypothesis number ten must be accepted:

There will be no significant difference in grade point between the transfers as to the particular junior college attended.

Analysis of Persistency

Persistency is another measurement of academic success. The criterion is indicated by the proportion of a given group of students who continue or persist through each semester toward graduation and the number who graduate. The primary concern of many educators is not the number of students who initially enroll, but the number who graduate. Although in this study there will be an analysis of the persistency of transfers and natives by semesters and at graduation, the emphasis will be on the number who graduate. For this analysis the transfers are no longer paired but are, instead, treated as individuals. Chi square is used for the analysis.

The data contained in the tables will be analyzed with its related hypothesis. It will be noted that in this phase of the study the tables begin with the sixth semester rather than the fifth, since it was necessary for the student to have completed at least one semester and earn university credit before data on his academic grade point performance could be obtained. Therefore, the number of students who persisted for the fifth semester is the same as the number who began the study, 90 transfers and 90 natives.

Analysis by Total Sample of Transfers and Natives

Table XVII gives a chi square analysis of the persistency of transfer and native students at semesters and at graduation.

Earlier studies of attrition and persistency indicate that attrition tends to be higher for junior college transfer students than for native students and that junior college students often require more time to complete their degree programs (24). Inspection of Table XVII shows that these persistency traits as they relate to graduation are not characteristic of transfers at Oklahoma State University. The analysis indicates that there is no statistically significant difference between the transfers and natives in persistency to degree attainment--graduating in four years ("on time") and graduating with a degree.

TABLE XVII

CHI SQUARE ANALYSIS OF THE PERSISTENCY OF TRANSFER AND NATIVE STUDENTS AT SEMESTERS AND AT GRADUATION

Period	Transfers	Natives	Totals	Chi Square
Sixth Semester				
Enrolled	81	84	165	
Not Enrolled	9	6	15	.65
Seventh Semester				
Enrolled	67	79	146	
Not Enrolled	23	11	34	5.22*
Eighth Semester				
Enrolled	60	74	134	
Not Enrolled	30	16	46	5.72*
Graduated in Four Years				
Yes	22	26	48	
No	68	64	132	.45
Graduated With a Degree				
Yes	47	56	103	
No	43	34	77	1.84

Degrees of Freedom = 1 *Significant at .05 level

Further information in Table XVII shows significant chi squares for the seventh and eighth semesters at 5.22 and 5.72 which are well above the 3.84 required for significance at the .05 level with one degree of freedom. The sixth semester, however, shows no significant difference. Therefore, on the basis of the significant difference for semesters seven and eight, hypothesis number three must be rejected: There will be no significant difference in the number who persist between the transfers and natives of the same sex.

Analysis by Sex

Table XVIII is a chi square analysis of the persistency of male transfers and natives at semesters and at graduation.

The following table, Table XVIII, indicates three instances where no significant differences in persistency between the two male groups exist. Most important is that there is no statistical significant difference between the male transfers and natives as it relates to graduation. For the seventh and eighth semester there was a decided significance. In these chi squares, there is a great difference between the observed frequencies and the expected frequencies. Hence, the value of the chi square is also large--7.66 and 8.10--denoting that there is a significant difference in the two groups, the transfers and natives, as to persistency for these particular semesters. Therefore, on the basis of the significance for semesters seven and eight for male students the null hypothesis number five must be rejected: There will be no significant difference in the number who persist between the transfers and natives of the same sex.

TABLE XVIII

CHI SQUARE ANALYSIS OF THE PERSISTENCY OF TRANSFER AND NATIVE STUDENTS BY SEX AT SEMESTERS AND AT GRADUATION
(Male)

Period	Transfers	Natives	Totals	Chi Square
Sixth Semester				
Enrolled	66	70	136	
Not Enrolled	8	4	12	1.45
Seventh Semester				
Enrolled	54	67	121	
Not Enrolled	20	7	27	7.66*
Eighth Semester				
Enrolled	48	63	111	
Not Enrolled	26	11	37	8.10*
Graduated in Four Years				
Yes	17	18	35	
No	57	56	113	.04
Graduated With a Degree				
Yes	39	45	84	
No	35	29	64	.99

Degrees of Freedom = 1 *Significant at .05 level

A recent study gives evidence that females had a greater tendency to graduate "on time" as contrasted with the males (24). The following Table XIX will be concerned with the persistency of female transfer and native students at semesters and at graduation.

The chi square values listed in Table XIX show no significant difference in the persistency of female and transfer and native students. Although weighted toward the native students, there again is no significant difference in persistency to degree attainment.

Analysis by Major Area of Study

Often it is thought that the students' probability of success or failure after transfer would depend to a considerable extent upon their choice of major--that students with particular majors would have a higher probability of graduating in four years or graduating with a degree than students with other majors. Such an analysis is made in the four tables which follow. Table XX gives data relative to the success of transfers and natives as reflected by their persistency in the biological science area of study.

An analysis of the biological sciences showed that for the eighth semester there was a significant difference in the number who persisted between the transfers and natives. The chi square value of 6.79 was well above the 3.84 necessary for significance. Hence, the null hypothesis number seven must be rejected for the eighth semester: There is no significant difference in the number who persist between the transfer and natives in the same area of study. The other chi square values were not significant.

The next major area of study analyzed is that of language and the fine arts. Table XXI gives a chi square analysis of the persistency of transfers and natives in this area of study.

The findings as found in Table XXI do not reveal any significant difference in the number who persist between the transfers and natives in the area of language and the fine arts. The observed frequencies are in close agreement with the expected frequencies and the differences.

TABLE XIX

CHI SQUARE ANALYSIS OF THE PERSISTENCY OF TRANSFER AND NATIVE STUDENTS BY SEX AT SEMESTERS AND AT GRADUATION (Female)

Period	Transfers	Natives	Totals	Chi Square
Sixth Semester				
Enrolled	15	14	29	
Not Enrolled	1	2	3	.37
Seventh Semester				
Enrolled	13	12	25	
Not Enrolled	3	4	7	.21
Eighth Semester				
Enrolled	12	11	23	
Not Enrolled	4	5	9	.18
Graduated in Four Years				
Yes	5	8	13	
No	11	8	19	1.17
Graduated With a Degree				
Yes	8	11	19	
No	8	5	13	1.17

Degrees of Freedom = 1 *Significant at .05 level

The next analysis relative to persistency is in the area of the physical sciences. The chi square analysis is presented in Table XXII.

Table XXII and the chi square analysis is characteristic of most previous analyses in the persistency of transfers and natives in that there were no significant chi square values.

The figures, however, in the table are quite unusual. The same number of transfers and natives graduated with a degree. Thirteen of the eighteen had graduated with a degree.

