An Investigation Of Student Success Between Associate Of Arts And Non Associate Of Arts Transfer Students

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AN INVESTIGATION OF STUDENT SUCCESS
BETWEEN ASSOCIATE OF ARTS AND NON ASSOCIATE OF ARTS
TRANSFER STUDENTS

by

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ABSTRACT

This dissertation investigates the possible association between admission with an Associate of Arts (AA) degree or no-AA degree, gender, and ethnicity with graduation GPA, probation, and persistence of community college transfer students admitted to the University of Central Florida in the 2001-2002 academic year (N = 5283).

The literature review found that the majority of studies related to transfer student success compared transfer students to native university students. Little evidence of an association between success rates of transfer students as compared to native university students was indicated in the literature. The literature also did not indicate an association between gender and success rates or ethnic group and success rates.

The results of this study suggest that admission degree, gender and ethnicity all had little to no impact on the success rates of the transfer students in the sample. The data for the students in the AA admission group indicated that receipt of an AA degree is related to student persistence. However, the test results indicated that this relationship was very weak.

Due to the ever-increasing numbers of transfer students in this country, this study can be an informational tool for administrators at community colleges and universities in relation to transfer student success.
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CHAPTER 1
INTRODUCTION

Education has been important to American society since the early days of this country. In 1776, Thomas Jefferson discussed the importance of citizens becoming informed and educated to make this new democratic country function effectively (They said it, 2004). Today education is more important than ever to an individual’s success and to society as a whole.

The attainment of a bachelor’s degree has proven to have significant positive effects on an individual’s future goals, influencing not only students’ cognitive abilities, but also their moral behavior and choice of career. In How College Affects Students: Findings and Insights from Twenty Years of Research (1991), Pascarella and Terenzini examined previous research to determine the effect of college attendance and completion. Their first observation was that during college years students make statistically significant gains on a number of facets of general cognitive capabilities and skills (Pascarella & Terenzini, 1991, p.155).

These cognitive competencies and skills represent the general intellectual outcomes of college that permit individuals to process and utilize new information; communicate effectively; reason objectively and draw objective conclusions from various types of data; evaluate new ideas and techniques efficiently; become more objective about beliefs, attitudes, and values; evaluate arguments and claims critically; and make reasonable decisions in the face of imperfect information. These and related general cognitive skills are a particularly important resource for the individual in a society and world where factual knowledge is becoming obsolete at an accelerated rate (Rosen, 1975 as cited in Pascarella & Terenzini, 1991, p. 114-115).
Pascarella and Terenzini (1991) also concluded that college has an indirect effect on one’s moral behavior and/or action. The authors proposed that college fosters the increased use of principled reasoning in judging moral issues, which increases a number of principled behaviors such as social activism, keeping contractual promises, and altruism.

One of the most important long-term impacts of a college degree is its influence on an individual’s career. Graduating from college plays a key role in the career an individual chooses. A bachelor’s degree is required for many technical and managerial positions and for acceptance into professional schools such as law and medicine. The economic benefits of graduating from college and choosing a lucrative career have a significant long-term effect on a person’s life. “A bachelor’s degree provides somewhere between a 20 and 40 percent advantage in earnings over a high school diploma” (Pascarella & Terenzini, 1991, p.529).

Individuals should be afforded every opportunity to complete a college degree. For many students, this means starting their education at a community college, then transferring to a 4-year college or university. As the number of transfer students grows, it is important to examine the factors that may influence student progression toward a bachelor’s degree. These factors include a student’s grade point average (GPA) upon entering an upper level institution, the highest degree held upon admission, and their gender and ethnic group. This study examines these factors and provides information that will enable higher education administrators to be more effective in helping students achieve their educational goals.
Students transferring to 4-year institutions of higher education constitute a large percentage of currently enrolled juniors and seniors. In the fall 2002 semester, public universities in the state of Florida enrolled 19,267 new transfer students. Of these new transfers, 13,139 (68.2%) came from Florida community colleges, while only 6,128 (31.8%) were admitted from other educational institutions (Florida Department of Education, 2004).

During the 2001-2002 academic year, 4,197 accredited institutions nationwide offered Associate of Arts (AA) degrees. Of these institutions, 2,364 (56.33%) were 4-year colleges or universities and 1,833 (43.67%) were 2-year colleges (National Center for Education Statistics, 2002). Some states, such as Florida and California, offer articulation agreements to alleviate problems normally associated with transferring between institutions.

Students pursuing their bachelor’s degree often attend two or more institutions before their degree is complete. This pattern occurs for several reasons. First, many students transfer because they or their families relocate. Additionally, there are many community colleges and public universities with articulation agreements, so students can transfer without losing college credit. Finally, students have a wide-range of options. “Students can choose from public, private, non-denominational, private church-affiliated or proprietary two- or four-year colleges. “If they don’t like one type of institution, they decide to transfer to another” (Townsend & Ignash, 2000, p. 3).

The Beginning Postsecondary Students Longitudinal Study (as cited in Hoachlander, Sikora, & Horn, 2003) was conducted from 1995 to 2001 to provide data
on degree attainment, persistence, and transfer rates over a 6-year period. The researchers found 65.3% of study participants stated they intended to transfer to a 4-year institution, yet only 38.5% anticipated receiving an AA degree. The remaining 26.8% of potential transfer students did not feel acquisition of an AA degree was necessary prior to transferring. At the end of the 6-year study, approximately 23% of the transfer students had obtained a bachelor’s degree.

Statement of the Problem

The number of transfer students across the country continues to grow. The Chronicle of Higher Education (2004) published community college statistics for the fall of 2001 that stated 5,996,701 students were enrolled at public 2-year institutions nationwide and 253,878 students were enrolled at private 2-year institutions. Between 25% and 52%, (these estimates vary by definition of “transfer”) of these students will transfer to a 4-year institution (Bradburn & Hurst, 2001). The success rates of these students are often compared to the success rates of first time in college students. However, little research has been conducted comparing AA degree transfer students to non-AA degree transfer students. This study compared students who transfer with an AA degree to students who transfer without an AA degree to determine if there is a difference in the probation rates, graduation GPA, and graduation rates. Success rates for AA degree and non-AA degree transfer students were examined by gender and ethnic group to determine if these variables had any affect on the success rate.
Hypotheses

This study examined success rates of transfer students with an AA degree and transfer students without an AA degree. The following hypotheses will be examined:

Hypothesis 1: There is no statistically significant difference in overall graduation GPA between transfer degree status (AA or No AA).

Hypothesis 2: There is no statistically significant difference in the overall graduation GPA between transfer degree status (AA or No AA) when gender is considered.

Hypothesis 3: There is no statistically significant difference in the overall graduation GPA between transfer degree status (AA or No AA) when ethnicity is considered.

Hypothesis 4: There is no statistically significant difference between transfer degree status (AA or no-AA) and the likelihood a student will be placed on academic probation, exclusion, or disqualification.

Hypothesis 5: There is no statistically significant difference between transfer degree status (AA or no-AA) and the likelihood students will be placed on academic probation, exclusion, or disqualification as a determinant of the student’s gender.

Hypothesis 6: There is no statistically significant difference between transfer degree status (AA or no-AA) and the likelihood a student will be placed on academic probation, exclusion or disqualification as a determinant of the student’s ethnicity.
Hypothesis 7: There is no statistically significant difference between student admission degree (AA/no AA) and student persistence.

Hypothesis 8: There is no statistically significant difference between student admission degree (AA/no AA) and student persistence as a determinant of the student’s gender.

Hypothesis 9: There is no statistically significant difference between student admission degree (AA/no AA) and student persistence as a determinant of the student’s ethnicity.

Definitions

The following are definitions of terms used in this study:

Academic Probation: The University of Central Florida (UCF) defines academic probation as: “Action taken when a student’s UCF cumulative GPA drops below 2.0. Academic probation will continue until the current term and UCF cumulative GPA reach 2.0 or better” (2004-2005 Undergraduate Catalog, 2003, p. 54.).

Continuous enrollment: For the purpose of this study, continuous enrollment is defined: enrollment in classes without an absence of 2 or more consecutive semesters.

Disqualification: UCF defines disqualification: “A student on Academic Probation is disqualified upon failure to achieve a minimum 2.0 GPA during the subsequent term. A student who is disqualified may not enroll at the University for two semesters following disqualification” (2004-2005 Undergraduate Catalog, 2003, p. 54).
Exclusion: UCF defines exclusion: “A student readmitted following disqualification who fails to achieve a minimum 2.0 GPA is excluded from the University. Exclusion is most serious and students are not eligible for readmission after exclusion” (2004-2005 Undergraduate Catalog, 2003, p. 54).

Grade Forgiveness: When a student repeats a course to earn a higher grade they are eligible to apply for grade forgiveness. The grade received upon completion of the second attempt will be factored into the student’s GPA in place of the original grade. However, both attempts will be recorded on the student’s official transcript.

Student Persistence: For the purpose of this study, persistence is defined: graduated or enrolled in a bachelor’s degree program as of the summer 2004 semester.

Student Success: For the purpose of this study, students are determined to be successful if they were graduated or were enrolled in the summer 2004 semester. These students were able to obtain a GPA of at least 2.0 and were not excluded from the university.

Transfer student: For the purpose of this study, a transfer student is defined as any student who transfers into the university from another institution, regardless of the number of credit hours transferred.

Design of the Study

The design of this study is non-experimental and will examine the possible effects of the earning an Associate of Arts degree on the success of transfer students at an upper
level institution. This study was conducted at the University of Central Florida (UCF), a large public research university located in Orlando, Florida.

The population for this study included all transfer students at UCF. Since the university has a large population of transfer students, a smaller sample was needed for this study. To obtain the sample a list of all transfer students admitted to UCF in the 2001-2002 academic year (N = 5408) was obtained from the Office of Institutional Research at the University of Central Florida. Students who were admitted as second bachelor’s degree seeking were excluded from the data leaving a sample size of 5283. The data specified whether the student was admitted with or without an AA degree. The data also included the following information: admission term; gender; ethnic origin; transfer from a Florida community college or another institution; lower level or upper level transfer; highest degree held upon admission; admission college GPA; high school GPA; academic probation, disqualification, or exclusion; graduation term; graduation GPA; and degree received.

Data Analysis

A one-way analysis of variance (ANOVA) was conducted to determine mean differences in graduation GPA based on admission degree (AA/no-AA). A two-way ANOVA was conducted to determine mean difference in graduation GPA based on admission degree (AA/no-AA) and gender. A two-way ANOVA was again conducted to determine mean difference in graduation GPA based on admission degree (AA/no-AA) and ethnicity.
Academic probation rates were analyzed using a Chi-square test of association to determine if there was a statistically significant difference in admission degree and the likelihood a student will be placed on academic probation, exclusion, or disqualification. A separate Chi-square test of association was conducted for males and females to determine if there was a statistically significant difference in admission degree and probation, disqualification, or exclusion rates of each gender. Additionally, separate Chi-square tests of association were conducted for the white, minority, and gender not reported groups to determine if there was a statistically significant difference in admission degree and probation, exclusion, or disqualification rates of each ethnic group.

Rates of student persistence were analyzed using a Chi-square test of association to determine if there is was a statistically significant difference in admission degree and the student persistence. A separate Chi-square test of association was conducted for males and females to determine if there was a statistically significant difference in admission degree and student persistence for each gender. Finally, separate Chi-square tests of association were conducted for the white, minority, and gender not reported groups to determine if there was a statistically significant difference in admission degree and student persistence rates of each ethnic group.

**Significance of the Study**

The results of this study can provide beneficial information for both community colleges and senior institutions. Advisors at both community colleges and four-year institutions could use the findings of this study to assist students in making a more
informed decision about obtaining an AA degree before transferring. Admissions departments at senior institutions could use this information when making decisions about the most qualified applicants.

Limitations of the Study

1. This study was limited by using data from one institution.

2. Data were unavailable from prior years because the University of Central Florida changed student databases during the fall of 2001. Because many students attend school only part-time, it is possible that not everyone in the sample will have had sufficient time to complete their degree.

Delimitations

1. The population used in the current study includes all transfer students admitted to the University of Central Florida during the 2001–2002 academic year, regardless of the number of credit hours completed before transfer.

2. The sample included all transfer students in the population except those students who previously earned a bachelor’s degree.

3. Data for the study were provided by the Office of Institutional Research at the University of Central Florida.

4. To protect the privacy of the students no identifying information was included in the data.
CHAPTER 2
LITERATURE REVIEW

Introduction

According to the American Association of Community Colleges, in 2000, 1173 community colleges in the United States enrolled 10.4 million students (American Association of Community Colleges, n.d.). These students came from diverse backgrounds and socioeconomic levels. However, such educational opportunities were not always available to the lower income members of society. Early in the history of this country, society’s elite were sent to private schools and prepared to attend college. Other members of society were rarely taught the skills needed to obtain a higher education. In the late 1800’s several prominent leaders in higher education began a push to establish 2-year institutions to provide the first 2 years of college coursework (Witt, Wattenbarger, Gollattscheck, & Suppiger, 1994).

In 1901, the first junior college was founded by the President of the University of Chicago (American Association of Community Colleges, n.d.). "William Rainey Harper founded the greatest democratic movement in the history of American higher education. Junior colleges would open college classrooms to millions who otherwise would have been denied a higher education” (Witt et al., 1994, p.16).

Joliet Junior College was established to prepare students to transfer to the University of Chicago. Students would take the first 2 years of their undergraduate
degree at the junior college, then transfer to the university to complete their upper level coursework. According to Harper, this would allow students to “concentrate on advanced studies and research” once they got to the university (Witt et al., 1994, p. 15). The idea spread very quickly and within 20 years, both public and private 2-year colleges were established in many states. The mission of these junior colleges quickly evolved from providing only freshman and sophomore level academic coursework to providing curriculum that fit the needs of the community (Witt et al., 1994).

In 1934, the Federal Emergency Relief Administration allocated funds to establish emergency junior colleges as part of Franklin Roosevelt’s New Deal legislation. Michigan had the largest emergency college program, which included 100 colleges supervised by state universities. These emergency colleges were divided into the groups: “freshman colleges, for the larger number of schools that offered only one year of coursework, and community colleges for those that offered two years. This is the first known use of the term community college” (Witt et. al., 1994, p.97-98).

In the 1940s, the President’s Commission on Higher Education (the Truman Commission) published a report that popularized the term “community college”. Soon after the report was published, Illinois changed the name of several 2-year colleges from junior to community, and by the end of the 1960s, most other states had followed their lead. The term community college better suited the institutions because their mission was being molded by the needs of the community (Witt et al., 1994).

Although today’s community colleges have a broad mission that includes vocational training and serving as a source of continuing education for the community,
transfer preparation is still a large part of their mission. Modern community colleges strive to prepare students for an easy, seamless transfer to the university to complete their upper level coursework. In the early years of junior colleges, transferring to a university was often difficult for students. Students often had to repeat courses after transferring because the university did not accept the courses taken at the 2-year college. Junior college advocates began to voice their concerns for clear policies that protected students upon transfer.

Articulation Agreements

In 1971, Florida developed the first formal articulation agreement. These policies were included in the Florida statutes and “specifically affected statewide requirements for general education, a common course numbering system, an achievement testing program, institution-to-institution liaison procedures, and an advisory committee that adjudicates appeals when needed” (Witt et al., 1994, p.234).

Articulation agreements make it easier for students to transfer from community colleges to universities. Unfortunately, not all states have developed a formal, statewide agreement. In spring 1999, Townsend and Ignash (2000) conducted a survey of the executive directors of higher education and community college agencies to determine which states had articulation agreements, and what was included or covered in the agreement. Representatives from 43 states responded to the survey. Of the respondents, 34 indicated that their state had developed a formal statewide articulation agreement and 9 states indicated they had no agreement. Four of the nine states that had no statewide
agreement had voluntary inter-institutional agreements or system agreements. Two of the nine states had developed an agreement but it was not implemented at the time of the study.

Twenty-three states having articulation agreements designated 1 or more associate degrees as the degree that would automatically transfer to all public 4-year institutions in the state. The other states that had agreements addressed the transferability of vocational courses and general education courses. Twenty-two states indicated requirements for general education, either by stipulating the number of credit hours of general education courses required, or by suggesting required subjects. Only 13 states indicated that their agreement had a common course numbering system to help students transfer courses within the state higher education system (Townsend & Ignash, 2000).

**Student Demographics**

Universities need to develop an understanding of the demographics of transfer students in order to provide services that are appropriate to these students. Piland (1995) conducted a study of community college transfer students after they received their bachelor’s degree to determine if they fit the stereotype of the typical community college student. The author proposed that community college students are stereotyped as enrolling immediately after high school, attending the community college for 2 years and then transferring to a senior level institution. The author analyzed community college students \((n = 1,796)\) who transferred from San Diego County and received a bachelor’s degree from San Diego State University to determine the mean number of credits
transferred, percentage of full-time students, mean GPA, major, and demographic information.

The data from the study indicated that the transfer students in the sample do not fit the stereotype of the typical community college student. The mean age of students at the time of transfer was 26 and the mean age at graduation was 29. Students in the sample transferred an average of 58 credits to the senior level institution. Fifty-eight percent of transfer students attended school part-time while attending the community college (Piland, 1995).

Fifty-one percent of students transferring from the community college were female and one third of transfer students were minority students. Twenty-three percent of transfer students majored in Business, 19% Fine Arts, and 15% Science. The mean GPA of transfer students was 3.1 and it was found that students who transferred with GPAs ranging from 3.5 to 4.0 had the highest graduation rates, by a 2 to 1 margin over students with less than a 2.5 GPA (Piland, 1995). The author concluded:

By the time many of the community college transfers earn their baccalaureate degrees, they are about 30 years old. When these students are in the matriculation process, they are young adults who have moved through one or two life stages. The lifestyle of these students is quite different from the mistaken perception held by some university administrators of a mythical transfer student who enrolls in the community college at age 17 or 18, graduates from the college and enrolls in the university at age 19 or 20, and graduates from a university at age 21 or 22. The reality suggests that policy makers and practitioners should rethink transfer policies and practices (Piland, 1995, p.23)

An increasing number of students are working while they attend school. In 1996, 76.2% of male college students and 74.9% of female college students worked 20 hours or
more. In the same year 51% of males and 45.7% of females worked 35 or more hours. Working is a concern when it conflicts with school and affects academic performance. The more students work to pay their expenses the more negative effects on their grades. This is a concern for community college students because many of them come from low socioeconomic backgrounds and are forced to work to pay their living and educational expenses. (National Center for Education Statistics, 2000)

According to the *Chronicle of Higher Education* (2004), enrollment estimates for community colleges in the fall of 2004 was 5,969,000 for public colleges and 276,000 for private. It is estimated that by 2010 this number will increase to 6,356,000 at public community colleges and 299,000 at private community colleges. In the fall of 2001, 34.9% of all students at public community colleges and 39.4% of students at private community colleges were minority students. The following is a break down by ethnic group: American Indian: 78,200; Asian: 417,500; Black: 795,700; Hispanic: 904,300; White: 3,955,700; and International: 99,200. Men represented 2,675,200 students while women represented 3,575,379 students. Approximately 21% of community college students received financial aid in the 1999-2000 academic year. The diversity noted in these statistics makes community colleges a place where students of different ethnic groups and socioeconomic status can attend school and feel they belong.

**Transfer Student Success**

In the 1999-2000 academic year 20% of bachelor’s degree recipients began their education at a public 2-year college (Bradburn, Berger, Li, Peter, & Rooney, 2003).
Students transferring from community colleges are often different from students who begin their education at a 4-year institution. These students often have different academic preparation and socioeconomic status than their senior institution counterparts. Community college students tend to be less academically prepared than senior institution students are. Many students select the community college because its open door policy is forgiving of past academic failings. Many lower level socioeconomic students choose the community college because low cost and proximity to home allow an opportunity to live at home and work part- or full-time while attending college. For most senior institution students, college is their primary focus with other responsibilities being secondary (Glass & Bunn, 1998, p.240).

A study conducted by the National Center for Education Statistics (NCES) concluded that students’ secondary education goals have significant effects on the rate of transfers. “One-half of the undergraduates, who start at a public 2-year institution with the intention of obtaining a bachelor’s degree and about one-forth of those who start with an associate’s degree goal transferred to a 2-year institution within 6 years” (U.S. Department of Education, 2003, p. 44). Other factors associated with higher transfer rates included the following: enrolling in a community college the same year as high school graduation, attending school full-time, having a parent with a bachelor’s degree or higher, and the gender of the student. Approximately 74% of males and 67% of females in the NCES study transferred to a 4-year institution within 6 years (U.S. Department of Education, 2003).
The students in the NCES study began their education at a public 2-year institution in the 1995-1996 academic year. At the end of the study in June of 2001 approximately 79% of the students had either graduated (34.7%) or were still enrolled (44.3%) (U.S. Department of Education, 2003).

Most previous research has focused on the success rates of transfer students compared to students who started college at a 4-year institution (native students). In 2000, Carlan and Byxbe found that many transfer students do not perform as well as native students in their first semester of upper level coursework. However, by graduation, GPAs for transfer students were similar to those of native students. This appeared to be true for all disciplines except business and the sciences. Transfer students in these areas earned lower GPAs in upper division coursework than native students. Additionally, when the authors compared the GPA of students who earned an AA degree to the GPA of students who did not earn an AA degree, the actual GPA of students who earned the degree showed a slight increase. However, when a regression analysis was conducted, no statistical significance to academic performance was found when the influence of other variables was held constant. From this, the authors determined “efforts to require earning the AA degree seem void of merit” (Carlan & Byxbe, 2000, p. 6).

In 2000, Belcheir published a 10-year study that was conducted to determine the probability of graduation for freshman and transfer students admitted to an Idaho university in the fall 1989 semester. The author examined the records of 1,692 freshman and 767 transfer students, 4, 6, and 10 years after admission to determine graduation status, enrollment patters (continuously/not continuously enrolled and full/part time
attendance), and GPA patterns. She found that “Transfers were 6.8 times more likely than freshmen to graduate after four years, 4.1 times as likely after six years, and 3.1 times as likely after ten” (p.3). Full-time enrollment for transfer students boosted their odds of graduating by 3.8 times after 4 years, 4.6 times after six years, and 5.1 times after 10 years.

Continuously enrolled freshmen were twice as likely to graduate after 4 years as those who did not enroll continuously. Those who attended school full-time and were continuously enrolled were 2.5 times as likely to graduate as part-time freshmen who were not continuously enrolled (Belcheir, 2000).

GPA was another important factor in the study. The author found that it was especially important for freshmen to earn a high GPA early in their academic career. “For each unit increase in the first semester GPA (e.g., from 2.00 to 3.00), the chances of graduating doubled” (Belcheir, 2000, p.4). Transfer students who performed poorly in their first semester were likely to graduate only if they remained continuously enrolled. Students with low first semester GPAs reduced their chance of graduating by 9 times. The author concluded: “The study further confirmed the advantage that transfer students had over new freshmen in reaching graduation. Though freshmen closed the gap in their probability of graduating over time, they never fully caught up” (Belcheir, 2000, p.13).

A student’s GPA upon entering an upper level institution appears to have a significant influence on his/her success. In 1995, Dupraw and Michael published a study in which they compared three groups of students admitted to the University of California at San Diego over a 3-year period. The first group was composed of students who had a
guaranteed transfer admission (TAG). Students in the TAG group signed a contract before they transferred, agreeing to take a prescribed curriculum and keep a minimum GPA of 2.8. This group was guaranteed admission to the university upon application. The second group was composed of community college transfer students. These students applied and competed for admission with all other transfer students. This group was labeled NTAG. The final comparison group was composed of students who entered the university as freshmen.

GPAs were collected at the end of the third semester for transfer students and at the end of the junior year for native students. The researchers found that students in the native group earned a significantly higher mean GPA in their junior year than either transfer group. There was no significant difference between the GPAs of the transfer groups. However, there was a difference among the transfer students based on entry GPA. Some transfer students were admitted to the university with a minimum GPA of 2.4 while others were admitted with a minimum GPA of 2.8. Twenty-two percent of students in the TAG group and 13% of the NTAG group who were admitted with a GPA of 2.4, experienced academic probation. Once the minimum GPA was raised to 2.8, those figures dropped to 5% and 6%, respectively (Dupraw & William, 1995).

In 1993, a study was conducted at a university in Kentucky to determine if students who completed an associate’s degree or had 60 or more credit hours (upper division transfers) would perform better at a 4-year institution then students who transferred with fewer than 60 hours (lower division transfers). The authors compared the GPAs, graduation rates, and dismissal rates of upper division transfer students to
lower division transfer students and native university students. The mean GPA of upper
division transfer students (2.45) and the GPA of native university juniors (2.55) were
very close and the difference was not statistically significant. However, when the authors
compared the GPAs of lower division transfers (2.13) to upper division transfer students
(2.45), the difference was statistically significant (Best & Gehring, 1993).

When graduation rates of the three groups were compared, the researchers found
that the native university students had the highest graduation rate (60.4%). Forty-percent
of upper division transfers had graduated while only 30.9% of lower division transfers
had graduated (Best & Gehring, 1993).

When the dismissal rates of the groups were compared, the authors found that the
upper division transfer group had only a 7.6% dismissal rate while the lower division
transfers had a 17.5% dismissal rate. The authors concluded that native students have a
higher graduation rate than transfer students. However, of the transfer groups, upper
division transfer students received higher GPAs, had higher graduation rates, and lower
dismissal rates than lower division transfers (Best & Gehring, 1993).

Recently, Glass and Harrington (2002) conducted a cross-sectional study
examining several questions pertaining to community college transfer students. In the
fall 1996 semester the pre-transfer mean GPA of 50 transfer students (3.01) was
compared to the mean GPA of 50 native students (2.94) at the end of their sophomore
year. In the fall 1997 semester the authors again compared the pre-transfer mean GPA of
50 transfer students (3.09) to the mean GPA of 50 native students (2.85). The difference
in GPAs between the transfer students and the native students was not statistically
significant in the 1996 group. However, it was statistically significant for the students in the 1997 group.

After the first semester of upper level coursework for each group, the authors compared the semester GPA of the native group to the semester GPA of the transfer group. For the 1996 group they found that the mean GPA of the transfer students (2.57) was significantly lower than the mean GPA of the native students (2.98). However, when the students in the 1997 group were compared at the end of their first semester, the mean GPA of transfer students (2.72) was only slightly lower than the mean GPA of native students (2.82). This difference was not statistically significant (Glass & Harrington, 2002).

Overall, transfer students had a GPA equal to or greater than native students at the end of their lower division coursework. However, the GPAs of transfer students went down at the end of their first semester of university work but went back up in subsequent semesters while the GPA of native students remained constant throughout their academic career (Glass & Harrington, 2002).

Retention and graduation rates between native and transfer students were also examined in this study. The authors found no significant difference in retention rates between transfer students and native students in the first year; however, in the second year the retention rate for transfer students was lower. Finally, graduation rates were similar for both transfer and native students. In addition, if students completed their junior year, they were likely to graduate (Glass & Harrington, 2002).
Gao, Hughes, O’Rear, and Fendley (2002) conducted a longitudinal study from the fall 1994 semester through the fall 2000 semester to compare the success rates of transfer students to the success rates of native students. The authors’ sample included all undergraduate students enrolling at the institution for the first time in fall 1994. Of this group, 2545 were freshmen and 1194 were transfer students. Approximately 55% of students in the native group and 48% of the transfer group were female. Approximately 15% of both groups were minority students. Three quarters of the native students were under 20 years old when they first enrolled while almost three quarters of the transfer students in the sample were 20 years old or older.

The authors found that transfer students as a group had a significantly higher 4-year graduation rate than native students. However, at the end of 6 years, the native student group had a higher graduation rate than the transfer student group.

When retention rates were compared for the two groups at the end of the 6 years, native students had a higher retention rate than transfer students, especially if the student transferred with fewer than 32 credit hours. The authors found that students with 32 or more credit hours were as likely as native students to persist in higher education. The authors concluded:

This study agrees with other studies that first term academic performance is crucial for both native and transfer students in terms of their graduation and persistence. . . .transfer credit hours have a strong effect on transfer student graduation and retention rates (Gao, Hughes, O’Rear, & Fendley, 2002 p.14).

In 1998, Glass and Bunn measured transfer student success by examining the length of time community college transfer students took to earn a degree. They found
that 55\% of transfer students graduated within 4 years of enrolling, and another 36\% graduated within 7 years. Students took longer if they were employed full-time. Only 8.4\% of students employed full-time graduated within 4 years of enrolling. Study participants indicated that support services such as faculty advising and admissions had a positive effect on the length of time to graduation (Glass & Bunn, 1998).

A large number of studies examining transfer student success have focused on possible reasons these students have academic problems at 4-year institutions. One problem for many students is transfer shock. Glass and Harrington (2002) describe transfer shock as “a decline in the GPA on transferring from a community college to a 4-year institution (often experienced in the first semester)” (p.417). Transfer shock can lead students to believe they cannot handle upper level course work so they leave the institution (Glass & Harrington, 2002). Many of the studies reviewed for this research discussed this phenomenon. However, other studies did not find evidence of a drop in GPA upon entering an upper level institution. Alpern (2000) conducted a study in which she surveyed transfer students from three different baccalaureate institutions. These students self reported their community college and baccalaureate GPAs. Their grades did not show a significant decline in GPA after transfer. Alpern concluded that community college GPA was influential in the choice of a baccalaureate institution but found no evidence that the study participants suffered transfer shock.

Some critics blame community colleges if transfer students are not successful. One argument suggests that because community colleges have lower entry requirements, performance levels are decreased and students are not prepared for work at a 4-year
institution (Carlan & Byxbe, 2000). Another argument suggests that community college students are overprotected. Students are nurtured to ensure success and boost their confidence. This does not prepare them for transfer to a 4-year institution where they will be expected to take direction and work independently. Critics also complain that community colleges are more lenient in grading than 4-year institutions, which leads to grade inflation at the lower level and a drop in GPA at the upper level (Carlan & Byxbe, 2000).

Lee, Mackie-Lewis, and Mars (1993) conducted a study to determine whether transfer from a community college is a disadvantage to students’ persistence in higher education compared to native students. The authors selected a sample of 2,321 students from various institutions. Select students who were high school seniors in 1980 and in college in 1982 and 1984 were added to the sample. They also identified transfer students from community colleges and native students from various universities. Students from California and Florida were added to the sample because of the large transfer program located in these states.

The authors examined student behaviors (living at home/school, academic satisfaction, social satisfaction, and GPA), institutional measures (do students in states with well-developed programs fit in better), transfer measure (had the student attended a community college), and background measures (demographics) in relation to student persistence to determine if community college transfer students are disadvantaged (Lee, Mackie-Lewis, & Mars, 1993).
The authors found that family social class was significantly higher for native students than for community college transfers. This lower socioeconomic status could be why students chose to attend the community college. The transfer group contained more men and slightly more Hispanics than the native student group (Lee, Mackie-Lewis, & Mars, 1993).

They also found that native students had an advantage over transfer students on the variable labeled student behavior in college. Native students were more likely to live in residence halls, attend school full-time, and attend a public college or university. They also had slightly higher mean GPA than transfer students did. Community college transfer students also indicated a lower level of satisfaction with the upper-level institution than native students did. The authors hypothesized that two factors were related to this dissatisfaction. Transfer students may be visualizing an idealized view of the senior level institution before transfer and then they are disappointed by the reality. The authors also indicated that other students and faculty have little respect for community college transfer students and make little effort to welcome them (Lee, Mackie-Lewis, & Mars, 1993).

The authors found few significant differences in institutional characteristics. Students who transferred from the community college were more likely to be located in California or Florida. This is most likely due to the strong articulation agreements that exist in these states. Of the students in the study, more than half of the transfer students in Florida transferred to a large public college. Another noteworthy finding was that
community college students in the study transferred to less select colleges than native students did (Lee, Mackie-Lewis, & Mars, 1993).