TABLE XX

CHI SQUARE ANALYSIS OF THE PERSISTENCY OF TRANSFER AND NATIVE STUDENTS BY MAJOR AREA OF STUDY (Biological Sciences)

Period	Transfers	Natives	Totals	Chi Square
Sixth Semester				
Enrolled	26	26	52	
Not Enrolled	2	2	4	.00
Seventh Semester				
Enrolled	23	26	49	
Not Enrolled	5	2	7	.66
Eighth Semester				
Enrolled	18	26	44	
Not Enrolled	10	2	12	6.79*
Graduated in Four Years				
Yes	7	11	18	
No	21	17	38	1.31
Graduated With a Degree				
Yes	14	19	33	
No	14	9	23	1.84

Degrees of Freedom = 1 *Significant at .05 level

The final area of study to be analyzed is the area of the social sciences. The chi square of persistency of transfers and natives in this area of study is found in Table XXIII.

From Table XXIII it can be seen immediately the significant difference in persistency between the transfers and natives for the seventh semester of those majoring in the social sciences. The chi square value of 5.38 for this semester is greater than the 3.84 required for significance.

TABLE XXI

CHI SQUARE ANALYSIS OF THE PERSISTENCY OF TRANSFER AND NATIVE STUDENTS BY MAJOR AREA OF STUDY
(Language & Fine Arts)

Period	Transfers	Natives	Totals	Chi Square
Sixth Semester				
Enrolled	13	12	25	
Not Enrolled	0	1	1	1.04
Seventh Semester				
Enrolled	11	10	21	
Not Enrolled	2	3	5	.25
Eighth Semester				
Enrolled	9	8	17	
Not Enrolled	4	5	9	.17
Graduated in Four Years				
Yes	2	3	5	
No	11	10	21	.25
Graduated With a Degree				
Yes	5	7	12	
No	8	6	14	.62

Degrees of Freedom = 1 *Significant at .05 level

There was no significant chi square values for other semesters and at graduation. However, on the basis of the value for the seventh semester, the null hypothesis number seven must be rejected: There is no significant difference in the number who persist between the transfers and natives in the same area of study. In this instance, it was the area of social science.

TABLE XXII

CHI SQUARE ANALYSIS OF THE PERSISTENCY OF TRANSFER AND NATIVE STUDENTS BY MAJOR AREA OF STUDY (Physical Sciences)

Period	Transfers	Natives	Totals	Chi Square
Sixth Semester				
Enrolled	16	17	33	
Not Enrolled	2	1	3	.36
Seventh Semester				
Enrolled	14	16	30	
Not Enrolled	4	2	6	.78
Eighth Semester				
Enrolled	14	16	30	
Not Enrolled	4	2	6	.78
Graduated in Four Years				
Yes	7	5	12	
No	11	13	24	.49
Graduated With a Degree				
Yes	13	13	26	
No	5	5	10	.00

Degrees of Freedom = 1 *Significant at .05 level

In the analysis of persistency by the four major areas of study, the eighth semester for the Biological Sciences and the seventh semester for the Social Sciences were the only significant differences out of 20 comparisons made. Despite these significances, it did not affect the persistency as it relates to graduation. There was no statistical significant differences observed between transfers and natives as to the number who graduate in four years and those who graduate with a degree.

TABLE XXIII

CHI SQUARE ANALYSIS OF THE PERSISTENCY OF TRANSFER AND NATIVE STUDENTS BY MAJOR AREA OF STUDY (Social Sciences)

Period	Transfers	Natives	Totals	Chi Square
Sixth Semester				
Enrolled	26	29	55	
Not Enrolled	5	2	7	1.44
Seventh Semester				
Enrolled	19	27	46	
Not Enrolled	12	4	16	5.38*
Eighth Semester				
Enrolled	19	24	43	
Not Enrolled	12	7	19	1.90
Graduated in Four Years				
Yes	6	7	13	
No	25	24	49	.10
Graduated With a Degree				
Yes	15	17	32	
No	16	14	30	.26

Degrees of Freedom = 1 *Significant at .05 level

Analysis by the Occupational Classification of Father

The next pages will analyze whether there is a significant difference in the number who persist between the transfers and natives whose fathers are in the same occupational classification. Five occupational classifications will be presented in Tables XXIV through Table XXVIII. The first table is a chi square analysis of the persistency of transfers and natives for students whose fathers were in professional occupations.

Table XXIV shows that there is a significant difference in persistency between the transfers and natives for the eighth semester. This occurred when the number of transfers not enrolled for the eighth semester increased while the number of natives enrolled for the same semester remained practically the same. This resulted in a chi square value of 3.97, a figure greater than 3.84 needed for significance. There was no significance indicated for the other values. Hence, the null hypothesis number nine must be rejected for the eighth semester: There is no significant difference in the number who persist between the transfers and natives whose fathers are in the same occupational classifications.

Table XXV will be a chi square analysis of the persistency of transfer and native students whose fathers are proprietors, managers, or farmers.

The information given in Table XXV shows no chi square values that are statistically significant. Therefore, there is no significant difference in the number who persist between the transfers and natives whose fathers are engaged in the same type of occupational activity.

Table XXVI gives data concerning the persistency of transfer and native students whose fathers are in clerical or sales occupations.

As Table XXVI is analyzed, it becomes noticeable that again there are no chi squares that are high enough to be significant.

Perhaps one of the most important observations from the data is that the transfers had a greater number of students graduating with a degree than did the natives. The chi square for graduating with a degree was 3.66 and 3.84 was necessary for significance.

TABLE XXIV

CHI SQUARE ANALYSIS OF THE PERSISTENCY OF TRANSFER AND NATIVE STUDENTS BY THE OCCUPATION OF THE FATHERS (Professional)

Period	Transfers	Natives	Totals	Chi Square
Sixth Semester				
Enrolled	14	14	28	
Not Enrolled	1	1	2	.00
Seventh Semester				
Enrolled	10	14	24	
Not Enrolled	5	1	6	3.00
Eighth Semester				
Enrolled	8	13	21	
Not Enrolled	7	2	9	3.97*
Graduated in Four Years				
Yes	2	5	7	
No	13	10	23	1.67
Graduated With a Degree				
Yes	7	11	18	
No	8	4	12	2.22

Degrees of Freedom = 1 *Significant at .05 level

Table XXVII gives the chi square analysis of the persistency of transfer and native students whose fathers were engaged in skilled or semi-skilled occupations or in foremen positions.

Table XXVII clearly indicates by the fact of no significant chi squares that there is no significant difference in the number who persist between the transfers and natives when the father is employed in a skilled, semi-skilled occupation, or a foreman capacity.

TABLE XXV

CHI SQUARE ANALYSIS OF THE PERSISTENCY OF TRANSFER AND NATIVE STUDENTS BY THE OCCUPATION OF THEIR FATHERS (Proprietor, Manager, Farmer)

Period	Transfers	Natives	Totals	Chi Square
Sixth Semester				
Enrolled	28	29	57	
Not Enrolled	3	2	5	.22
Seventh Semester				
Enrolled	23	28	51	
Not Enrolled	8	3	11	2.76
Eighth Semester				
Enrolled	21	26	47	
Not Enrolled	10	5	15	2.20
Graduated in Four Years				
Yes	6	8	14	
No	25	23	48	.37
Graduated With a Degree				
Yes	13	19	32	
No	18	12	30	2.33

Degrees of Freedom = 1 *Significant at .05 level

Table XXVIII presents data as to the persistency of students whose fathers were employed as unskilled workers.