The authors found that overall there was no disadvantage for students transferring from a community college to a 4-year institution for persistence to graduation. Their findings suggest that not every four-year college offers equal opportunities for transfer students. Colleges with the highest proportion of minority students may not be the best choice of institutions for community college transfer students. The authors hypothesized that this could be due to lack of resources. They reported the following conclusion to their findings:

“What we believe we have shown here is that the major disadvantage of community college attendance for persistence to the B.A. degree lies within the community colleges themselves, particularly in the institutions’ relative inability (or maybe even active resistance) to facilitate transfer for the students who wish to do so but do not necessarily have the academic record or already-developed academic behaviors to make this easy to accomplish without institutional assistance. On the other hand, for those students who are successful to the baccalaureate (and by “successful,” we mean they actually accomplish the transfer and stay in school), having attended community college appears to exert no disadvantage on persistence. Another way of phrasing this is that students who make use of the more traditional four-year college route to the same goal have no special advantage” (Lee, Mackie-Lewis, & Mars, 1993, p. 107).

Henry and Knight (2003) also investigated student persistence in community college transfer students. The authors examined the experiences of students (n = 552) from a public community college located in the Midwest to determine if students had graduated or were still enrolled. The authors divided the sample into two groups, persisters and non-persisters. The non-persisters had stopped attending college before the completion of the study.
The authors examined demographic information, enrollment behaviors, and educational characteristics of the students at both the community college and the university. The results were then divided into three sets: pre-college experience, community college experience, and university experience (Henry & Knight, 2003).

Pre-college experience: women represented the majority of both persisters and non-persisters and the majority of both groups were white. Sixty-two percent of persisters had a high school GPA of 2.5 or higher and ACT scores for both groups were between 18 and 20 (Henry & Knight, 2003).

Community college experience: Less than half of the persisters and a little more than a third of the non-persisters were enrolled in community colleges for two or less years. Only a small percentage of both groups attended school full-time and the majority of both groups attend part and full-time (alternate during different semesters). Total developmental credits earned ranged from 0 – 32. Non-persisters (49.5) took one or more developmental course. More than half of the both persisters and non-persisters took less than 60 hours at the community college. In addition, the majority of both groups had a GPA between 2.5 and 4.0 when transferring (Henry & Knight, 2003).

University experience: Most persisters were enrolled between 4 and 7 semesters, while non-persisters were only enrolled for 4 or fewer semesters. Forty-seven point six percent of persisters were enrolled both full and part time (alternating semesters) followed by 41.6% who were enrolled full-time. Seventy-four percent of persisters earned 120 – 168 credit hours while attending the university. Approximately one fourth of persisters earned their bachelor’s degree within 4 – 6 years of enrolling for the first
time at the university. Eighty-five percent ofpersisters had a cumulative GPA of 2.5 or above at the university, the largest group (32.3%) had a GPA between 3.0 and 3.49. The data showed that non-persisters had a significantly lower GPA than persisters at the university. This is possibly due to transfer shock. Institutions need to be aware and support students who are experiencing academic difficulty (Henry & Knight, 2003).

The authors suggested that this information is important for community colleges and universities alike. Both institutions need to be aware of the factors that influence persistence for transfer students. This information would help institutions make decisions about providing support services for students. The authors recommended that community colleges develop transfer centers as part of their academic division to assist transfers (Henry & Knight, 2003).

**Associate Degrees and Student Success**

In the 2000-2001 academic year, 578,865 associate degrees were conferred by degree-granting institutions in the United States (National Center for Education Statistics, 2002). These associate degrees included Associate of Arts degrees (AA), Associate of Science degrees (AS) and Associate of Applied Science degrees (AAS). While a sizeable percentage of associate degree students will not continue their education, a number of associate degree recipients will transfer to a 4-year institution to earn a bachelor’s degree. Associate of Arts degrees are typically designed to assist students in preparing to transfer to an upper-level institution while AS and AAS degrees are typically designed to be terminal degrees.
As this is the case, studies have looked at whether AS/AAS degree recipients are as successful in upper-level institutions as AA degree recipients are. Townsend and Barnes (2001) examined the relationship between the type of associate degree a student received and his/her academic performance at a 4-year college. The authors examined all individuals who graduated from Missouri public 2-year colleges in the 1995-1996 academic year (n= 6,171). Fifty-five percent (3,371) of these students received an AA degree and 45% (2,800) received either an AS degree or an AAS degree. Of the associate degree recipients, 26% (1,585) transferred to a public 4-year college. Only 10% of students who transferred were recipients of an AS or AAS degree.

Sixty-three percent of students in this study who transferred with an AA degree graduated with a baccalaureate degree as compared to only 46% of AS/AAS degree transfers. The authors found a positive statistical relationship between the receipt of an AA degree and the completion of a 4-year degree. This is not surprising given the AA degree is intended to prepare students to complete a bachelor’s degree. Of the students who obtained a bachelor’s degree, the average GPA of the AA recipients was 3.12 while the average GPA of the AS/AAS degree recipients was 3.18. This study indicates that the type of associate degree a student receives is related to the completion of a 4-year degree. However, there appears to be no difference in academic performance between AA degree recipients and AS/AAS degree recipients. The authors concluded, “Because only 10% of those who received an AAS or AS degree transferred, it may be that they are the “cream of the crop” among students with applied degrees and thus might be expected to do well at a senior institution” (Townsend & Barnes, 2000, p.4).
Cejda and Kaylor (2001) conducted a study to determine why community college students transfer without an AA degree or its equivalent (60 hours). The students in this investigation transferred to a state university with 12 or more credit hours from a community college, but they did not have an AA degree. The study was limited to traditional age transfers who were enrolled on a full-time basis. The authors identified 5 themes that emerged from their analysis of student interviews. Theme 1 was labeled student intention. This theme was mentioned in 65% of the interviews. Students were asked to identify their educational goals upon entering the community college.

In rank order, the five most common intentions were (1) completing general education requirements, (2) getting the hard classes (i.e., mathematics, sciences, English) out of the way, (3) saving money for a year (or two), (4) deciding on a major, and (5) completing prerequisites for upper-level courses (Cejda & Kaylor, 2001, p.627).

Community college faculty interaction was mentioned by 48% of students in the survey and was labeled theme 2 by the authors. Many students revealed that faculty members at the community college encouraged them to transfer to a 4-year institution in the next semester. At times faculty encouraged the student to remain at the community college longer because the faculty member felt the student was not ready to handle university level coursework (Cejda & Kaylor, 2001).

The third theme in the study was personal factors. Factors such as family and finances influenced when the student transferred to the university. Students often remained at the community college longer because it was less expensive. Some students transferred to the university earlier because of family support. These students were
encouraged to transfer by their family who supported and influenced them in the educational process. Other students mentioned a lack of family support. These students felt that the community college provided them with a supportive environment and usually remained at the community college for a longer period of time (Cejda & Kaylor, 2001).

The fourth theme was labeled educational others. This category included the helpfulness of staff members at the community college. One interesting trend was apparent in this area. Eighty-one percent of students in the study were business and education majors. These students consistently mentioned peers as important to the decision to transfer to the university. Students transferred with their peers because they had established study groups and wanted to stay with their peers. This theme also included a second category, recruitment by the university. Transfer representatives often visited the campus to encourage students to transfer to combat enrollment declines at the university (Cejda & Kaylor, 2001).

The fifth theme was perceived problems. Almost all of the participants who mentioned this theme felt that they would be behind if they did not transfer to the university. Other participants heard rumors that classes would not transfer if they took them at the community college so they felt they needed to transfer before taking such classes (Cejda & Kaylor, 2001).

As interesting as these findings may be, it should be mentioned that this study was conducted in a mid-western state that did not have an articulation agreement in place. Because there were no articulation agreements, there was no incentive for students to stay at the community college and complete an AA degree. In states with articulation
agreements, students would have greater motivation to stay at the community college until their AA degree was complete.

Transfer Student Satisfaction

Students’ perceptions of the transfer process and their experiences at both community college and senior level institutions can affect success. If students encounter difficulties when they try to transfer, they may become disheartened and give up. Students may find the university environment overwhelming, become discouraged, and drop out of school.

Townsend (1993) studied university practices that hinder the academic success of community college transfer students. She interviewed a small sample of 44 students regarding their perceptions of the university. The students reported a very different academic environment at the university than at the community college. They had experiences with university faculty that led them to believe faculty was not always willing to help if they were having difficulties in a class. Students indicated that faculty expected them to learn the material by themselves. The author proposed that community college faculty have different expectations of students than university faculty. The attitudes of community college faculty most likely result from the open-door policy at community colleges.

Students also reported more competitiveness among university students. They said university students do not often work together to learn the material or help each other if they are experiencing problems. Some students said they were reluctant to ask
questions for fear that faculty and other students would find their questions dumb or inappropriate.

“What this study suggests is that community college transfers, normed at the community college to a student-centered approach, may be confused and shocked when they face different standards and expectations at the university. Those who are able to rely upon themselves, not the faculty or fellow students, can survive. Those who expect help from the faculty and students may well be unable to survive in the university environment” (Townsend, 1993, p.9).

In the fall 1994 semester, Davies and Dickman (1998) conducted a study of Colorado community college transfer students to investigate three areas: (a) the student’s pre-transfer experience; (b) the student’s post-transfer experience; and (c) the student’s recommendations to the community colleges and state university aimed at improving the transfer process. Two aggregate groups of study participants were as follows: (a) students who had a cumulative GPA of 3.25 or better and (b) students who were on academic probation. The students were divided into focus groups after three semesters at the university and the groups were interviewed by a facilitator. Each participant had a chance to respond to each question and discuss.

Students had mixed opinions of their pre-transfer experience. The information they received about the upper level institution came from advisors at the community college. Many students reported that their advisor was very helpful in providing information about courses that would transfer and ensuring that they completed the requirements for their major. A few students reported that they went to advising once but did not go back because they did not find it helpful (Davies & Dickmann, 1998).
Non-probationary students reported that they perceived the community college to have lower standards. They said that much of their grade at the community college was based on homework as compared to the university where their grade was based on examinations and written papers. Students reported no difference between faculty at the community college and the university. However, they felt that the campus culture at the community college was much friendlier to students (Davies & Dickmann, 1998).

The post-transfer experiences of many students were varied. Some students reported advising at the university to be helpful while others had negative experiences with advisors. Some reported receiving different information from different advisors, advisors who made inappropriate comments, advisors who were rarely accessible, and advisors who did not listen (Davies & Dickmann, 1998).

Non-probationary students indicated that the university was not as intellectually stimulating as they expected. Students on probation had a harder time maintaining their grades because the academic environment was so different from the community college. They felt the classes were too big and they were not informed about the tutoring center until they were already on probation. All students appeared to experience a campus culture shock in their first semester at the university. Probationary students felt the university placed too much emphasis on grades and that expectations were too high. Students were surprised by the size of classes and that many of their instructors were graduate teaching assistants instead of professors (Davies & Dickmann, 1998).

Many students described negative emotions related to their transfer experience. The non-probationary students used words such as overwhelmed, dehumanized, depersonalized, and invisible. The probationary students described their feelings
as follows: “the bad grades cut my self-esteem,” “I cried because I was different,” “I cried because nobody cared,” “I felt isolated,” and “as a probationary student I felt labeled.” (Davies & Dickmann, 1998, p.548).

The students provided several recommendations for improving the transfer process. First, they felt that the experience would be better if there were greater cooperation between community colleges and universities. Students wanted to be informed of what credits would transfer and wanted to be advised by a university advisor earlier in the process. They also wanted advisors to understand that students do not know everything about the transfer process, and expressed a belief that advisors should get to know their advisees early in the process. Probationary students wanted the university to tell transferring students that they are expected to be highly motivated at the university. They also felt that advisors, counselors, and faculty at the community college should know the transfer program better so they could do a better job of advising students (Davies & Dickmann, 1998).

More recently, Berger and Malaney (2001) conducted a telephone survey of 392 transfer students at the University of Massachusetts - Amherst. The researchers wanted to assess how student pre and post transfer experiences influenced their adjustment from the community college to the university. Student perceptions in 4 areas were examined: (a) pre-college characteristics (race, gender, age, and local or non-local 2-year college attendance); (b) levels of community college involvement; (c) information regarding knowledge about preparation for transfer; and (d) levels of university involvement.

Generally, student level of satisfaction was consistent across the five areas. Students reported reducing outside commitments after transferring to the university. The
number of hours they spent with family commitments was reduced by approximately 3 hours per week and the number of work hours by approximately 8 hours per week. At the same time students increased study time at the university by approximately 5 hours per week. One interesting finding was that despite the fact that students reduced the number of hours spent on family and work commitments, they increased the amount of time they spent socializing with peers while enrolled at the university (Berger & Malaney, 2001).

Student satisfaction with academic support was high, but lower than social and experiential satisfaction. Eighty-eight percent of students reported that they were satisfied with their university experience and 89% were satisfied with their social life. Eighty-six percent of students reported they were satisfied with their academic progress while only 68% were satisfied with the academic support they had received. Students who spent the most time doing homework at the community college were less likely to be satisfied with the academic support they received at the university. The authors proposed that this could be due to students having a harder time obtaining academic advising at the university than they had at the community college (Berger & Malaney, 2001).

When the authors examined pre-college characteristics, they found that older students were more likely to be satisfied with advising and faculty and attained higher grades at the university. The authors proposed that these results could be due to older students taking advantage of academic advising more often or to faculty who tended to take more time to work with older students. The authors also found that white students were more likely to be satisfied with the university experience and to achieve higher
grades than other ethnic groups. They proposed that universities provide a more supportive environment for students of color (Berger & Malaney, 2001).

The researchers found that preparation for transfer is an important factor in student adjustment and satisfaction at the university. When students used available resources to gain knowledge about the transfer process they were more satisfied at the university and preformed better academically. This suggests that leaders at both the community college and the university need to ensure that community college students are provided with accurate information about the transfer process. In addition, community college and university leaders should be encouraging community college students to seek information to ensure a smooth transfer. University leaders may also want to provide students with information about expectations and requirements at the university (Berger & Malaney, 2001).

Alpern (2000) conducted a survey of transfer students who had completed 100 or more credit hours at the community college and university to determine the experiences that influence their selection of a particular 4-year college as well as their educational and career goals, academic performance and demographics. Five hundred and forty-one surveys were returned for a 28.8% response rate. The students in the sample indicated that they wanted information about the transfer process and financial aid information that would help them plan their program at the community college and then at the senior level institution. Most students reported satisfaction with their bachelor’s degree institution and those students who reported dissatisfaction had not received information or received incorrect information about the transfer process.
The majority of students in the sample reported that they had decided on a major before transferring and had not changed. This reinforces the belief that community college students settle on a major before transferring to the university and do not change. Students also reported that the decision to transfer at a certain time was based on the number of credit hours the 4-year institution would accept (Alpern, 2000).

The author did not find evidence of transfer shock. Students who were doing well at the community college continued to do well after transferring to the baccalaureate institution. The majority of students in the study reported working full or part-time. This appeared to have some influence on their persistence to degree. Many of these students were forced to take a break in their education or to attend school part-time (Alpern, 2000).

One finding that was evident in these studies was that students who have positive perceptions about the transfer process were more likely to be successful at the university and persist to graduation. It is recommended that leaders in higher education stay informed about students’ perceptions in relation to the transfer process and the way students are treated by staff at both the community college and the university during the process.

Ethnicity and Transfer Student Success

In 2000, 29.3% of the 11,752,786 students attending public degree-granting institutions in the United States were minority students. At public 2-year institutions
minority students accounted for 34.6% of enrollment. However, this number dropped to 24.2% at public 4-year institutions (National Center for Education Statistics, 2002).

During the 1999-2000 academic year, “About three-quarters (74 percent) were White; 8 percent were Black or African American; 9 percent were Hispanic or Latino; and 6 percent were Asian” (Bradburn et al. 2003, 1). Studies have also examined the success rates for transfer students of different ethnic groups to determine if there was a link between ethnicity and obtaining a bachelor’s degree and the types of problems they encountered in the transfer process.

In the spring 1994 and 1995 academic years, Laanan (1999) compared White and Non-White transfer students at a major research university to determine how students differ in their community college and university experiences. He surveyed 2,369 students who transferred to the university in fall 1994 and 1995 to determine to the extent to which racial/ethnic differences impacted involvement, quality of effort, general perceptions, and academic and social adjustment process among white and non-white transfer students.

Laanan identified several factors that affected the success rates of transfer students. White students worked more hours for pay than Non-White students did. More White students in the study had parents who graduated with degrees than Non-White students. They were also more likely to have family incomes above $40,000, and they worked more hours for pay than Non-White students did. Non-White participants spent more time on campus participating in social activities, and they were more likely to meet with academic counselors on a regular basis and utilize the services at the university.
The White students in the study had a higher mean GPA at the community college (3.45 versus 2.27) and at the university (3.28 versus 3.04) than Non-White students. A higher percentage of Non-White students indicated that their majors were engineering and applied mathematics, physical science, and social science. White students more often indicated that their majors were in the humanities and life sciences areas (Laanan, 1999).

Several factors influenced students’ decision to attend the university. Many White students indicated that they chose the university as a springboard to gain admission to a top graduate school. Faculty, academic counselors at the community college, friends, parents, and the availability of financial aid were very influential in White students’ decision to attend the university. Non-White students, who developed relationships with their counselor and teachers, were more likely to seek their advice and assistance when making the decision to transfer. The university’s reputation for social activities, ranking in national magazines, parent’s recommendation, and university recruiters all played a role in the decision of Non-White students to attend the university. Financial aid was an important factor in the decision since many students could not afford to pay for college (Laanan, 1999).

White and Non-White study participants had differing perceptions of the university environment. Non-White students reported feeling overwhelmed at a large university, uncomfortable about large lecture classes, insecure about making new friends, and were uncomfortable with the level of competition at the university. They also reported feeling a stigma about transferring and felt that faculty underestimated their
abilities. White students reported more involvement with faculty and would more often seek help on class projects and writing assignments. White students were less likely to have difficulty adjusting socially and felt secure about making friends at the university (Laanan, 1999).

A study conducted by the National Center for Education Statistics (2000) indicated that of the bachelor’s degrees awarded to Whites in the 1996-19997 academic year, the largest percentage was awarded to White females. Fifty-four point seven percent of degrees were awarded to Whites were conferred to females. Of the degrees awarded to Whites, females accounted for 81.8% of the degrees in health related professions, 73.7% in psychology, 75.2% in education, 52.8% in business, 48.9% in computer and information sciences, and only 15.2% in engineering.

Black Students

The National Center for Education Statistics reported that 31% of 18-24 year old Blacks attended college in 2000, up from 19% in 1980. During 2000, 12% of students enrolled in public 2-year institutions and 11% of students in 4-year institutions were Black. Blacks earned 11% of associate degrees awarded in 2000 yet they only earned 9% of bachelor’s degrees. The most popular degree among Blacks was business (22% of degrees conferred) with social sciences and history coming in second (11%) and psychology and education tying for third (7%) (Hoffman & Liagas, 2003).

A study conducted by the National Center for Education Statistics (2000) indicated that of the bachelor’s degrees awarded to Blacks in the 1996-19997 academic
year, the largest percentage was awarded to Black females. Sixty-four percent of degrees were awarded to Blacks were conferred to Black females. Of the degrees awarded to Blacks, females accounted for 85.4% of degrees in health related fields, 75% in psychology, 74% in education, 68.3% in business, 48.9% in computer and information sciences, and only 30% in engineering.

Lee (2001) conducted a qualitative study of Black transfer students to determine issues that enhance or deter successful transfer. Students were identified from institutional records and were selected if they successfully completed 12 or more hours at a 2-year institution prior to transfer. One-hour interview sessions were conducted involving 12 Black students.

Students indicated that the community college had specific programs to help students who intended to transfer to a university. They did not find the same type of support at the university. Students reported contacting faculty and staff members at the community college for advice even after they transferred. One student said, “This place is so white and I am obviously not! I am sure they look at me and see a Black man that won’t make it here” (Lee, 2001, p.41). This student indicated a belief that it was better for him to call somebody he already knew to ask questions because he believed university faculty and staff would think he was weak (Lee, 2001).

These students also tended to rely on other students for advice and information regarding academic planning. This peer mentoring approach appeared to be important to study participants. The author recommended that upper level institutions develop a
structured peer mentoring program to ensure students receive accurate information and encourage a connection to the university (Lee, 2001).

When asked about their ability to communicate with faculty belonging to a different race, study participants reported feeling uncomfortable and suspicious during these interactions. One student said he felt as if white faculty and staff stared at him when they were talking and he believed they thought he was stupid. He said they said they want to help but he had the feeling he was a bother. The author concluded that what the student perceived as staring was most likely viewed by staff members as being attentive. This cultural difference makes students feel misunderstood and could help account for the attrition rate among Blacks (Lee, 2001).

The author determined that the perceptions of students in the study made it difficult for Black students to be successful at the university. Policies and practices at the 4-year institution should be examined to ensure transfer students are treated fairly. Faculty and staff should be aware of cultural differences and pay attention to body language and verbal language to ensure they are not giving students a negative perception of the university (Lee, 2001).

Hispanic Students

The number of Hispanics enrolled in higher education in the United States from 1985 to 1995 increased by 98%, and in 2000, 22% of all 18- to 24-year old Hispanics were enrolled (Cejda, Casparis, & Rhodes, 2002). “During the 1990s (1990-91 to 1999-2000), the number of bachelor’s degrees awarded to Hispanics rose by 105 percent, faster
than any other racial/ethnic group” (Liagas, 2003, p.98). Regardless of this increase in
enrollment and graduation, Hispanic degree attainment still lags behind Black and
Caucasian enrollments. In the 1999-2000 academic year Hispanics earned 9% of all
associate degrees and 6% of bachelor’s degrees. In 2000, 10% of 25- to 29-year old
Hispanics had completed a bachelor’s degree compared to 34% of Caucasians and 18%
of Blacks in the same age group (Liagas, 2003).

A study conducted by the National Center for Education Statistics (2000)
indicated that of the bachelor’s degrees awarded to Hispanics in the 1996-19997
academic year, the largest percentage was awarded to Hispanic females. Fifty-six point
five percent of degrees were awarded to Hispanics were conferred to females. Of the
degrees awarded to Hispanics, females accounted for 78% of degrees in a health related
fields, 76% in psychology, 76% in education, 54.2% in business, 32.6% in computer and
information sciences, and only 18.4% in engineering.

Cejda, Casparis, and Rhodes (2002) interviewed 90 students at 3 community
colleges to determine which individuals influenced the decision of Hispanic community
college students to enroll in the community college, continue at the community college,
earn a certificate or an associate degree, transfer to a baccalaureate institution, and choice
of major.

Two themes were evident in the students’ responses to interview questions.
Theme one was family influences. Sixty-percent of interviewees mentioned family as
important to their educational decisions. These family influences came in different forms
and from different family members. Students who were parents reported that the most
influential family members were their children. They reported feeling that they could not expect their children to do what they could not do. One student said it was important for her to earn a degree to make a better life for her child. Other students reported receiving support and encouragement from other family members either verbally or through financial support. Some students reported a desire not to repeat the mistakes of family members as motivation to attain a degree. These students said they did not want to end up in low paying jobs or in jail like other family members (Cejda, Casparis, & Rhodes, 2002).

The second theme was other influences. Forty-eight percent of students reported that community college faculty influenced their educational decisions and 23% reported influence from peers. Students reported that both community college faculty and peers encouraged them and told them about programs and other successful students. Nine percent of students reported being influenced by other community college staff and 12% of interviewees reported that high school teachers influenced their decision to attend college (Cejda, Casparis, & Rhodes, 2002).

In the Spring 1998 semester, Hernandez conducted a qualitative study to determine what factors influenced the retention and graduation of Hispanic students. He found several themes that impacted retention. First, all of the study participants indicated a belief that they possessed the ability to succeed in college. This belief gave them confidence and helped them stay motivated. Influence from family and support from friends, peers and college faculty and staff were mentioned by study participants as important motivating factors.
Students felt that involvement in clubs and organizations. Finding a Hispanic community on campus also played an important role in their decision to remain in school. Finances had both a positive and negative impact on the students’ ability to meet their educational goals. The availability of scholarships and financial aid was an important determinant of enrollment for low income Hispanics (Hernandez, 2000).

Students had many ideas about what influenced their decision to stay in school. Students discussed the belief that it is the students themselves who must make the environment work for them. They said it was up to the students to take advantage of the services and opportunities available to them to make it through school. Other students indicated that both people and personal experiences shaped the environment and had both positive and negative influences on their decision to remain in school. Finally, the participants felt that if they remained involved on campus they could break down the environment into small units and this would increase the likelihood that students would feel welcome and therefore choose to remain (Hernandez, 2000).

These studies suggest that encouraging words from college staff and faculty members are an important influence on the educational decisions of Hispanic students and can make a significant impact on recruitment and retention at both community colleges and upper-level institutions. It is important for students to have mentors that they feel understand them. Community colleges and universities should strive to have a diverse group of faculty and staff to ensure students feel they belong at the institution and to increase retention (Cejda, Casparis, & Rhodes, 2002).
Asian American Students

There are a very small number of Asian/Pacific Islander students enrolled in higher education in the United States. In 2000, this ethnic group accounted for only 7% of students at 2-year institutions and 6% of students at 4-year institutions. Only 4.9% of associate’s degrees awarded and 6.1% of the bachelor’s degrees awarded in the 1999-2000 academic year were awarded to Asian/Pacific Islander students (Hoffman & Liagas, 2003).

A study conducted by the National Center for Education Statistics (2000) indicated that of the bachelor’s degrees awarded to Asians in the 1996-19997 academic year, the largest percentage was awarded to Asian females. Fifty-two percent of degrees were awarded to Asians were conferred to Asian females. Of the degrees awarded to Asians, females accounted for 74.8% of the degrees in health related fields, 70.3% in psychology, 70.9% in education, 53% in business, 30.3% in computer and information sciences, and only 20.1% in engineering.

Because a number of Asian/Pacific Islander students have language barriers, they tend to pick programs that are math-based and science-based and avoid majors requiring language skills such as education. This trend continues for Asian American graduate students who go on to become college or university faculty (Suzuki, 2002). Most of the literature regarding this ethnic group was focused on college students in general and provided information about their perceptions and the stereotypes they must constantly fight throughout their academic careers.
Asian Americans are often referred to as the model minority. The stereotype of the model student, who is highly motivated, earns good grades, is quiet, and never causes any problems, still exists on many college and university campuses. This stereotype can make life difficult for many Asian American students and often precludes them from obtaining needed services such as tutoring because they are not informed that these services exist (Suzuki, 2002).

In *Revisiting the Model Minority Stereotype: Implications for Student Affairs Practice and Higher Education*, Suzuki (2002) said that staff and students in the California State University system reported that student services programs tend to be indifferent to the needs of Asian American students. The students also reported “subtle incidents of discrimination” and “racist statements about Asian Americans” by both instructors and students (p. 28).

In *Voices of Asian American Students*, Liang, Lee, Kodama, and McEwen (2002) interviewed three Asian American college students to hear their perceptions of issues related to Asian American students. One student reported that a faculty member told him that Asian American students are apathetic and just want to get their degree and leave. The student said that Asian students are disconnected because they cannot relate to the people who are making the decisions that affect them. He said that Asian students do not feel as though they are part of the institution so it is difficult for them to take ownership.

Another student reported that there are very few Asian leaders in higher education. This lack of Asian leaders makes it difficult for students to find role models. One student said he noticed that faculty, staff, and administrators did not understand
issues that affect Asian students. She said it is essential for Asian Pacific Americans “to have the option of learning from someone who has personal experience coupled with book knowledge to make sense and to validate what they are feeling” (Liang et al., 2002, p.7).

The students also reported that student leaders were White and could not voice the opinions of Asian students. One student said, “How are students ever going to understand the differences in experience between Asian Americans and others if even the negative and threatening issues are not allowed to be raised” (Liang et al., 2002, p. 8). The same student also felt that student affairs practitioners are showing disregard for the needs of Asian students and should support Asian students and encourage them to become involved on campus (Liang et al., 2002).

These students also reported a need for a safe space on campus. The authors indicated that when there was an Asian American Student Union on campus, students had a place to go where they could be with others who understood them and their culture. This helped them feel like they belonged and gave them a safe place to go (Liang et al., 2002).

Another program that is helpful for students is the Asian American mentoring program. This program helps first-year students with the transition into college by providing workshops and a mentor who teaches them about issues that affect Asian American students (Liang et al., 2002).

This overview of literature about minority student success suggests that there are key factors for all minority students regardless of their ethnic origin. These are: a feeling
of belonging on campus, positive relationships and encouragement from college faculty, staff, and administrators, role models within the institution, and a place student’s can go and feel like they belong were all factors that motivated minority students. Encouraging a welcoming environment will help motivate students to stay in school and earn their degree.

Gender and Transfer Student Success

Another factor in community college transfer rates is gender. In the 1999-2000 academic year women earned 340,212 associate degrees while only 224,721 men earned associate degrees. During the same academic year, women earned 707,508 bachelor’s degrees while men earned only 530,367 degrees (National Center for Education Statistics, 2002). There were also gender differences in transfer students.

Female undergraduate enrollment has increased 100% over the past 25 years. Statistics from 1997 indicate that females are more likely than males (70% for females, 64% for males) to enroll in college immediately after high school graduation. In 1970, only 42.3% of college students were women. By 1996, that number had risen to 55.9%. In 1996, females accounted for 54.2% of full-time students and 58.3% of part-time students. Of students who enrolled in higher education in the 1989-1990 academic year 46 percent had graduated with a bachelor’s degree by 1994. Of the 1994 bachelor’s degree graduates, 50.3% were female (National Center for Education Statistics, 2000).

In a study conducted in the late 1990’s, Surette (2001) found that men were more likely to transfer than women were by approximately 6 percentage points. Of those who
actually transfer, there is only a small difference between men and women who complete their bachelor’s degree. The author discovered several reasons women do not transfer. Family responsibilities, proximity, and money all played a part in women’s decision not to transfer. “Marital status and child-rearing responsibilities have larger negative effects on college attendance for women than for men and on 4-year attendance than on two-year attendance” (Surette, 2001, p. 161).

Another important aspect in low transfer rates for women was occupational preference. Women actually earn higher returns for 4-year degrees than men do, yet women more often choose occupations that require only a 2-year degree so there is no need for them to seek a bachelor’s degree (Surette, 2001).

A 1997 study indicated that both men (22%) and women (17%) were more likely to earn a bachelor’s degree in business than in any other field. However, the same study indicated that women were more likely to earn degrees in education, health and psychology, whereas men were more likely to earn degrees in engineering, computer science, and physical science. These choices may have long term consequences for women entering the workforce since the majors men typically choose lead to higher paying jobs (National Center for Education Statistics, 2000).

Conclusion

Community colleges are seeing increased enrollment as more students are graduating from high school and many students cannot get into four-year institutions. Those students push out students who are not as academically prepared for college level
coursework. This raises the question of access to education. Community colleges are typically under funded and understaffed. Nonetheless, they must continue their mission to providing an education to the community (Evelyn, 2004). The question of success rates for transfer students becomes particularly important as resources are stretched.

Many states have articulation agreements that assist students with transferring from a two-year school to a four-year school. These agreements insure admission to the university and guarantee that coursework taken will transfer. However, articulation agreements provide no assistance once a student is admitted to a senior level institution. Understanding factors that influence the success rates of students who transfer to 4-year institutions is important for higher education administrators. Factors that influence success rates of transfer student are still not fully understood.