As has been the case in many previous tables, Table XXVIII shows no significant difference in the persistency of students whose fathers were classified as unskilled workers.

In the analysis of the five occupational classifications, there was but one significant difference in the 25 comparisons that were made. This was the eighth semester for fathers in a professional

TABLE XXVI

CHI SQUARE ANALYSIS OF THE PERSISTENCY OF TRANSFER AND NATIVE STUDENTS BY THE OCCUPATION OF THEIR FATHERS (Clerical or Sales)

Period	Transfers	Natives	Totals	Chi Square
Sixth Semester				
Enrolled	11	10	21	
Not Enrolled	0	1	1	1.05
Seventh Semester				
Enrolled	11	9	20	
Not Enrolled	0	2	2	2.20
Eighth Semester				
Enrolled	10	9	19	
Not Enrolled	1	2	3	.37
Graduated in Four Years				
Yes	3	4	7	
No	8	7	15	.21
Graduated With a Degree				
Yes	10	6	16	
No	1	5	6	3.66

Degrees of Freedom = 1 *Significant at .05 level

capacity. Hence again there was no statistical difference between the transfers and natives as to the number who graduated in four years and those who graduated with a degree.

Analysis by Junior College Attended

The analysis of persistency by junior college attended considered those four junior colleges which had the largest number of transfers to

TABLE XXVII

CHI SQUARE ANALYSIS OF THE PERSISTENCY OF TRANSFER AND NATIVE STUDENTS BY THE OCCUPATION OF THEIR FATHERS (Skilled, Semi-skilled, Foreman)

Period	Transfers	Natives	Totals	Chi Square
Sixth Semester				
Enrolled	12	14	26	
Not Enrolled	3	1	4	1.15
Seventh Semester				
Enrolled	9	13	22	
Not Enrolled	6	2	8	2.72
Eighth Semester				
Enrolled	8	11	19	
Not Enrolled	7	4	11	1.29
Graduated in Four Years				
Yes	3	4	7	
No	12	11	23	.18
Graduated With a Degree				
Yes	6	7	13	
No	9	8	17	.14

Degrees of Freedom = 1 *Significant at .05 level

the College of Arts and Sciences at Oklahoma State University. The analysis is given in Table XXIX.

The findings revealed in Table XXIX show that the number who persisted and dropped was not significantly different from one junior college to the other. The value of chi squares was not statistically significant at the .05 level. Hence, attendance at a particular junior college: A--Cameron State Agricultural College, B--Eastern Oklahoma A & M College, C--Northeastern Oklahoma A & M College, or

TABLE XXVIII

CHI SQUARE ANALYSIS OF THE PERSISTENCY OF TRANSFER AND NATIVE STUDENTS BY THE OCCUPATION OF THEIR FATHERS
(Unskilled Worker)

Period	Transfers	Natives	Totals	Chi Square
Sixth Semester				
Enrolled	16	17	33	
Not Enrolled	2	1	3	.35
Seventh Semester				
Enrolled	14	15	29	
Not Enrolled	4	3	7	.18
Eighth Semester				
Enrolled	13	15	28	
Not Enrolled	5	3	8	.54
Graduated in Four Years				
Yes	8	5	13	
No	10	13	23	1.08
Graduated With a Degree				
Yes	11	13	24	
No	7	5	12	.50

Degrees of Freedom = 1 *Significant at .05 level

D--Northern Oklahoma College does not statistically have a significant effect on the persistency to degree attainment.

TABLE XXIX

CHI SQUARE ANALYSIS OF THE PERSISTENCY OF TRANSFER STUDENTS AT SEMESTERS AND AT GRADUATION WHO HAD ATTENDED FOUR JUNIOR COLLEGES IN OKLAHOMA

Period	Junior College A	B	C	D	Totals	Chi Square
Sixth Semester						
Enrolled	15	10	28	14	67	
Not Enrolled	2	1	3	1	7	.25
Seventh Semester						
Enrolled	13	8	25	11	57	
Not Enrolled	4	3	6	4	17	.46
Eighth Semester						
Enrolled	11	8	23	11	53	
Not Enrolled	6	3	8	4	21	.53
Graduated in Four Years						
Yes	3	3	8	4	18	
No	14	8	23	11	56	.55
Graduated With a Degree						
Yes	9	7	18	7	41	
No	8	4	13	8	33	.90

Degrees of Freedom = 1 *Significant at .05 Level

Summary

The first part of this chapter analyzed academic performance as reflected by grade point average.

From Table IV, it is noticed that the transfers had a two-year cumulative grade point that was higher than the natives and that this difference was significant. Therefore, hypothesis number one must be rejected: There is no significant difference in grade point between

transfers and natives at the beginning of their junior year.

Further observation of Table IV, shows that this significant difference continued for semesters five, seven, and eight. Hence, hypothesis number two must be rejected: There will be no significant difference in grade point average between transfers and natives at the end of the fall semester of their junior year and succeeding three semesters. No statistical significance was noted for semester six. Therefore, for this semester hypothesis number two is accepted.

The analysis of grade point averages in Tables V and VI by sex again shows that both male and female transfers had a higher grade point average than did the natives. However, this difference was significant for the first two years and the fifth semester for both male and female. For the male, the eighth semester difference in mean was also significant. For these significant t-values, the hypothesis number four is rejected: There will be no significant difference between the transfers and natives of the same sex. However, for semesters six and seven for the males; and semesters six, seven, and eight for the females, hypothesis number three is accepted.

In reviewing data from the four tables pertaining to the major area of study, it becomes quite obvious that only one t-value was high enough to reach significance at the .05 level. This was for the seventh semester in the major area of the social sciences. Hence, for only this seventh semester the null hypothesis number six must be rejected: There will be no significant difference in grade point average between the transfers and natives in the same area of study. For all the other instances in which there were no significant differences, the hypothesis number six must be accepted.

Information pertaining to the language and fine arts majors indicate a significant differential of .38 favoring the transfers at the end of two years. At the end of the eighth semester, the natives overtook the transfers in grade point.

For most of the major areas of study, there appeared to be a drop in grade point after receiving a junior classification. Then beginning with the seventh semester, the grade point average seemed to improve.

In the analysis of the grade point average in relation to the occupational classification of the students' fathers, it becomes quite evident that for the two-year cumulative average, there is no statistically significant difference between the grade point means of the transfer and native groups. Also, there are but three instances in which there is a significant difference. These occurred in semesters seven and eight and involved students whose fathers were proprietors, managers, or farmers. Significance was also indicated for the fifth semester for students whose fathers were engaged in clerical or sales occupations. Hence, only for these situations, the hypothesis number eight had to be rejected: There will be no significant differences in grade point average between the transfers and natives whose fathers are in the same occupational classification.