While, there have been a number of studies that contrast transfer students to native students, only limited research has addressed the success rates of students transferring with an AA degree compared to students transferring without an AA degree. This study will addresses the relative success rates of AA and non AA transfers and will do so further analyze these success rates by gender and ethnic group.
CHAPTER 3

METHODOLOGY

Introduction

In the fall 2002 semester, public universities in the state of Florida enrolled 19,267 new transfer students. Of these new transfers, 13,139 (68.2%) students came from Florida community colleges, while 6,128 (31.8%) students were admitted from other educational institutions (Florida Department of Education, 2004). This study examines transfer students for the 2001 – 2002 academic year at the University of Central Florida (UCF), a large public research university located in Orlando. Success rates of transfer students with an Associate of Arts (AA) degree were compared to transfer students without an AA degree (irrespective of the number of credit hours transferred). Also examined were AA and non-AA transfer students in the context of student ethnicity and gender to determine the contribution of these variables.

Statement of the Problem

The number of transfer students across the country has continued to grow. The Chronicle of Higher Education (2004) reported that in the fall of 2001, 5,996,701 students were enrolled at public 2-year institutions nationwide and 253,878 students were enrolled at private 2-year institutions. Between 25% and 52%, (these estimates vary by definition of “transfer”) of these students will transfer to a 4-year institution (Bradburn & Hurst, 2001). The success rates of these students are often compared to the success rates
of first time in college students; however, little research has been conducted comparing AA degree transfer students to non-AA degree transfer students. This study will compare students who transfer with an AA degree to students who transfer without an AA degree to determine if there is a statistically significant difference in the probation rates, graduation GPA, and graduation rates of these two groups. Success rates for AA degree and non-AA degree transfer students will also be examined by gender and ethnic group to determine if these variables have any influence on the success rate of transfer students.

Setting

This study was conducted at the University of Central Florida (UCF) which is a large public research university located in Orlando, Florida. Florida has an articulation agreement that guarantees admission to a state university for any student graduating with an AA degree from any Florida public institution. The agreement also ensures that grade forgiveness that is a part of the student’s AA degree are honored and that all college level coursework from public institutions is transferable through a common course numbering system.

Population and Sample

The population for this study included all transfer students at UCF. The university has a large population of transfer students. A sample was drawn from this population. The sample consisted of all transfer students admitted to UCF in the 2001-2002 academic year ($N = 5408$). The sample was obtained from the Office of Institutional Research at the University of Central Florida. A data set was compiled from the university’s student
database (Peoplesoft). The data set included the following information: admission degree, admission term; gender; ethnic origin; transfer from a Florida community college or another institution; lower level (freshman or sophomore) or upper level (junior or senior) transfer; highest degree held upon admission; college GPA upon admission; high school GPA; academic probation, disqualification, or exclusion; graduation term; graduation GPA; and the degree received. To protect the privacy of students, no personal identifying information was provided in the data.

For the purpose of this study, only data for students seeking an initial bachelor’s degree were used. One hundred and twenty-five students were eliminated from the data set because they were second bachelor’s degree seeking students. The sample used for this study consisted of 5283 transfer students.

**Data Analysis**

To test the first three hypotheses, it was initially planned to utilize an analysis of covariance (ANCOVA). An ANCOVA model is normally suited to this type of analysis since an ANCOVA eliminates sources of variance due to confounding variables (in this analysis the student’s admission GPA was the covariate). However, for an ANCOVA to be meaningful, the regression coefficients must be equal for all groups. If they are not equal then adjusted means can be misleading and the ANCOVA should not be used. Before conducting an ANCOVA on this data, the homogeneity-of-slopes assumption was tested. The test indicated a significant interaction ($F_{(4,1682)} = 2.780, p = .007$).
Another concern related to the use of an ANCOVA is the assumption that the covariate must be related to the dependent variable (graduation GPA) but not related to the independent variable (admission degree). Because interpretation is based on a possible relationship between the covariate (admission GPA) and the independent variable (admission degree), it is possible that some of the students in the sample were admitted because they had earned an AA degree. Because of the potential relationship between the covariate and independent variable, the independence assumption was violated. Due to this violation and the violation of the homogeneity of slopes assumption, it was determined that the ANCOVA was not the appropriate procedure to apply to the data. This resulted in a reevaluation of statistical procedure for these hypotheses.

Graduation GPA and Admission Degree

Hypothesis 1: There is no statistically significant difference in overall graduation GPA between transfer degree status (AA or No AA).

For hypothesis one, a one-way analysis of variance (ANOVA) was conducted to evaluate mean differences in the dependent variable of graduation GPA across the independent variable, AA degree transfer students \((n=1517)\) that have received their bachelor’s degree and non-AA transfer students \((n=236)\) that have received their bachelor’s degree. The Bonferroni method was used to test this hypothesis. The level of significance used in testing the hypothesis was .01.
Graduation GPA, Admission degree, and Gender

Hypothesis 2: There is no statistically significant difference in the overall graduation GPA between transfer degree status (AA or No AA) when gender is considered.

For hypothesis two, a two-way ANOVA was conducted to evaluate the impact of the independent variables, admission degree (AA and non-AA transfer students) and gender with the dependent variable of graduation GPA. The frequency and percent of students who have graduated broken down by gender and admission degree is presented in Table 1. Of the students who graduated with a bachelor’s degree, women represented the majority of students admitted both with and without an AA degree. Ten students who did not report gender were excluded from the data analysis. The Bonferroni method was used for this analysis. The level of significance in testing this hypothesis was .01.

Table 1
Frequency of Graduates by Admission Degree by Gender

<table>
<thead>
<tr>
<th>Gender</th>
<th>AA Degree</th>
<th>%</th>
<th>Non-AA</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>906</td>
<td>35.2</td>
<td>147</td>
<td>30.2</td>
</tr>
<tr>
<td>Male</td>
<td>609</td>
<td>32.8</td>
<td>89</td>
<td>25.1</td>
</tr>
</tbody>
</table>

Graduation GPA, Admission degree, and Ethnicity

Hypothesis 3: There is no statistically significant difference in the overall graduation GPA
For hypothesis three, a two-way ANOVA was used to evaluate the impact of the independent variable admission degree and the independent variable of ethnic group upon the dependent variable graduation GPA. Because of the small sample size in some ethnic groups, data for the groups were collapsed into three groups: minority, white, and ethnic group not reported. The frequency and percent of students who graduated broken down by ethnicity is presented in Table 2. Whites represented the majority of students admitted with (34.8%) an AA degree that have graduated and the smallest percentage of students who were admitted without an AA degree (26.3%) that have graduated. The Bonferroni method was used for this analysis, the level of significance in testing this hypothesis was .01.

Table 2

Frequency of Graduates by Admission Degree and Ethnicity

<table>
<thead>
<tr>
<th>Ethnic Group</th>
<th>AA Degree</th>
<th>% AA Graduated</th>
<th>Non AA Degree</th>
<th>% No-AA Graduated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minority</td>
<td>388</td>
<td>32.9</td>
<td>64</td>
<td>30.8</td>
</tr>
<tr>
<td>White</td>
<td>1027</td>
<td>34.8</td>
<td>151</td>
<td>26.3</td>
</tr>
<tr>
<td>Ethnicity not reported</td>
<td>102</td>
<td>33.3</td>
<td>21</td>
<td>33.3</td>
</tr>
</tbody>
</table>
Academic Standing and Admission Degree

Hypothesis 4: There is no statistically significant difference between transfer degree status (AA or no-AA) and the likelihood a student will be placed on academic probation, exclusion or disqualification.

For hypothesis four, a chi-square test of association was used to determine if there was a statistically significant difference between AA and non-AA transfer students and the proportion of students on academic probation. The sample size for students in this data set who have been placed on academic probation is as follows: AA group ($n = 337$) and the non-AA group ($n = 52$). The Bonferroni method was used for this analysis, the level of significance used in testing this hypothesis was .025.

Academic Standing, Admission Degree and Gender

Hypothesis 5: There is no statistically significant difference between transfer degree status (AA or no-AA) and the likelihood students will be placed on academic probation, exclusion or disqualification as a determinant of the student’s gender.

For hypothesis five, a chi-square test of association was conducted to determine if there was a statistically significant difference between AA and non-AA transfer students by gender and academic probation rates. Table 3 shows that of the students who have been placed on academic probation males represented the majority of students admitted both with (4.2%) and without (3.2%) an AA degree. Ten students were deleted from the data because they did not report their gender. Because SPSS will only test two variables
when conducting a chi-square test, separate tests were conducted for the males and the females. The Bonferroni method was used for this analysis. The level of significance used in testing this hypothesis was .01.

Table 3
Probationary Students by Admission Degree and Gender

<table>
<thead>
<tr>
<th>Gender</th>
<th>AA Degree</th>
<th>% of total AA admits</th>
<th>Non-AA</th>
<th>% of total non-AA admits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>152</td>
<td>5.0</td>
<td>25</td>
<td>.8</td>
</tr>
<tr>
<td>Male</td>
<td>185</td>
<td>48.4</td>
<td>27</td>
<td>1.2</td>
</tr>
</tbody>
</table>

Academic Standing, Admission Degree, and Gender

Hypothesis 6: There is no statistically significant difference between transfer degree status (AA or no-AA) and the likelihood a student will be placed on academic probation, exclusion or disqualification as a determinant of the student’s ethnicity.

A chi-square test of association was conducted for hypothesis six to determine if there was a statistically significant difference between AA and non-AA transfer students, ethnicity and the likelihood students will be placed on academic probation, disqualification, or exclusion. Table 4 indicates the different ethnic groups included in the data and exhibits how many students in each group have been placed on academic probation. White students represented the majority of students when admitted both with (4.3%) and without (4.3%) an AA degree. Because SPSS can only test two variables with a chi-square test, separate tests were conducted for white students, minority
students. Because the sample size of students who did not report ethnicity was less than 5, the group was eliminated from the sample. The Bonferroni method was used for this analysis, the level of significance used in testing this hypothesis was .01.

Table 4

Probationary Students by Admission Degree and Ethnicity

<table>
<thead>
<tr>
<th>Ethnic Group</th>
<th>AA Degree</th>
<th>%</th>
<th>Non AA Degree</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>189</td>
<td>56.1</td>
<td>36</td>
<td>69.2</td>
</tr>
<tr>
<td>Minority</td>
<td>126</td>
<td>37.4</td>
<td>13</td>
<td>25</td>
</tr>
<tr>
<td>Gender not Reported</td>
<td>22</td>
<td>6.5</td>
<td>3</td>
<td>5.8</td>
</tr>
</tbody>
</table>

Student Persistence and Admission Degree

Hypothesis 7: There is no statistically significant difference between students’ admission degree (AA/no AA) and student persistence.

A chi-square test of association was again used to test hypothesis seven to determine if there was a statistically significant difference between students who were admitted with an AA degree and have graduated or are still enrolled \( (n = 3342) \) or admitted with no-AA degree \( (n = 548) \) and have graduated or are still enrolled (student persistence). The Bonferroni method was used for this analysis the level of significance used in testing this hypothesis was .01.
Student Persistence, Admission Degree and Gender

Hypothesis 8: There is no statistically significant difference between students’ admission degree (AA/no AA) and student persistence as a determinant of the student’s gender.

For hypothesis eight, a chi-square test of association was used to determine if there was a statistically significant difference between students who were admitted with an AA degree or no AA degree, the rates of students who have graduated or are still enrolled (student persistence) and gender. Table 5 indicates that a larger percentage of females graduated or were still enrolled in the summer 2004 semester regardless of whether they were admitted with (45.2%) or without (38.6%) an AA degree. Because SPSS will only test two variables using a chi-square test, separate tests were conducted for the male group and the female group. Ten students did not report gender. They were excluded from the data analysis. The Bonferroni method was used for this analysis. The level of significance used in testing this hypothesis was .01.

Table 5

Students who Persisted by Admission Degree and Gender

<table>
<thead>
<tr>
<th>Gender</th>
<th>AA Degree</th>
<th>%</th>
<th>Non-AA</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>2004</td>
<td>45.2</td>
<td>325</td>
<td>38.6</td>
</tr>
<tr>
<td>Male</td>
<td>1334</td>
<td>30.1</td>
<td>221</td>
<td>26.2</td>
</tr>
</tbody>
</table>
Student Persistence, Admission Degree and Ethnicity

Hypothesis 9: There is no statistically significant difference between students’ admission degree (AA/no AA) and student persistence as a determinant of the student’s ethnicity.

For the final hypothesis, a chi-square test of association was used to determine if there was an association between students who were admitted with an AA degree or no AA degree, and the rates of student persistence by ethnicity. Table 6 shows that of the students who persisted, White students represented the majority of students when admitted both with (67.6%) and without (67.2%) an AA degree. Because SPSS can only test two variables with the chi-square test, separate tests were conducted for white students, minority students, and students who did not report their ethnicity. The Bonferroni method was used for this analysis, the level of significance used in testing this hypothesis was .01.

Table 6

Students who Persisted by Admission Degree and Gender

<table>
<thead>
<tr>
<th>Ethnic Group</th>
<th>AA Degree</th>
<th>% of AA Students</th>
<th>Non AA Degree</th>
<th>% of No-AA Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minority</td>
<td>856</td>
<td>25.6</td>
<td>137</td>
<td>25</td>
</tr>
<tr>
<td>White</td>
<td>2258</td>
<td>67.6</td>
<td>368</td>
<td>67.2</td>
</tr>
<tr>
<td>Not Reported</td>
<td>228</td>
<td>6.8</td>
<td>43</td>
<td>7.8</td>
</tr>
</tbody>
</table>
Summary

This chapter has described the methods and procedures used to gather and analyze the data in this study. The population of this study consisted of all transfer students admitted to the University of Central Florida (n = 5283) in the 2001-2002 academic year excluding second bachelor’s degree seeking students. The variables used in this study were AA/no-AA degree; graduation GPA; whether the student had been on probation, disqualified or excluded from the university; graduation/still enrolled; gender; and ethnicity. Student success was determined by the percentage of students that have graduated with their bachelor’s degree or have remained enrolled in classes at the university.
CHAPTER FOUR
ANALYSIS OF DATA

Introduction

The purpose of this study was to examine the possible association between students’ earning an Associate of Arts degree (AA) and success at an upper level institution. In addition, gender and ethnicity were also examined to determine if there was an association between either of these variables, university admission degree (AA/No AA), and student success.

The population for this study consisted of all transfer students attending the University of Central Florida in the 2001-2002 academic year. The sample used in this study contained data for all transfer students admitted to the UCF during the 2001-2002 academic year ($N = 5408$). One hundred and twenty-five students were eliminated from the population because they previously earned a bachelor’s degree. The remaining data ($N = 5283$) were examined to determine if there was a mean difference in graduation GPA between AA/non-AA students and as a function of admission degree (AA/no AA), gender, and ethnicity. The samples were also examined to determine if there was an association between transfer degree status (AA/non-AA) and the likelihood a student was placed on academic probation, disqualification, or exclusion. It was again examined to determine if there is an association between transfer degree status and student persistence.
Overall Graduation GPA and Transfer Degree Status

Hypothesis 1: There is no statistically significant difference in overall graduation GPA between transfer degree status (AA or No AA).

A one-way analysis of variance (ANOVA) was conducted to evaluate the relationship between university admission degree and graduation GPA. The use of a one-way ANOVA assumes that the dependent variable (graduation GPA) is normally distributed for the populations. A review of boxplots indicated that the dependent variable, graduation GPA was normally distributed for the population. The use of ANOVA also assumes that the variances of the dependent variable are the same for all populations and that the sample represents a random sample of the population and the scores on the test variable are independent of each other. A Levene’s test of equality of error variances was conducted to determine if the variances are equal. The results indicated that the significance value exceeded .05 (p = .051) suggesting that the variances are equal and the assumption is justified. A review of residual plots indicated independence.

The independent variable, admission degree, included 2 levels: AA degree, and no-AA degree. The dependent variable was graduation GPA. The ANOVA was significant, F (1, 1751) = 22.097, p = .000. The strength of the relationship between admission degree and graduation GPA, as assessed by $\eta^2$ (Eta squared or effect size), was weak, with admission degree accounting for 1.2% of the variable. Post hoc comparisons were not computed because there were fewer than three levels of the independent
variable. The null hypothesis is rejected. There was a statistically significant difference in graduation GPA between AA and non-AA transfer students.