The results of the analysis of variance in Table XVI reveals that no statistically significant difference in grade point average exist between the four junior colleges studied. The F-ratios were considerably below that required for significance. Therefore, hypothesis number ten must be accepted: There will be no significant difference in grade point average between the transfers as to the particular junior college attended.

The second part of this chapter is concerned with the persistency of transfer and native students. Chi square was used for the analysis.

The analysis of the total sample of 90 transfers and 90 natives showed significant differences for the seventh and eighth semesters and no significant differences for the sixth semester, graduated in four years, and graduated with a degree. Hence, the hypothesis number three must be rejected for semesters seven and eight and accepted for the other periods. This hypothesis reads: There will be no significant difference between those who persist between the transfer and the native students.

Tables XVIII and XIX analyze the persistency of students of the same sex. Chi square values show a significant difference between the male transfer and natives for the seventh and eighth semesters. For these semesters, the hypothesis number five must be rejected: There will be no significant difference in the number who persist between the transfers and natives of the same sex. However, for the sixth semester, graduated in four years, and graduated with a degree, there was no significant difference. Therefore, for these periods, the hypothesis must be accepted.

Tables XX through XXIII are concerned with the persistency as it relates to the students' choice of major. There were significant differences indicated only in two instances: In the major area of biological sciences for the eighth semester and the area of social sciences for the seventh semester. For these two semesters, the hypothesis number seven must be rejected: There will be no significant difference in the number who persist between the transfers and the natives in the same area of study. Hypothesis number seven is accepted

in the many other instances in which no significant differences were revealed.

The results of persistency measurement by the occupational classification of the students' father is given in Tables XXIV through XXVIII.

In the analysis of all five occupational classifications, there was but one chi square value which was significant. This was for the eighth semester and for students whose fathers were classified as professionals. Therefore, for this semester hypothesis number nine must be rejected: There is no significant difference in the number who persist between the transfers and natives whose fathers are in the same occupational classification. For all the other periods in the tables, this hypothesis must be accepted.

The final Table XXIX measures the persistency of students at four junior colleges. There were no significant chi squares. Therefore, hypothesis number eleven must be accepted: There will be no significant differences in the number who persist between the transfers as to the particular junior college attended.

In Tables IV through XV that analyzed cumulative grade point averages, in practically all comparisons the transfers had not only a significantly higher two-year grade point average than did the natives but also the transfers maintained this superiority after transfer to Oklahoma State.

In the analysis of persistency of transfers and natives, Table XVII through XXVIII, there was not a single instance when there was a statistical significant difference in the number who graduated in four years and the number who graduated with a degree.

In the analysis of grade point average and persistency of students who had attended one of the four junior colleges in the study, Tables XVI and XXIX no significance was noted either in grade point or persistency between the four junior colleges.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The purpose of this study was to analyze the academic success of junior college transfer and native students in the College of Arts and Sciences at Oklahoma State University.

The objective of the study was to determine whether junior college transfer students, who are becoming a larger portion of the student population in the upper division at Oklahoma State University, perform as well scholastically as native students in the major areas of the arts and sciences and whether their persistency to graduate is equal to that of the natives.

A review of the literature gave conflicting evidence as to the success of the transfer students when contrasted with the natives. A variety of research designs and techniques were used to analyze the differences in the two groups. This study has used a combination of these research techniques in the treatment of data in reaching conclusions concerning the transfer and native students at Oklahoma State University. The statistical technique used for testing the raw data were the *t*-test, chi square, and the analysis of variance. The eleven major hypotheses that were tested are listed in Chapter I, pages 10-11.

The sample consisted of 90 matched pairs of natives and transfers. The pairs were matched as to age, sex, ACT composite score, major area of study, and the occupational status of the student's father in order to make the analysis of the two groups more comparable and meaningful. The subjects had achieved junior classification, a minimum of 60 hours. They had either graduated, were continuing their education, had dropped out, or had been suspended by University officials as of October 21, 1966.

Conclusions of the Study

The findings of the study appeared to justify the following conclusions:

1. Junior college transfer students' cumulative two-year grade point average is significantly higher than the natives' who took their first two years at Oklahoma State University. These findings concur with earlier studies--that junior college grades are higher than the lower division grades of students at four-year colleges.

2. Junior college students experience some drop in grade point average the first semester after transferring. The greatest decrease occurred after the sixth semester. The reason may be that the first semester of the junior year may be easier than otherwise expected because some transfers may be enrolled in courses to meet university requirements. Another reason may be that the marginal students who had been placed on probation after one semester are suspended or dropped when they failed to meet the required grade point average the next semester.

3. The male transfer students had a significantly higher grade point average than did the natives at the end of two years, the fifth, and eighth semesters. These findings parallel the grade point significance of the totle sample except for the seventh semester. Because the sample of 180 was composed of 148 males, it is reasonable to expect that the weighted male results would approximate those of the total sample.

4. Both transfer and native students in the various majors appeared to have about the same success in academic grade point performance. In the area of language and the fine arts, the transfers' two-year cumulative grade point was significantly higher than the natives'. An inference may be made that it appears that higher grades are easier to achieve in the junior colleges as compared to the University in this area of study. Also there was a significant difference for semester seven in the area of the social sciences.

5. There are relatively few significant differences in grade point averages between the transfers and natives when the socio-economic variable, the occupation of the student's father, is controlled. Only for clerical and sales fields for the fifth semester and for the occupations of manager, farmer, or proprietor for the seventh and eighth semesters was there any statistical difference noted. Hence, it is felt that this non-academic characteristic was found to have little relationship to academic grade performance in the University.

6. There is a significance in the number of transfers who persisted after semesters seven and eight. This attrition on the part of the transfers seems to follow the pattern of the grade point averages received by this group. The students who performed poor

academically may have been placed on probation at the end of the fifth semester and because of continued scholastic difficulty the sixth semester, may have been dropped or been suspended by the University. This action would be reflected in the attrition of students for semesters seven and eight and be a basis for the significance in persistency.

7. The persistency of male students was also significant for semesters seven and eight. It would seem appropriate to conjecture that this significance stems from the same contributing factors that resulted in the grade point significant difference for the seventh semester when the total sample of 148 males and 32 females were employed--scholastic difficulty causing the student to drop or to be suspended from the University beginning with the seventh semester.

8. Persistency seems to be affected in a limited way by the choice of major. This is indicated by the significant differences in the area of biological sciences for the eighth semester and social sciences for the seventh. A poor science background in junior college may be the cause for the lack of persistency of the transfers in the biological sciences. The poor scholastic performance in the social sciences is no doubt a contributing factor to the attrition of the transfer student after the sixth semester. The transfers who majored in social sciences entered Oklahoma State University with a 2.28 grade point, the lowest of the four major areas of study. The transfers' grade point dropped for two semesters after transferring.

9. The findings tend to support the belief that there is little difference in persistency between transfers and natives whose fathers are in the same occupational classification. There was but one instance when there was a significant difference between the two groups

as to the number who persist. This was the eighth semester for students whose fathers were classified as professionals.