Although an ANCOVA could not be conducted to account for possible error due to admission GPA, it is still important to examine this data. The mean GPA of students entering the university without an AA degree was 3.080 (SD .4760) while the mean graduation GPA for that group was 3.261 (SD .372). The mean overall GPA for these students increased .181 while they were attending the upper level institution. The students admitted to the university with an AA degree increased their mean overall GPA from 2.967 (SD .479) at admission to 3.129 (SD .407) at graduation. This is an increase of .162. Overall, the mean GPA for the group admitted without AA degree was higher at admission and at graduation than the mean overall GPA for the group admitted with an AA degree. The difference in admission GPA, coupled with the large sample size, could possibly account for the significant results indicated by the ANOVA. Descriptive statistics are noted in Table 7.

Table 7
Admission/Graduation GPA Comparison

<table>
<thead>
<tr>
<th>Admit degree</th>
<th>M Admission GPA</th>
<th>SD Admission GPA</th>
<th>M Graduation GPA</th>
<th>SD Graduation GPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>AA Degree</td>
<td>2.967</td>
<td>.479</td>
<td>3.129</td>
<td>.407</td>
</tr>
<tr>
<td>No-AA Degree</td>
<td>3.080</td>
<td>.476</td>
<td>3.261</td>
<td>.372</td>
</tr>
</tbody>
</table>
Overall Graduation GPA, Transfer Degree Status and Gender

Hypothesis 2: There is no statistically significant difference in the overall graduation GPA between transfer students who do not have an AA degree and transfer students who have an AA degree and the student’s gender.

Hypothesis two examined whether the main effects of gender and admissions degree interact with the dependent variable of graduation GPA. A two factor ANOVA was conducted to evaluate the effects of gender (2 levels: male and female) and admissions degree (2 levels: AA and no-AA) on graduation GPA. Based on Levene’s test of equality of variances, the variances were assumed to be homogenous ($p = .05$). A review of residual plots indicated independence. The Kolmogorov-Smirnov ($p = .000$) and Shapiro-Wilks ($p = .000$) tests of normality indicated non-normality. The effect of violating the assumption of normality with a two-way ANOVA is an increase in the Type I error rate with a possible increase in the Type II error rate. The effect of the violation is small for balanced designs. However, with an unbalanced design such as this, the effect of the violation increases. Conversely, the large $N$ included in this study could decrease the effect of the violation.

The ANOVA indicated no significant interaction between admission degree and gender, $F(1, 1747) = .028, p = .867$, partial $\eta^2 = .000$, but significant main effects for admission degree, $F(1, 1747) = 20.149, p < .01$, partial $\eta^2 = .011$, and gender, $F(1, 1747) = 47.910, p < .01$, partial $\eta^2 = .027$.

The interaction between admission degree and gender did not impact the graduation GPA of the students in this study. However, admission degree did have a
statistically significant impact on the graduation GPA of the students in this study. Students admitted without an AA degree had a higher mean graduation GPA ($M = 3.26$) than students admitted with an AA degree ($M = 3.12$). Gender also had a statistically significant impact on graduation GPA. Women earned a higher mean graduation GPA ($M = 3.27$) than men ($M = 3.07$).

One purpose of this study was to determine if there was a statistically significant difference in graduation GPA for students admitted with and without an AA degree. A second purpose was to determine if gender had an influence on these variables. Follow up analysis for the main effect for admission degree and for the main effect for gender could not be conducted because there were fewer than three levels of the independent variables. The means and standard deviations for graduation GPA are presented in Table 8. Overall, females in both the AA and non-AA group had a higher mean GPA than males, with females admitted without an AA degree ($M = 3.3367$) having the highest mean GPA.

Table 8
Descriptive Statistics Graduation GPA/Admission Degree/Gender

<table>
<thead>
<tr>
<th>Admit degree</th>
<th>Gender</th>
<th>$n$</th>
<th>$M$</th>
<th>$SD$</th>
</tr>
</thead>
<tbody>
<tr>
<td>AA</td>
<td>F</td>
<td>906</td>
<td>3.2051</td>
<td>.38930</td>
</tr>
<tr>
<td>AA</td>
<td>M</td>
<td>609</td>
<td>3.0142</td>
<td>.40782</td>
</tr>
<tr>
<td>Non-AA</td>
<td>F</td>
<td>147</td>
<td>3.3367</td>
<td>.34449</td>
</tr>
<tr>
<td>Non-AA</td>
<td>M</td>
<td>89</td>
<td>3.1363</td>
<td>.38393</td>
</tr>
</tbody>
</table>
Overall Graduation GPA, Transfer Degree Status and Ethnicity

Hypothesis 3: There is no statistically significant difference in the overall graduation GPA between transfer degree status (AA or No AA) when ethnicity is considered.

Hypothesis three examined whether the main effects of ethnicity and admissions degree interact with the dependent variable of graduation GPA. A two factor ANOVA was conducted to evaluate the effects of ethnicity (3 levels: minority, white, and ethnicity not reported) and admissions degree (2 levels: AA and no-AA) on graduation GPA. Based on Levene’s test of equality of variances, the variances were assumed to be homogenous ($p = .05$). A review of residual plots indicated independence. The Kolmogorov-Smirnov ($p = .000$) and Shapiro-Wilks ($p = .000$) tests of normality indicated non-normality. The effect of violating the assumption of normality with a two-way ANOVA is an increase in the Type I error rate with a possible increase in the Type II error rate. The effect of the violation is small for balanced designs. However, with an unbalanced design such as this, the effect of the violation increases. Conversely, the large $N$ included in this study could decrease the effect of the violation.

The ANOVA indicated no significant interaction between admission degree and ethnicity, $F (2, 1747) = .258, p = .772$, partial $\eta^2 = .000$. However, there was a significant main effect for admission degree, $F (1, 1747) = 15.475, p < .000$, partial $\eta^2 = .009$, and no significant main effect for ethnicity, $F (2, 1747) = 2.121, p < .120$, partial $\eta^2 = .002$. The ANOVA did not indicate a statistically significant difference in the graduation GPA between AA and non-AA transfer students and gender. Ethnicity did
have a statistically significant impact on graduation GPA. Admission degree by itself did have a statistically significant impact on the graduation GPA of the students in this study. Students admitted without an AA degree had a higher mean graduation GPA ($M = 3.26$) than students admitted with an AA degree ($M = 3.12$). The means and standard deviations for graduation GPA are presented in Table 9.

One purpose of this study was to determine if there was a statistically significant difference in graduation GPA for students admitted with and without an AA degree. A second purpose was to determine if ethnicity had an influence on these variables. Follow up analysis to the main effect for admission degree could not be conducted because there are fewer than three levels of the independent variable.

Table 9

Descriptive Statistics for Graduation GPA/Admission Degree/Ethnicity

<table>
<thead>
<tr>
<th>Admit degree</th>
<th>Ethnic Group</th>
<th>n</th>
<th>$M$</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>AA</td>
<td>Minority</td>
<td>388</td>
<td>3.0707</td>
<td>.40804</td>
</tr>
<tr>
<td>AA</td>
<td>White</td>
<td>1027</td>
<td>3.1521</td>
<td>.40694</td>
</tr>
<tr>
<td>AA</td>
<td>Not reported</td>
<td>102</td>
<td>3.1123</td>
<td>.39055</td>
</tr>
<tr>
<td>No-AA</td>
<td>Minority</td>
<td>64</td>
<td>3.2220</td>
<td>.32252</td>
</tr>
<tr>
<td>No-AA</td>
<td>White</td>
<td>151</td>
<td>3.2728</td>
<td>.38771</td>
</tr>
<tr>
<td>No-AA</td>
<td>Not reported</td>
<td>21</td>
<td>3.2611</td>
<td>.40483</td>
</tr>
</tbody>
</table>
Transfer Degree Status and Academic Probation Status

Hypothesis 4: There is no statistically significant difference between transfer degree status (AA or no-AA) and the likelihood a student will be placed on academic probation, exclusion or disqualification.

Hypothesis four examined whether there is an association between admission degree and the likelihood a student will be placed on academic probation, exclusion, or disqualification. The chi-square test of association indicated that there was no association between admissions degree and the likelihood a student will be placed on academic probation, disqualification, or exclusion, $\chi^2 (1, N = 5283) = 2.186$, $p = .139$ $\Phi = \text{n} .139$. The null hypothesis was not rejected. Students are equally as likely to be placed on probation, disqualification, or exclusion regardless of admission degree. The crosstabulations are presented in Table 10.
Table 10

Crosstabulation for Admission Degree and Academic Standing

<table>
<thead>
<tr>
<th>Academic Standing</th>
<th>Admit Degree</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AA</td>
<td>No-AA</td>
</tr>
<tr>
<td>No Probation,</td>
<td>4100</td>
<td>794</td>
</tr>
<tr>
<td>Disqualification,</td>
<td>Expected</td>
<td></td>
</tr>
<tr>
<td>or Exclusion</td>
<td>Count</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4110.3</td>
<td>783.7</td>
</tr>
<tr>
<td></td>
<td>% of Total</td>
<td></td>
</tr>
<tr>
<td></td>
<td>77.6%</td>
<td>15.0%</td>
</tr>
<tr>
<td></td>
<td>Std. Residual</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-.2</td>
<td>.4</td>
</tr>
<tr>
<td>Probation</td>
<td>Count</td>
<td></td>
</tr>
<tr>
<td>Disqualified,</td>
<td>337</td>
<td>52</td>
</tr>
<tr>
<td>or Excluded</td>
<td>Expected</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Count</td>
<td></td>
</tr>
<tr>
<td></td>
<td>326.7</td>
<td>62.3</td>
</tr>
<tr>
<td></td>
<td>% of Total</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6.4%</td>
<td>1.0%</td>
</tr>
<tr>
<td></td>
<td>Std. Residual</td>
<td></td>
</tr>
<tr>
<td></td>
<td>.6</td>
<td>-1.3</td>
</tr>
<tr>
<td>Total</td>
<td>Count</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4437</td>
<td>846</td>
</tr>
<tr>
<td></td>
<td>Expected</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Count</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4437.0</td>
<td>846.0</td>
</tr>
<tr>
<td></td>
<td>% of Total</td>
<td></td>
</tr>
<tr>
<td></td>
<td>84.0%</td>
<td>16.0%</td>
</tr>
</tbody>
</table>

Transfer Degree Status, Academic Probation Status and Gender

Hypothesis 5: There is no statistically significant difference between transfer degree status (AA or no-AA) and the likelihood students will be placed on academic probation, exclusion or disqualification as a determinant of the student’s gender.

Hypothesis five also examined whether there was an association between admission degree and the likelihood a student will be placed on academic probation, disqualification, or exclusion, but also looked at gender as a possible variable. Because SPSS can only test two variables using the chi-square test of association, separate tests
were conducted for the males and females. The chi-square test of association indicated that there was no relationship between the likelihood a student will be placed on probation, disqualification, or exclusion and admission degree for females, \( \chi^2 (1, n = 3062) = .445, p = .505, \Phi = -.012 \). The test also indicated no association between the likelihood a student will be placed on academic probation, disqualification, or exclusion and admission degree for males, \( \chi^2 (1, n = 2211) = 1.918, p = .166, \Phi = -.029 \). The null hypothesis was not rejected. The chi-square test of association did not indicate an association between gender, admission degree and the likelihood a student will be placed on academic probation, disqualification, or exclusion. The crosstabulations are listed in Table 11 for females and Table 12 for males.
Table 11

Crosstabulation for Admission Degree and Academic Status (Women only)

<table>
<thead>
<tr>
<th>Admission degree</th>
<th>Academic Standing</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No Probation</td>
<td>Probation</td>
<td>Total</td>
<td></td>
</tr>
<tr>
<td>AA</td>
<td>Count</td>
<td>2423</td>
<td>152</td>
<td>2575</td>
</tr>
<tr>
<td></td>
<td>Expected Count</td>
<td>2426.2</td>
<td>148.8</td>
<td>2575.0</td>
</tr>
<tr>
<td></td>
<td>% of Total</td>
<td>79.1%</td>
<td>5.0%</td>
<td>84.1%</td>
</tr>
<tr>
<td></td>
<td>Std. Residual</td>
<td>-.1</td>
<td>.3</td>
<td></td>
</tr>
<tr>
<td>No AA</td>
<td>Count</td>
<td>462</td>
<td>25</td>
<td>487</td>
</tr>
<tr>
<td></td>
<td>Expected Count</td>
<td>458.8</td>
<td>28.2</td>
<td>487.0</td>
</tr>
<tr>
<td></td>
<td>% of Total</td>
<td>15.1%</td>
<td>.8%</td>
<td>15.9%</td>
</tr>
<tr>
<td></td>
<td>Std. Residual</td>
<td>.1</td>
<td>-.6</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>Count</td>
<td>2885</td>
<td>177</td>
<td>3062</td>
</tr>
<tr>
<td></td>
<td>Expected Count</td>
<td>2885.0</td>
<td>177.0</td>
<td>3062.0</td>
</tr>
<tr>
<td></td>
<td>% of Total</td>
<td>94.2%</td>
<td>5.8%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>
### Table 12

Crosstabulation for Admission Degree and Academic Status (Men only)

<table>
<thead>
<tr>
<th>Admission degree</th>
<th>Academic Standing</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No Probation</td>
<td>Probation</td>
<td>Total</td>
<td></td>
</tr>
<tr>
<td>AA</td>
<td>Count</td>
<td>1671</td>
<td>185</td>
<td>1856</td>
</tr>
<tr>
<td></td>
<td>Expected Count</td>
<td>1678.0</td>
<td>178.0</td>
<td>1856.0</td>
</tr>
<tr>
<td></td>
<td>% of Total</td>
<td>75.6%</td>
<td>8.4%</td>
<td>83.9%</td>
</tr>
<tr>
<td></td>
<td>Std. Residual</td>
<td>-.2</td>
<td>.5</td>
<td></td>
</tr>
<tr>
<td>No AA</td>
<td>Count</td>
<td>328</td>
<td>27</td>
<td>355</td>
</tr>
<tr>
<td></td>
<td>Expected Count</td>
<td>321.0</td>
<td>34.0</td>
<td>355.0</td>
</tr>
<tr>
<td></td>
<td>% of Total</td>
<td>14.8%</td>
<td>1.2%</td>
<td>16.1%</td>
</tr>
<tr>
<td></td>
<td>Std. Residual</td>
<td>.4</td>
<td>-1.2</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>Count</td>
<td>1999</td>
<td>212</td>
<td>2211</td>
</tr>
<tr>
<td></td>
<td>Expected Count</td>
<td>1999.0</td>
<td>212.0</td>
<td>2211.0</td>
</tr>
<tr>
<td></td>
<td>% of Total</td>
<td>90.4%</td>
<td>9.6%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

**Transfer Degree Status, Academic Probation Status and Ethnicity**

Hypothesis 6: There is no statistically significant difference between transfer degree status (AA or no-AA) and the likelihood a student will be placed on academic probation, exclusion or disqualification as a determinant of the student’s ethnicity.

Hypothesis six examined whether there was an association between admission degree, ethnicity and the likelihood a student will be placed on academic probation. As with hypothesis five, separate chi-square tests were conducted for minority students,
white students. Students who did not report their ethnicity were eliminated from this test because there were too few per cell.

The chi-square test of association conducted on the white group indicated that there was no association between a admission degree and the likelihood a student will be placed on academic probation, disqualification, or exclusion, $\chi^2 (1, n = 3525) = .017, p = .896, \Phi = -.002$. Crosstabulations are noted in table 13.