10. There is no significant difference between the transfers and natives as to the number who graduated in four years ("on time") and those who graduated with a degree. Previous studies have indicated that junior college transfer students often require more time than natives to complete their degree programs. Other studies have shown that a significantly larger number of natives graduate as compared to the transfers.

11. There is no significant difference in the grade point average of students who transferred from four junior colleges in the state: Cameron State Agricultural College, Eastern Oklahoma A & M College, Northeastern Oklahoma A & M College, and Northern Oklahoma College. No significance was observed at the end of two years, succeeding semesters, and at graduation.

12. There is no significant difference in the number who persisted and graduated of students who transferred from four junior colleges in the state: Cameron State Agricultural College, Eastern Oklahoma A & M College, Northeastern Oklahoma A & M College, and Northern Oklahoma College. No significance was observed by semesters and at graduation.

Implications

Certain inferences can be made with reasonable confidence from the results of the study:

1. The junior college transfers' grade point average is significantly higher than the natives at the end of two years. Because the

transfers and natives were matched on the basis of five variables: age, sex, ACT composite score, major area of study, and occupational classification of the student's father, the implication is that the junior colleges "grade higher" than the lower division of Oklahoma State University.

2. The persistency to degree attainment of the transfer students to Oklahoma State University does not differ significantly from the native students. This implies that when compared to the University, the junior colleges in the state are performing their preparatory and transfer function quite well.

3. Students who transfer from a junior college may expect a drop in grade point after transfer. After a decline they may expect an increase. In the College of Arts and Sciences, despite the decline in grade point, the transfer student can expect to maintain a superiority over natives in grade point average after transfer to Oklahoma State because of the great differential of his two-year cumulative average at time of entry.

4. Students may attend any of the four junior colleges--Cameron State Agricultural College, Eastern Oklahoma A & M, Northeastern Oklahoma A & M, and Northern Oklahoma College--and may expect to do equally well in academic performance and the persistency to graduate after transferring to Oklahoma State University.

5. It seems that the grade point average earned in junior colleges is a most important factor in the transfers' academic performance and persistency to graduate. Moreover, there may be other factors operating to affect grade point average and persistency: loss of interest, lack of financial support, and marital status. However,

differences in success between the transfers and natives resulting from these non-academic factors was not discernible in this study.

Recommendations

It is readily apparent that recommendations relative to a research study are based upon experience and observations which were encountered during the course of completing a given procedure, technique, or analysis. It is upon this basis, that the following recommendations are considered by the writer to be most appropos.

It was indicated in Chapter II that many of the junior college transfers could not be included in the sample because they transferred to Oklahoma State University with less than the required minimum of sixty hours of credit. As the number of these individuals appear to be quite large, research on these particular students should be conducted.

Additional research is needed on junior college transfers into colleges at Oklahoma State University other than the College of Arts and Sciences, e.g., Engineering, Education, and Business.

Table XXV in Chapter IV has indicated by inspection that the majority of both natives and transfers take longer than the normal eight semesters to graduate. Since this appears to be the situation, it is recommended that this be investigated and the cause determined.

Because of the nature of the research design and hence the small number of subjects in each area of study, it is recommended that additional research be accomplished for transfers who major in specific curriculum areas of the Arts and Sciences at Oklahoma State University.

The study also revealed that the transfer students earned their lowest grades during the junior year after transfer. Therefore, it is recommended that the University consider having a specific orientation for transfer students.

There is a need for research on personal problems and other non-academic factors encountered by the transfer student in adjusting to the new environment at the University.

On the University level, it is recommended that the faculty adviser for transfer students be those who are familiar with the junior colleges and their programs.

Likewise, it is recommended that the junior college provide the potential transfer with counseling services so that he may become aware of the opportunities available to him after transfer in order that he be assisted in making decisions relative to choice of college and choice of major.

Since the college population is constantly changing as well as four-year college and university admission requirements, it is recommended that each junior college and university do follow-up studies on transfer students. This would give normative information about the characteristics of the junior college students which might be useful in predicting the success of students after transfer to a four-year institution.

It is recommended that a committee, composed of representatives of two-year and four-year institutions in Oklahoma, be formed that would concern itself with the solving of problems of articulation and coordination between junior and senior colleges.

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APPENDIX

APPENDIX

Key to Column Code: 1) Student number. 2) Sex: Male 0; Female 1. 3) Year classified as Junior. 4) Transfer (T) or Native (N) student. 5) Junior College from which transferred: 1-Altus Junior College, 2-Bacone College, 3-Cameron State Agricultural College, 4-Connors State Agricultural College, 5-Eastern Oklahoma A & M College, 6-Murray State Agricultural College, 7-Northeastern Oklahoma A & M College, 8-Northern Oklahoma College, 9-Oklahoma Military Academy, 10-St. Gregory's Junior College. 6) ACT composite score. 7) Age. 8) Major Area of Study: 1-Biological Sciences; 2-Language, Music, and Fine Arts; 3-Physical Sciences; 4-Social Sciences. 9) Two-year cumulative Grade Point Average. 10) Fifth semester cumulative GPA. 11) Sixth semester cumulative GPA. 12) Seventh semester cumulative GPA. 13) Eighth semester cumulative GPA. 14) Graduated in four years? Yes 1; No 0. 15) Still in School? Yes 1; No 0. 16) Graduated with a degree? Yes 1; No 0. 17) Date of graduation. 18) Occupational classification of the student's father: 1-Professional; 2-Proprietor, Manager, Farmer; 3-Clerical and Sales; 4-Skilled and Semi-skilled workers, Foreman; 5-Unskilled worker.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	0	62	T	6	27	19	3	2.6	2.319	2.195			0	0	0		4
2	0	62	T	5	26	20	3	2.7	2.791				0	0	0		2
3	1	62	T	8	26	20	2	3.4	3.375	3.202			0	0	0		5
4	1	62	T	3	26	19	3	3.3	3.253	3.153	3.194	3.218	1	0	1	5-64	3
5	1	62	T	7	24	19	4	2.9	2.865	2.666	2.603	2.542	0	0	1	8-65	2
6	0	62	T	3	24	20	4	3.2	3.143	2.940	2.848	2.798	0	0	1	1-65	3
7	0	62	T	7	24	20	4	2.6	2.678	2.568	2.557	2.539	0	0	1	8-64	2
8	0	62	T	3	23	19	1	3.8	3.725	3.742	3.754	3.742	1	0	1	5-64	3
9	0	62	T	7	22	19	3	3.9	3.927	3.939	3.829	3.724	1	0	1	5-64	5
10	0	62	T	7	22	19	1	2.8	2.597	2.598	2.449	2.518	0	0	1	1-65	1
11	0	62	T	8	22	20	4	2.4	2.458	2.261	2.115	2.075	0	0	0		2
12	0	62	T	8	22	19	1	3.3	3.188	3.048	3.008	2.962	1	0	0	5-64	2
13	0	62	T	3	21	20	3	3.1	3.141	3.129	3.105	3.181	0	0	1	8-64	3

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
14	0	62	T	3	21	19	1	2.1	2.171				0	0	0		4
15	0	62	T	7	21	20	1	3.0	3.000	2.990	2.875	2.840	0	0	1	5-65	5
16	0	62	T	7	21	19	1	2.0	2.514	2.468	2.475		0	0	0		2
17	0	62	T	7	20	19	3	2.9	2.892	2.840	2.830	2.874	0	0	1	8-64	2
18	0	62	T	7	18	20	4	2.6	2.569	2.325	2.296	2.312	0	0	1	1-65	4
19	0	62	T	2	17	20	2	2.5	2.443	2.437	2.439		0	0	0		3
20	0	62	T	3	17	20	1	2.4	2.263	2.184	1.973		0	0	0		1
21	0	62	T	7	17	19	4	2.7	2.820	2.823	2.865	2.939	1	0	1	5-64	4
22	0	62	T	3	16	20	2	2.8	2.876	2.907	2.912	2.948	0	0	1	1-65	2
23	1	62	T	8	16	19	1	2.5	2.448				0	0	0		5
24	1	62	T	3	15	19	2	3.4	2.337	3.250	3.264	3.281	0	0	1	5-65	2
25	0	62	T	4	15	19	1	2.0	1.805	1.734			0	0	0		2
26	0	62	T	6	14	19	4	2.0	1.933				0	0	0		4
27	0	62	T	5	12	20	3	2.9	2.690	1.130			0	0	0		2
28	0	63	T	3	29	20	3	3.1	2.972				0	0	0		1
29	0	63	T	3	28	20	3	3.5	3.600	3.504	3.413	3.335	0	0	1	8-65	3
30	0	63	T	5	27	19	3	3.1	3.000	2.923	2.921	2.827	1	0	1	5-65	4
31	0	63	T	9	27	20	3	3.6	3.493	3.316	3.095	3.061	1	0	1	5-65	5
32	0	63	T	8	26	19	3	3.3	3.142	2.959	2.842	2.684	0	1	0		5
33	0	63	T	7	26	20	4	3.4	3.358	3.222	3.000	2.866	0	0	1	5-66	2
34	0	63	T	9	25	19	3	3.6	3.452	3.247	3.042	2.992	1	0	1	5-65	5
35	0	63	T	7	24	20	4	2.1	2.093	2.019			0	0	0	5-65	5
36	0	63	T	8	24	19	4	4.0	3.759	3.736	3.685	3.694	0	0	1	8-65	3
37	0	63	T	8	24	20	1	3.0	3.037	3.037	3.111	3.106	0	0	0		2
38	0	63	T	3	23	19	1	2.8	2.797	2.863	2.814		0	0	0		4
39	1	63	T	8	23	20	1	2.5	2.560	2.488	2.574	2.589	0	0	0		2
40	0	63	T	7	23	20	1	2.2	2.067	1.866	2.139	2.243	0	1	0		4
41	0	63	T	5	22	19	3	2.9	2.916	2.794	2.730	2.721	0	0	1	8-65	5
42	1	63	T	7	22	21	4	3.1	2.986	2.989			0	0	0		4
43	0	63	T	7	22	20	1	2.3	2.358	2.413	2.398	2.341	1	0	1	5-65	2
44	0	63	T	7	22	20	1	2.5	2.392	2.367	2.354	2.408	0	0	1	5-66	1
45	0	63	T	7	22	20	4	3.6	3.635	3.693	3.663	3.592	1	0	1	5-65	5

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
46	0	63	T	8	22	20	1	2.3	2.506	2.351	2.472	2.573	0	0	1	5-66	1
47	1	63	T	5	21	20	2	3.6	3.488	3.431	3.405	3.414	0	0	0		2
48	0	63	T	4	20	20	1	2.8	2.804	2.565	2.468	2.500	1	0	1	5-65	2
49	0	63	T	5	20	19	4	2.6	2.589	2.510	2.200	2.131	0	0	1	8-65	2
50	0	63	T	5	20	19	3	2.3	2.323	2.392	2.327	2.555	0	0	1	5-66	3
51	0	63	T	6	20	20	4	2.4	2.333	2.207	2.157	2.176	0	0	1	8-65	1
52	1	63	T	7	20	20	4	3.7	3.459	3.428	3.597	3.553	1	0	1	5-65	5
53	0	63	T	7	20	19	4	1.8	1.527				0	0	0		4
54	1	63	T	7	20	20	4	2.5	2.473	2.347	2.416	2.440	1	0	1	5-65	2
55	0	63	T	8	20	20	4	1.7	1.600	1.333			0	0	0		1
56	0	63	T	1	19	19	1	2.0	1.893	1.666			0	0	0		1
57	0	63	T	4	19	20	1	3.5	3.416	3.255	3.149		0	0	1	5-66	1
58	0	63	T	5	19	20	1	2.8	2.829	2.683	2.692	2.651	0	0	1	8-65	3
59	0	63	T	9	17	20	4	1.9	1.756	1.699	2.000	2.000	0	1	0		5
60	0	63	T	5	16	19	1	3.1	3.086	3.000	3.026	2.984	1	0	1	5-65	2
61	0	63	T	6	15	20	1	3.1	2.817	2.710	2.713	2.717	1	0	1	5-65	2
62	0	63	T	3	14	21	4	1.8	1.692	1.294			0	0	0		4
63	1	63	T	5	14	20	2	3.2	3.097	3.065	2.920	2.864	1	0	1	5-65	3
64	0	64	T	8	30	20	3	3.6	3.654	3.670	3.577	3.481	1	0	1	5-66	5
65	0	64	T	8	27	20	3	2.7	2.809	2.653	2.453	2.525	0	0	1	7-66	4
66	1	64	T	8	26	20	2	3.0	2.975	2.840	2.684	2.778	1	0	1	5-66	5
67	1	64	T	7	25	20	1	3.3	3.280	3.183	3.175	3.113	0	1	0		2
68	1	64	T	7	25	20	2	2.7	2.525	2.319	2.275		0	0	0		2
69	0	64	T	3	25	19	2	2.6	2.662	2.677	2.742	2.775	0	1	0		1
70	0	64	T	1	24	20	4	3.5	3.512				0	0	0		2
71	0	64	T	8	23	19	4	1.9	1.750	1.448			0	0	0		2
72	0	64	T	3	22	20	4	3.2	2.987	2.927	2.857	2.874	0	1	0		2
73	0	64	T	7	22	20	2	2.0	1.894	1.928	1.867	1.773	0	0	0		4
74	0	64	T	3	22	20	4	3.7	3.734	3.637	3.717	3.652	1	0	1	5-66	4
75	0	64	T	7	22	20	3	2.8	2.732	2.650	2.605	2.585	1	0	1	5-66	5
76	0	64	T	8	22	20	4	2.4	2.379	2.421	2.392	2.420	1	0	1	5-66	1
77	0	64	T	3	20	21	4	2.0	1.981	1.928			0	0	0		1