Table 13

Crosstabulation for Admission Degree and Academic Status (Whites only)

<table>
<thead>
<tr>
<th>Admission degree</th>
<th>Academic Standing</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No Probation</td>
<td>Probation</td>
<td>Total</td>
<td></td>
</tr>
<tr>
<td>AA</td>
<td>Count</td>
<td>2761</td>
<td>189</td>
<td>2950</td>
</tr>
<tr>
<td></td>
<td>Expected Count</td>
<td>2761.7</td>
<td>188.3</td>
<td>2950.0</td>
</tr>
<tr>
<td></td>
<td>% of Total</td>
<td>78.3%</td>
<td>5.4%</td>
<td>83.7%</td>
</tr>
<tr>
<td></td>
<td>Std. Residual</td>
<td>.0</td>
<td>.1</td>
<td></td>
</tr>
<tr>
<td>No AA</td>
<td>Count</td>
<td>539</td>
<td>36</td>
<td>575</td>
</tr>
<tr>
<td></td>
<td>Expected Count</td>
<td>538.3</td>
<td>36.7</td>
<td>575.0</td>
</tr>
<tr>
<td></td>
<td>% of Total</td>
<td>15.3%</td>
<td>1.0%</td>
<td>16.3%</td>
</tr>
<tr>
<td></td>
<td>Std. Residual</td>
<td>.0</td>
<td>-.1</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>Count</td>
<td>3300</td>
<td>225</td>
<td>3525</td>
</tr>
<tr>
<td></td>
<td>Expected Count</td>
<td>3300.0</td>
<td>225.0</td>
<td>3525.0</td>
</tr>
<tr>
<td></td>
<td>% of Total</td>
<td>93.6%</td>
<td>6.4%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Tests for the minority group also indicated no association between a student’s admissions degree and the likelihood a student will be placed on academic probation,
disqualification, or exclusion, $\chi^2 (1, n = 1389) = 3.835, p = .059, \Phi = -.053$

Crosstabulations are exhibited in Table 14.

Table 14

Crosstabulation for Admission Degree and Academic Status (Minorities only)

<table>
<thead>
<tr>
<th>Admission degree</th>
<th>Academic Standing</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No Probation</td>
<td>Probation</td>
<td>Total</td>
<td></td>
</tr>
<tr>
<td>AA</td>
<td>Count</td>
<td>1055</td>
<td>126</td>
<td>1181</td>
</tr>
<tr>
<td></td>
<td>Expected Count</td>
<td>1062.8</td>
<td>118.2</td>
<td>1181.0</td>
</tr>
<tr>
<td></td>
<td>% of Total</td>
<td>76.0%</td>
<td>9.1%</td>
<td>85.0%</td>
</tr>
<tr>
<td></td>
<td>Std. Residual</td>
<td>-.2</td>
<td>.7</td>
<td></td>
</tr>
<tr>
<td>No AA</td>
<td>Count</td>
<td>195</td>
<td>13</td>
<td>208</td>
</tr>
<tr>
<td></td>
<td>Expected Count</td>
<td>187.2</td>
<td>20.8</td>
<td>208.0</td>
</tr>
<tr>
<td></td>
<td>% of Total</td>
<td>14.0%</td>
<td>.9%</td>
<td>15.0%</td>
</tr>
<tr>
<td></td>
<td>Std. Residual</td>
<td>.6</td>
<td>-1.7</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>Count</td>
<td>1250</td>
<td>139</td>
<td>1389</td>
</tr>
<tr>
<td></td>
<td>Expected Count</td>
<td>1250.0</td>
<td>139.0</td>
<td>1389.0</td>
</tr>
<tr>
<td></td>
<td>% of Total</td>
<td>90.0%</td>
<td>10.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

The data indicates that for the students in this sample ethnicity has no impact on the likelihood a student will be placed on academic probation, disqualification, or exclusion based on admission degree.

Transfer Degree Status and Student Persistence

Hypothesis 7: There is no statistically significant difference between students’ admission degree (AA/no AA) and student persistence.
Hypothesis seven tested whether there was an association between the student’s admission degree and the likelihood students were enrolled or were graduated as of the summer 2004 semester (student persistence). A chi-square test of association indicated that there was an association between these variables, $\chi^2(1, n = 5283) = 40.700, p = .000$, $\Phi = -.088$. Nominal directional measure tests were conducted to determine the strength of the association. The Uncertainty Coefficient (.008) indicated a weak relationship between a student’s admission degree and the likelihood a student was graduated or was enrolled as of the summer 2004 semester. The null hypothesis is rejected. There is a statistically significant relationship between admission degree and student persistence. Students admitted with an AA degree were more likely to persist (63.3%) than students admitted without a degree (10.4%). Crosstabulations are exhibited in Table 15.
Table 15
Crosstabulation for Admission Degree and Student Persistence

| Admission Degree | Persistence                  | | |
|------------------|-----------------------------|---|---|---|
|                  | Not Enrolled or Graduated   | Enrolled or Graduated | Total |
| AA               | Count                       | 1095 | 3342 | 4437 |
|                  | Expected Count              | 1169.9 | 3267.1 | 4437.0 |
|                  | % of Total                  | 20.7% | 63.3% | 84.0% |
|                  | Std. Residual               | -2.2  | 1.3   |
| No AA            | Count                       | 298  | 548  | 846  |
|                  | Expected Count              | 223.1 | 622.9 | 846.0 |
|                  | % of Total                  | 5.6%  | 10.4% | 16.0% |
|                  | Std. Residual               | 5.0   | -3.0  |
| Total            | Count                       | 1393 | 3890 | 5283 |
|                  | Expected Count              | 1393.0 | 3890.0 | 5283.0 |
|                  | % of Total                  | 26.4% | 73.6% | 100.0% |

Transfer Degree Status, Student Persistence and Gender

Hypothesis 8: There is no statistically significant difference between student admission degree (AA/no AA) and student persistence as a determinant of the student’s gender.

Hypothesis eight examined whether there was an association between admission degree and the likelihood students were still enrolled or graduated as of the summer 2004 semester (student persistence), and gender. Since SPSS only tests two variables for the chi-square test of association, separate tests were conducted for males and females. The
test indicated that for females there was an association between admission degree and the likelihood students were enrolled or were graduated as of the summer 2004 semester, $\chi^2(1, n = 3062) = 27.664, p = .000, \Phi = -.095$. Nominal directional measure tests were conducted to determine the strength of the association. The Uncertainty Coefficient (.009) indicated that the relationship between admission degree and the likelihood a student will be placed on academic probation was weak for females. The null hypothesis was rejected for females. Females admitted with an AA degree were more likely to persist (65.4%) than females admitted without an AA degree (10.6%). Crosstabulations for females are listed exhibited in table 16.
Table 16

Crosstabulation for Admission Degree and Student Persistence (Women)

<table>
<thead>
<tr>
<th>Admission Degree</th>
<th>Persistence</th>
<th>Not Enrolled or Graduated</th>
<th>Enrolled or Graduated</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Count</td>
<td>571</td>
<td>2004</td>
<td>2575</td>
</tr>
<tr>
<td>AA</td>
<td>Expected Count</td>
<td>616.4</td>
<td>1958.6</td>
<td>2575.0</td>
</tr>
<tr>
<td></td>
<td>% of Total</td>
<td>18.6%</td>
<td>65.4%</td>
<td>84.1%</td>
</tr>
<tr>
<td></td>
<td>Std. Residual</td>
<td>-1.8</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>No AA</td>
<td>Count</td>
<td>162</td>
<td>325</td>
<td>487</td>
</tr>
<tr>
<td></td>
<td>Expected Count</td>
<td>116.6</td>
<td>370.4</td>
<td>487.0</td>
</tr>
<tr>
<td></td>
<td>% of Total</td>
<td>5.3%</td>
<td>10.6%</td>
<td>15.9%</td>
</tr>
<tr>
<td></td>
<td>Std. Residual</td>
<td>4.2</td>
<td>-2.4</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>Count</td>
<td>733</td>
<td>2329</td>
<td>3062</td>
</tr>
<tr>
<td></td>
<td>Expected Count</td>
<td>733.0</td>
<td>2329.0</td>
<td>3062.0</td>
</tr>
<tr>
<td></td>
<td>% of Total</td>
<td>23.9%</td>
<td>76.1%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

A chi-square test of association also indicated that for males there was an association between admission degree and the likelihood males were enrolled or were graduated as of the summer 2004 semester, \( \chi^2 (1, n = 2211) = 13.220, p = .000, Phi = -.077 \). Nominal directional measure tests were conducted to determine the strength of the association. The Uncertainty Coefficient (.005) indicated that the relationship between admission degree and the likelihood a student will be placed on academic probation was weak for males. Crosstabulations for males are listed exhibited in table 17.
The null hypothesis was rejected for males. There is a statistically significant relationship between admission degree and the likelihood students were graduated or were enrolled in the summer 2004 semester. Males admitted with an AA degree were more likely to persist (60.3%) than males admitted without an AA degree (10%).

Table 17
Crosstabulation for Admission Degree and Student Persistence (Men)

<table>
<thead>
<tr>
<th>Admission Degree</th>
<th>Persistence</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not Enrolled or Graduated</td>
<td>Enrolled or Graduated</td>
<td>Total</td>
<td></td>
</tr>
<tr>
<td>AA</td>
<td>Count</td>
<td>522</td>
<td>1334</td>
<td>1856</td>
</tr>
<tr>
<td></td>
<td>Expected Count</td>
<td>550.7</td>
<td>1305.3</td>
<td>1856.0</td>
</tr>
<tr>
<td></td>
<td>% of Total</td>
<td>23.6%</td>
<td>60.3%</td>
<td>83.9%</td>
</tr>
<tr>
<td></td>
<td>Std. Residual</td>
<td>-1.2</td>
<td>.8</td>
<td></td>
</tr>
<tr>
<td>No AA</td>
<td>Count</td>
<td>134</td>
<td>221</td>
<td>355</td>
</tr>
<tr>
<td></td>
<td>Expected Count</td>
<td>105.3</td>
<td>249.7</td>
<td>355.0</td>
</tr>
<tr>
<td></td>
<td>% of Total</td>
<td>6.1%</td>
<td>10.0%</td>
<td>16.1%</td>
</tr>
<tr>
<td></td>
<td>Std. Residual</td>
<td>2.8</td>
<td>-1.8</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>Count</td>
<td>656</td>
<td>1555</td>
<td>2211</td>
</tr>
<tr>
<td></td>
<td>Expected Count</td>
<td>656.0</td>
<td>1555.0</td>
<td>2211.0</td>
</tr>
<tr>
<td></td>
<td>% of Total</td>
<td>29.7%</td>
<td>70.3%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Transfer Degree Status, Student Persistence and Ethnicity

Hypothesis 9: There is no statistically significant difference between student admission degree (AA/no AA) and student persistence as a determinant of the student’s ethnicity.
Hypothesis nine examined whether there was an association between admission degree and the likelihood students were still enrolled or have graduated as of the summer 2004 semester (student persistence), but also looked at ethnicity as a possible variable. Since SPSS only tests two variables with the chi-square test of association variables, separate tests were conducted for minority students and white students. A chi-square test of association indicated that for minority students there was no statistically significant relationship between admission degree and the likelihood they were enrolled or were graduated as of the summer 2004 semester, $\chi^2 (1, n = 1389) = 4.967, p = .030, \Phi = -.060$. Crosstabulations for minority students are listed exhibited in table 18.
Table 18

Crosstabulation for Admission Degree and Student Persistence (Minority)

<table>
<thead>
<tr>
<th>Admission Degree</th>
<th>Persistence</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not Enrolled or Graduated</td>
<td>Enrolled or Graduated</td>
<td>Total</td>
<td></td>
</tr>
<tr>
<td>AA</td>
<td>Count</td>
<td>325</td>
<td>856</td>
<td>1181</td>
</tr>
<tr>
<td></td>
<td>Expected Count</td>
<td>338.4</td>
<td>842.6</td>
<td>1181.0</td>
</tr>
<tr>
<td></td>
<td>% of Total</td>
<td>23.4%</td>
<td>61.6%</td>
<td>85.0%</td>
</tr>
<tr>
<td></td>
<td>Std. Residual</td>
<td>-.7</td>
<td>.5</td>
<td></td>
</tr>
<tr>
<td>No AA</td>
<td>Count</td>
<td>73</td>
<td>135</td>
<td>208</td>
</tr>
<tr>
<td></td>
<td>Expected Count</td>
<td>59.6</td>
<td>148.4</td>
<td>208.0</td>
</tr>
<tr>
<td></td>
<td>% of Total</td>
<td>5.3%</td>
<td>9.7%</td>
<td>15.0%</td>
</tr>
<tr>
<td></td>
<td>Std. Residual</td>
<td>1.7</td>
<td>-1.1</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>Count</td>
<td>398</td>
<td>991</td>
<td>1389</td>
</tr>
<tr>
<td></td>
<td>Expected Count</td>
<td>398.0</td>
<td>991.0</td>
<td>1389.0</td>
</tr>
<tr>
<td></td>
<td>% of Total</td>
<td>28.7%</td>
<td>71.3%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

A chi-square test of association indicated that for white student there was a relationship between admission degree and the likelihood students were still enrolled or have graduated as of the summer 2004 semester, \( \chi^2 (1, n = 3525) = 37.719, p = .000 \), \( \Phi \) = -.103. Nominal directional measure tests were conducted to determine the strength of the association. The Uncertainty Coefficient (.010) indicated that the relationship between admission degree and the likelihood a student will be placed on academic probation was weak for white students. White students admitted with an AA degree
(64.1%) were more likely to graduate than white students admitted without an AA degree (10.5%). Crosstabulations for white students are listed exhibited in table 19.

Table 19
Crosstabulation for Admission Degree and Student Persistence (White)

<table>
<thead>
<tr>
<th>Admission Degree</th>
<th>Persistence</th>
<th>Not Enrolled or Graduated</th>
<th>Enrolled or Graduated</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>AA</td>
<td>Count</td>
<td>692</td>
<td>2258</td>
<td>2950</td>
</tr>
<tr>
<td></td>
<td>Expected Count</td>
<td>750.7</td>
<td>2199.3</td>
<td>2950.0</td>
</tr>
<tr>
<td></td>
<td>% of Total</td>
<td>19.6%</td>
<td>64.1%</td>
<td>83.7%</td>
</tr>
<tr>
<td></td>
<td>Std. Residual</td>
<td>-2.1</td>
<td>1.3</td>
<td></td>
</tr>
<tr>
<td>No AA</td>
<td>Count</td>
<td>205</td>
<td>370</td>
<td>575</td>
</tr>
<tr>
<td></td>
<td>Expected Count</td>
<td>146.3</td>
<td>428.7</td>
<td>575.0</td>
</tr>
<tr>
<td></td>
<td>% of Total</td>
<td>5.8%</td>
<td>10.5%</td>
<td>16.3%</td>
</tr>
<tr>
<td></td>
<td>Std. Residual</td>
<td>4.9</td>
<td>-2.8</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>Count</td>
<td>897</td>
<td>2628</td>
<td>3525</td>
</tr>
<tr>
<td></td>
<td>Expected Count</td>
<td>897.0</td>
<td>2628.0</td>
<td>3525.0</td>
</tr>
<tr>
<td></td>
<td>% of Total</td>
<td>25.4%</td>
<td>74.6%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Conclusion

This chapter presented an analysis of data for the nine hypotheses stated in Chapter Three. The first three hypotheses focused on differences in graduation GPA for students admitted to the university with and without an AA degree and added the variables of gender and ethnicity.
Hypotheses four through six examined whether there was an association between admission degree and the likelihood a student will be placed on academic probation, disqualification, or exclusion. The variables of gender and ethnicity were also examined for these three hypotheses.

Finally, hypotheses seven through nine examined if there was an association between transfer degree status and the likelihood a student was still enrolled or graduated in the summer 2004 semester (student persistence). A discussion of these findings will be presented in Chapter Five along with implications for the findings and suggestions for future research.
CHAPTER 5

FINDINGS AND RECOMMENDATIONS

Introduction

This study examined the success of students who transferred into the University of Central Florida with and without an AA degree in the 2001-2002 academic year. Of the 5283 students in the sample, 4618 (87.4%) of them transferred from a Florida public community college while only 665 (12.6%) students transferred from other institutions. Eighty-four percent (4437) of the sample transferred into the university with an AA degree while 16% (846) of students transferred without an AA degree. The students in the sample that transferred from other institutions transferred from a variety of institutions such as other Florida state universities, private schools, and from schools in other states.