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
78	1	64	T	7	20	20	2	3.2	3.181	3.161	3.009	3.008	0	1	0		2
79	0	64	T	10	20	21	2	3.1	2.800	2.737			0	0	0		1
80	0	64	T	7	20	19	4	3.5	3.517	3.534	3.491	3.525	0	0	1	7-66	5
81	0	64	T	7	19	20	4	2.1	1.775	1.717	1.757	1.737	0	1	0		1
82	0	64	T	7	19	20	1	3.0	3.000	2.961	2.910	2.935	1	0	1	5-66	1
83	0	64	T	7	18	20	2	2.4	2.333	2.223	2.262	2.252	0	0	1	7-66	4
84	0	64	T	9	18	21	1	2.0	1.761	1.978	2.084		0	1	0		5
85	0	64	T	7	18	20	4	2.0	1.963				0	0	0		5
86	0	64	T	3	16	20	1	2.2	2.197	2.173	2.189	2.282	0	0	1	7-66	3
87	0	64	T	5	16	20	1	2.3	2.312	2.075			0	0	0		2
88	0	64	T	6	16	20	1	3.2	2.963	2.969	2.939	2.869	0	1	0		2
89	0	64	T	7	15	21	4	2.3	2.155				0	0	0		2
90	0	64	T	7	15	19	4	1.6	1.360				0	0	0		2
101	0	62	N		27	19	3	2.7	2.567	2.463	2.473	2.450	0	0	1	8-64	4
102	0	62	N		25	20	3	3.1	3.059	3.078	2.973	2.852	0	0	1	8-65	2
103	1	64	N		26	20	2	2.6	2.402	2.351	2.308	2.252	1	0	1	5-66	5
104	1	62	N		25	20	3	3.7	3.590	3.518	3.401	3.379	1	0	1	5-64	3
105	1	64	N		23	19	4	2.5	2.437	2.463	2.443		0	0	0		2
106	0	63	N		25	20	4	2.1	2.240	2.357	2.470	2.507	1	0	1	5-65	3
107	0	62	N		23	20	4	2.2	2.136				0	0	0		2
108	0	62	N		24	19	1	2.7	2.714	2.606	2.622	2.648	1	0	1	5-64	3
109	0	63	N		22	20	3	3.1	2.918	2.815	2.764	2.755	0	0	1	8-65	5
110	0	62	N		21	19	1	2.4	2.093	1.909	1.936	2.063	0	0	1	1-65	1
111	0	63	N		21	20	4	2.2	2.175	1.941	1.882	2.017	0	1	0		2
112	0	63	N		21	20	1	2.2	2.225	2.303	2.224	2.289	0	1	0		2
113	0	62	N		21	19	3	2.4	2.338				0	0	0		3
114	0	62	N		20	20	1	2.2	2.092	2.123	2.072	2.000	0	0	1	1-65	4
115	0	62	N		20	21	1	3.0	3.098	3.064	3.026	2.946	0	0	1	8-64	5
116	0	64	N		20	20	1	3.1	3.109	3.102	3.185	3.130	1	0	1	5-66	2
117	0	62	N		20	19	3	2.3	2.179	2.153	2.190	2.272	0	0	1	8-65	2
118	0	62	N		17	20	4	1.5	1.397	1.494	1.707	1.852	0	1	0		4
119	0	62	N		18	20	2	2.0	1.931	1.988	2.040	2.149	0	0	1	1-65	3

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
120	0	62	N		18	20	1	2.6	2.647	2.659	2.562	2.563	1	0	1	5-64	1
121	0	62	N		16	20	4	1.9	1.797	1.631	1.605	1.622	0	0	0		4
122	0	62	N		17	20	2	2.1	2.109	2.043	1.970		0	0	0		2
123	1	62	N		16	19	1	2.4	2.250				0	0	0		5
124	1	62	N		15	19	2	2.4	2.479				0	0	0		2
125	0	62	N		14	19	1	2.3	2.323	2.447	2.361	2.354	0	0	1	8-65	2
126	0	63	N		14	20	4	1.7	1.504	1.463	1.471	1.446	0	0	0		4
127	0	63	N		13	20	3	1.5	1.644	1.797	1.854	1.923	0	1	0		2
128	0	63	N		28	20	3	3.2	3.125	3.048	3.114	3.153	0	0	1	8-65	1
129	0	62	N		27	20	3	2.6	2.623	2.360	2.319	2.064	0	0	0		3
130	0	63	N		28	20	3	3.5	3.395	3.422	3.309	3.304	0	0	1	8-65	4
131	0	63	N		27	20	3	3.3	3.240	3.282	3.298	3.353	1	0	1	5-65	5
132	0	63	N		26	20	3	3.6	3.494	3.518	3.491	3.375	0	0	1	8-65	5
133	1	63	N		25	20	4	3.0	2.942	2.927	2.814	2.691	1	0	1	5-65	2
134	0	62	N		26	20	3	2.9	3.074	2.916	2.972	3.114	1	0	1	5-64	5
135	0	63	N		24	20	4	3.5	3.469	3.346	3.398	3.370	0	0	1	8-65	5
136	0	63	N		24	20	4	2.4	2.388	2.304	2.421	2.461	0	0	1	8-65	3
137	0	63	N		25	20	1	3.1	3.011	2.979	2.911	2.847	0	0	1	8-65	2
138	0	62	N		23	19	1	2.5	2.564	2.655	2.675	2.742	1	0	1	5-64	4
139	1	63	N		23	20	1	2.4	2.462	2.505	2.609	2.704	1	0	1	5-65	2
140	0	62	N		23	21	1	2.4	2.641	2.773	2.889	2.860	1	0	1	5-64	4
141	0	64	N		22	20	3	2.6	2.494	2.442			0	0	0		5
142	1	64	N		23	20	4	2.3	2.338	2.303	2.298	2.376	1	0	1	5-64	4
143	0	63	N		22	20	1	1.9	1.859	1.764	1.752	1.679	0	1	0		2
144	0	62	N		23	19	1	2.8	2.707	2.753	2.660	2.609	1	0	1	5-64	1
145	0	63	N		22	20	4	2.3	2.259	2.416	2.467	2.495	0	0	1	8-65	5
146	0	64	N		23	19	1	2.5	2.384	2.322	2.423	2.357	0	1	0		1
147	1	63	N		21	20	2	3.0	3.133	3.172	3.133	3.141	1	0	1	5-65	2
148	0	63	N		20	20	1	1.9	1.987	2.091	2.122	2.155	0	0	1	8-65	2
149	0	62	N		21	21	4	2.6	2.617	2.704	2.769	2.790	0	0	1	1-65	2
150	0	63	N		20	20	3	3.0	2.998	3.018	3.080	3.028	1	0	1	5-65	3