Community colleges provide students with an educational institution that is close to their home and is a low cost option for obtaining the first two years of a bachelor’s degree. They also give students a second chance at obtaining an education even if they do not have a good academic record. The number of students attending community colleges and transferring to universities will likely continue to grow with more and more people attending college.

Florida has an articulation agreement in place that guarantees students with an AA degree from a Florida public college admission to a state university. The articulation
agreement provides a common course numbering system that makes it easier for students to transfer coursework between state institutions. The agreement also ensures that a Florida public AA degree will complete the general education requirements at an upper-level institution and that the upper-level institution will honor any grade forgiveness awarded by the community college. This provides students with poor GPAs a way to get admitted to a state university. Because the articulation agreement provides a guarantee to transfer students it is to the student’s advantage to earn the AA degree before transferring.

This study compares students who were admitted to the university with an AA degree with students who entered the university without an AA degree to determine if students who transferred with an AA degree were more successful in completing their bachelor’s degree. A variety of factors influencing transfer students were analyzed in the study including: (1) graduation GPA; (2) rates of probation, exclusion, and disqualification; and (3) whether students had graduated or were still enrolled in the summer 2004 semester (student persistence). The added variables of gender and ethnicity were also analyzed in the context of each of these factors.

**Previous Research**

In 1998 Fredrickson (as cited in Laanan, 2001) conducted a study of 4,700 students in the University of North Carolina system enrolled in transfer programs in community colleges and four-year institutions to determine the characteristics of transfer students. She found that the typical transfer student was female, worked part time, and
was 26 years old. A large number of the students in traditional transfer programs were younger while older students were usually in occupational programs. Only 12.1% of students enrolled in engineering programs were female while 83.3% of nursing students were female. Black students accounted for nearly 23% of business students but only 10.6% of engineering students.

Student Success

Most previous research focused on the success rates of transfer students compared to students who started college at a four-year institution (native students). In 2000, Carlan and Byxbe found that many transfer students did not perform as well as native students in their first semester of upper level coursework. However, by graduation, GPAs for transfer students were similar to those of native students. Additionally, when the authors compared the GPA of students who earned an AA degree to the GPA of students who did not earn an AA degree, the actual GPA of students who earned the degree showed a slight increase. However, when a regression analysis was conducted, no significance difference in academic performance was found when the influence of other variables was held constant. From this the authors determined, “efforts to require earning the AA degree seem void of merit” (Carlan & Byxbe, 2000, p. 6).

In 1993 a study was conducted at a Kentucky university to determine if students who completed an associates degree or had 60 or more credit hours (upper division transfers) would perform better at a four-year institution than students who transferred with fewer than 60 hours (lower division transfers). The authors compared
GPAs, graduation rates, and dismissal rates of upper division transfer students to lower division transfer students and native university students. The mean GPA of upper division transfer students (2.45) and the GPA of native university juniors (2.55) were very close. The difference in GPAs was not statistically significant. However, when the authors compared the GPAs of lower division transfers (2.13) to upper division transfer students (2.45), the difference was statistically significant (Best & Gehring, 1993).

When the three groups’ graduation rates were compared, the researchers found that the native university students had the highest graduation rate (60.4%). Forty percent of upper division transfers had graduated while only 30.9% of lower division transfers had graduated (Best & Gehring, 1993).

When the dismissal rates of the groups were compared, the authors found that the upper division transfer group had only a 7.6% dismissal rate while the lower division transfers had a 17.5% dismissal rate. The authors concluded that native students have a higher graduation rate than transfer students. However, of the transfer groups, upper division transfer students receive higher GPAs, have higher graduation rates, and lower dismissal rates than lower division transfers (Best & Gehring, 1993).

In 1993, Lee, Mackie-Lewis, and Marks conducted a study to investigate whether community college attendance affects persistence of transfer students as compared to native students. The researchers found that attendance at a community college and then transferring to a senior level institution does not affect student persistence. There was no significant difference in the graduation rates of native students and transfer students.
Ethnicity

In 2000, 29.3% of the 11,752,786 students attending public degree-granting institutions in the United States were minority students. At public two-year institutions minority students accounted for 34.6% of enrollment. However, this number dropped to 24.2% at public four-year institutions (National Center for Education Statistics, 2002).

In the spring 1994 and 1995 academic years, Laanan (1999) compared White and Non-White transfer students at a major research university. Non-White participants spent more time on campus participating in social activities, and they were more likely to meet with academic counselors on a regular basis and utilize the services at the university.

The White students in the study had a higher mean GPA at the community college (3.45 versus 2.27) and at the university (3.28 versus 3.04) than Non-White students. The authors determined that this was because white students reported more involvement with faculty and would more often seek help on class projects and writing assignments. Consequently, white students were less likely to have difficulty adjusting socially and did not feel insecure about making friends at the university (Laanan, 1999).

Gender

In the 1999-2000 academic year women earned 340,212 associate degrees while only 224,721 men earned associate degrees. During the same academic year, women earned 707,508 bachelor’s degrees while men earned only 530,367 degrees (National Center for Education Statistics, 2002).
In a study conducted in the late 1990’s, Surette (2001) found that men were more likely to transfer than women were by approximately six percentage points. Among transfers, there is only a small difference between men and women who complete the bachelor degree. The author discovered several reasons women do not transfer. Family responsibilities, proximity, and money play a part in women’s decision not to transfer. “Marital status and child-rearing responsibilities have larger negative effects on college attendance for women than for men, and on four-year attendance than on two-year attendance” (Surette, 2001, p. 161).

**Statement of the Problem**

The number of transfer students across the country continues to grow. Many students transfer from community colleges after completing the first two years of their bachelor’s degree coursework. These students plan to attend a four-year institution and prepare for transfer by completing general education requirements and pre-requisite courses for their major. They earn an Associate of Arts (AA) degree and then transfer to an upper-level institution to complete their degree. However, some students choose to transfer without earning a degree or before completing the first two years of coursework. The success rates of transfer students have often been compared to the success rates of first time in college students; however little research has been conducted comparing AA degree transfers to non-AA degree transfers.
Discussion

Admission Degree and Graduation GPA

A student’s graduation GPA can be very important to their future success. Many of today’s students’ attend graduate school after graduation. These programs can be competitive and many only admit applicants with the highest GPA. Hypothesis one examined admission degree and graduation GPA to determine if either group had a higher GPA at graduation.

Approximately one third of the sample had graduated at the time of the study and was included in the sample. A weak relationship between admission degree and graduation GPA was indicated. The mean graduation GPA for students admitted without an AA degree was slightly higher (3.2611) than the mean graduation GPA for students admitted with an AA degree (3.1286). This GPA difference could be attributed to the Florida articulation agreement that guarantees admission to a state university for students with a Florida public AA degree. Students without an AA degree are not guaranteed admissions and the GPA requirements for admissions are sometimes higher for this group. Since the data violated the assumptions for an ANCOVA, the possible effect of the entry GPA could not be controlled. However, the admission GPA of these students should nonetheless be examined. The mean GPA of students entering the university without an AA degree was 3.080 (SD .4760) while the mean graduation GPA for that group was 3.261 (SD .372). The mean overall GPA for these students increased .181 while they were attending the upper level institution. The students admitted to the
university with an AA degree increased their mean overall GPA from 2.967 (SD .479) at admission to 3.129 (SD .407) at graduation. This is an increase of .162. Overall, the mean GPA for the group admitted without AA degree was higher at admission and at graduation than the mean overall GPA for the group admitted with an AA degree. These findings were opposite of the findings of Carlan and Byxbe (2000). They found that students who earned an AA degree showed a slightly higher GPA than students who did not earn an AA degree.

Admission GPA, Gender, and Graduation GPA

The second hypothesis examined graduation GPA, admission degree and gender. Although the mean graduation GPA for females was higher for both the AA group (M = 3.2051) and non-AA group (M = 3.3367) the difference was not statistically significant and the results cannot be used to make inferences. The difference in the mean GPA for females could be due to any number of variables such as the student’s course load, major, study habits, or simply because females may be more likely to seek help.

Admission Degree, Ethnicity and Graduation GPA

The third hypothesis examined graduation GPA, admission degree, and ethnicity. No significant difference was indicated for admission degree, gender, and graduation GPA. Due to the small sample size in some ethnic groups, the data were collapsed into three groups for this study: minority, white, and ethnicity not reported. Whites had a slightly higher mean graduation GPA for both AA degree transfers (M = 3.1521) and non-AA degree transfers (M = 3.2728) with the white, non-AA transfer students receiving
the highest mean graduation GPA of all the groups. The difference between the highest (White, non-AA) and lowest (Minority, AA) mean graduation GPA was only .2021. Since the test revealed no interaction between the variables, it can be inferred that a student’s ethnicity and AA degree status do not have any impact on their graduation GPA.

Admission Degree and Probation/Disqualification/Exclusion

Hypothesis four examined the possible association between admission degree and the likelihood a student will be placed on probation, disqualification, or exclusion. The probation rate for transfer students is important to both community colleges and universities. If it is high, critics will accuse the community college of not preparing students for university work or they will accuse faculty at the community college of grade inflation. Other critics will blame university faculty and administrators for not providing students with the help they need to be successful. The current study indicated no relationship between admission degree and students’ academic standing. A slightly higher percentage of students who were admitted with an AA degree were placed on probation, disqualification, or exclusion (6.4%) than students admitted without an AA degree (1%) however, there was no significant difference in the probation rates of the transfer students in this study.

The majority of students in this study were upper division transfers (93.1%). It is likely that the low probation rates for these students resulted from transferring with 60 or more credit hours. This is consistent with findings in other studies. In 1993, Best and
Gehring found that the more credits students have the less likely they were to be academically dismissed. Students with 60 or more hours had only a 7.6% dismissal rate while students under 60 hours had a 17.5% dismissal rate.

**Admission Degree, Gender and Probation/Disqualification/Exclusion**

The fifth hypothesis examined the possible association between admission degree, gender, and academic standing. A student’s gender and admission degree had no impact on the academic standing of transfer students in this sample. Separate tests were conducted for each gender and although the percentage of males on probation, disqualification, or exclusion for both the AA (8.4%) and non-AA groups (1.2%) was slightly higher than that of their female counterparts both tests indicated no relationship between academic standing and admission degree. Gender appears to have no impact on academic standing when admission degree is controlled.

**Admission Degree, Ethnicity and Probation/Disqualification/Exclusion**

Hypothesis six examined academic standing, admission degree, and ethnicity. The chi-square test of association indicated no relationship between admission degree and academic standing for the minority and white students in this study. Only 5.4% of white students and 9.1% of minority students admitted with an AA degree were placed on probation. The no-AA group had even lower probation rates with only 1% of whites and .9% of minorities being placed on academic probation. Ethnicity had no statistically significant impact on probation rates for transfer students controlling for transfer status.
Admission Degree and Student Persistence

Student persistence is the most important determinant of student success. If a student does not continue to graduation, probation rates and GPA’s will not be important. Lee, Mackie-Lewis, and Marks (1993) found that students who transfer from a community college are as likely to graduate as native students are. In this study, 73.6% of the total sample were graduated or were enrolled in the summer 2004 semester. Hypothesis seven explored whether admission degree is related to student persistence. The question of student persistence is important to university administrators. Educators are constantly looking for factors that affect student persistence in order to increase graduation rates. This study indicated a statistically significant relationship between admission degree and student persistence. However, the relationship was weak and could be attributed to the large sample size. Sixty-three point three percent of students admitted with an AA degree were enrolled or were graduated at the time of the study. This finding demonstrates the importance of transfer students obtaining the AA degree before transferring to the university. The finding is also consistent with the findings of Townsend and Barnes (2001). They compared students transferring with an AA degree with students transferring with an AS or AAS degree and found that 63% of students who transferred with an AA degree graduated with a bachelor’s degree compared to 46% of students with an AS/AAS degree.
Admission Degree, Gender and Student Persistence

This investigation also indicated a statistically significant relationship between admission degree and persistence for both males and females in the study. The relationship between gender and persistence was weak but was statistically significant. A higher percent of females (65.4%) were graduated or were enrolled at the time of the study. A large percentage of males (60.3%) who were admitted with an AA degree graduated or were enrolled at the time of the study. Again, the data suggests that receipt of an AA degree increases the likelihood a student will persist to graduation.

Admission Degree, Ethnicity and Student Persistence

Of the two ethnic groups investigated in the study (minority and white), a statistically significant relationship between admission degree, student persistence, and ethnicity only existed for the white group. Sixty-four point one percent of white students who were admitted with an AA degree were graduated or were enrolled at the time of the study. However, the relationship was weak and could have been caused by the large sample size of the white students with an AA degree ($n = 2258$). Overall, it appears that ethnicity has no impact on the persistence of transfer students.

Recommendations for Further Research

This study is limited to data from one institution for one academic year. Future researchers may consider including data from more than one institution and for more than
one academic year to investigate the possibility that results will be different under different circumstances. The following are recommendations for future research:

1. Researchers might consider conducting a longitudinal study to determine the time interval it typically takes a transfer student to complete a degree as compared to a native student.

2. The effect of major on transfer student success is another important variable that needs consideration. It is possible that students in more technical majors could have different success rates than students in the social sciences.

3. Research could examine the impact of increasing ACT/SAT scores of community college students on transfer students.

4. With the increasing number of articulation agreements that include transfer agreements for Associate of Science (AS) degrees researchers could evaluate the impact of the AS degree on student success.

Implications of the Study

The significance of this study lies in the information it provides to community colleges and universities in relation to transfer student success. With the ever-growing number of students transferring from community colleges to universities, advisors, administrators, and faculty need to continue to develop an understanding of the factors that affect the success rates of transfer students. Faculty, staff, and administrators at upper level institutions sometimes stigmatize transfer students. The belief is that students
only attend the community college because they cannot get admitted to an upper level institution. Staff and faculty at these institutions need to realize that more and more students are choosing to attend the community college so they can live at home while they attend school or because the tuition is lower. Many of these students have the same academic credentials as their university counterparts.

In addition, because articulation agreements are developed at the state level, legislators could use research related to transfer students to develop an understanding of the affects of transfer on community college students so they can develop agreements that will benefit both the student and the institution. The knowledge that transfer students are just as successful as native students could encourage legislators to increase funding at the community college level so these institutions will have the room, faculty, and staff to accept more students to prepare them for transfer to the university.

Consistent with the findings of other studies, for the students in this study the receipt of an AA degree does not appear to have any impact on the success of transfer students. Where a relationship existed, it was weak and could be attributed to the large sample size. The data also does not indicate that gender or ethnicity have any implications on the success rates of transfer students. While some weak significance was indicated in several tests, the relationship was not strong, indicating that further research needs to be conducted in these areas.
Conclusion

It appears from this data that earning an Associate of Arts degree does not significantly increase the likelihood that a student will be successful at the university. Although this study indicated a relationship between the receipt of an AA degree and student persistence, the relationship was weak. As with other studies that compared transfer students to native university students, there appears to be no difference in the overall success rates of transfer students admitted with and without an AA degree. Regardless of admission degree 73.6% of the students in this study persisted. Transfer students are successful in the attainment of a bachelor’s degree and should be treated with the same respect given to native students. However, it is still beneficial for students in states with articulation agreements in place to complete the degree before transferring. Advisors from both the community college and the upper level institution should ensure students remain informed about their transfer options and strive to make the transfer process easy and convenient for the student. Educators have a duty to assist students in making this transition, so they can attain their goal of earning a bachelor’s degree.
LIST OF REFERENCES


Cejda, B. D., Casparis, C., & Rhodes, J. (April, 2002). *Influences on the educational decisions of Hispanic students enrolled in Hispanic serving institutions*. Paper presented at the Annual Conference of the Council for the Study of Community Colleges, Seattle, WA.