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
151	0	63	N		21	20	4	2.9	2.967	2.933	2.910	2.952	0	0	1	8-65	1
152	1	63	N		21	19	4	2.4	2.392	2.213	2.215	2.224	0	0	1	8-65	5
153	0	64	N		19	19	4	1.5	1.728	1.786			0	1	0		4
154	1	64	N		20	20	4	2.2	2.237	2.243	2.202	2.242	0	0	1	7-66	2
155	0	63	N		19	20	4	1.8	1.905	1.842	1.865	1.857	0	1	0		1
156	0	62	N		19	20	1	2.2	2.223	2.268	2.353	2.429	1	0	1	5-64	1
157	0	62	N		20	20	1	2.7	2.750	2.792	2.923	2.870	0	0	1	5-65	1
158	0	63	N		20	20	1	2.7	2.460	2.537	2.522	2.522	0	0	0		3
159	0	63	N		16	20	4	2.0	2.105	2.153	2.171	2.208	0	0	1	8-65	5
160	0	63	N		17	20	1	3.3	3.261	3.291	3.295	3.314	1	0	1	5-65	2
161	0	64	N		14	21	1	1.8	1.973	1.957	1.945	1.912	0	1	0		2
162	0	63	N		14	20	4	1.6	1.865	1.951	2.000		0	1	0		4
163	1	63	N		14	20	2	3.1	3.140	3.144			0	1	0		3
164	0	64	N		29	20	3	3.4	3.494	3.465	3.415	3.431	0	0	1	7-66	5
165	0	63	N		28	19	3	3.6	3.423	3.390	3.339	3.255	1	0	1	5-65	4
166	1	64	N		27	19	2	3.3	3.223	3.183			0	0	0		5
167	1	62	N		26	19	1	2.4	2.614	2.571	2.642	2.777	1	0	1	5-64	2
168	1	64	N		25	20	2	2.5	2.565	2.393	2.781	2.880	0	0	1	8-64	2
169	0	64	N		25	20	2	3.0	2.961	3.021	3.101	3.168	0	0	1	7-66	1
170	0	64	N		23	19	4	2.0	2.111	2.107			0	0	0		2
171	0	63	N		23	19	4	3.7	3.658	3.680	3.750	3.734	1	0	1	5-65	2
172	0	62	N		23	20	4	2.2	2.326	2.210	2.396	2.371	0	0	1	1-65	2
173	0	64	N		22	21	2	2.3	2.367	2.480	2.487		0	0	0		4
174	0	64	N		23	19	4	1.3	1.196				0	0	0		4
175	0	64	N		22	20	3	2.0	2.139	2.076	2.028	2.057	0	1	0		5
176	0	64	N		23	20	4	2.4	2.400	2.500	2.521		0	0	0		1
177	0	63	N		20	20	4	3.2	3.187	3.189	3.155	3.183	1	0	1	5-65	1
178	1	62	N		20	20	2	3.2	3.064	3.106	3.117	3.204	1	0	1	5-64	2
179	0	64	N		21	20	2	1.9	2.011	2.028	2.000	2.000	0	0	1	7-66	1
180	0	63	N		19	19	4	1.9	2.058	2.111	2.000	1.977	1	0	1	8-65	5
181	0	64	N		18	20	4	2.5	2.344	2.470	2.487	2.512	1	0	1	5-66	1

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
182	0	63	N		19	20	1	2.4	2.458				0	0	0		1
183	0	63	N		19	20	2	1.6	1.867	1.947	2.027	1.953	0	0	0		4
184	0	62	N		18	20	1	2.3	2.252	2.287	2.216	2.262	1	0	1	5-64	5
185	0	64	N		19	20	4	2.7	2.721	2.808	2.754	2.695	0	0	0		5
186	0	64	N		17	20	1	2.3	2.304	2.329	2.504	2.504	0	1	0		3
187	0	62	N		16	19	1	2.1	2.118	2.213	2.235	2.325	0	0	1	8-64	2
188	0	63	N		17	20	1	2.0	2.111	2.187	2.209	2.235	0	0	0		2
189	0	62	N		16	20	4	2.1	2.135	2.145	2.126	2.111	0	0	0		2
190	0	64	N		16	20	4	2.2	1.820	1.637	1.650	1.719	0	0	1	7-66	2

VITA

Victor Harold Hoemann

Candidate for the Degree of

Doctor of Education

Thesis: A COMPARATIVE STUDY OF THE ACADEMIC ACHIEVEMENT AND PERSISTENCE TO GRADUATE OF JUNIOR COLLEGE TRANSFER STUDENTS AND NATIVE STUDENTS IN THE COLLEGE OF ARTS AND SCIENCES AT OKLAHOMA STATE UNIVERSITY

Major Field: Student Personnel and Guidance

Biographical:

Personal Data: Born near Spring, Texas, August 20, 1923, the son of Otto Henry and Sophie Baack Hoemann.

Education: Attended grade school and high school in Battle Creek, Iowa, graduating from high school in 1941; received a Bachelor of Science degree from the University of Nebraska in 1945, with a major in Business Administration; received the Bachelor of Arts degree from Iowa State Teachers College in 1947, with a major in Social Sciences; received the Master of Arts degree from the University of Missouri in 1949, with a major in economics. Attended the University of Illinois, summer 1958; Washington University, summer 1960. Awarded National Defense Education Act Guidance and Counseling grants to Kansas State College at Pittsburg, summer 1960, and to Western Illinois University, the summer of 1962. Attended St. Louis University, St. Louis, part-time 1964-65. Attended Oklahoma State University, Stillwater, summers 1964, 1965, and 1966. Enrolled in residence at Oklahoma State, Spring and Fall semesters, 1966. Completed the requirements for the Doctor of Education degree in May, 1967.

Professional experience: Employed as personnel clerk for Armour and Company, Omaha, Nebraska, June to December, 1945; served as the Assistant to the President of the A. C. L. Haase Company, St. Louis, Missouri 1947-48; worked as Secretary to the Sales Manager, Tension Envelope Company, St. Louis, 1949-50; Employed as Chief Clerk to the Reseller Sales Manager, Standard Oil Company, Omaha, Nebraska, 1950-52. Served as instructor of the social sciences and boys' baseball and basketball coach in the Graettinger, Iowa, high school,

1946-47; employed by the Ferguson-Florissant School District, Ferguson, Missouri, in 1952. Assignments have included social studies teacher, business education instructor, department chairman, guidance counselor, varsity coach of basketball and tennis, teacher in the Summer School, instructor in the Adult Evening School, and supervisor of the Manpower Development and Training Act program. On sabbatical leave--Spring and Fall semesters, 1966. Served as graduate assistant in the NDEA Guidance and Counseling Institute at Oklahoma State University, summers 1965 and 1966. Taught courses in the Education Department, Oklahoma State University, Spring and Fall semesters, 1966.

Societies and organizations: Alpha Pi Zeta, social science; Delta Pi Epsilon, business education; Phi Delta Kappa, education; "N" Club, athletic lettermen; American School Counselors Association; American College Personnel Association; National Education Association; Missouri State Teachers Association; Suburban Teachers Association; Ferguson-Florissant Community Teachers Association; and the Lutheran Academy for Scholarship.