

## **ABSTRACT**

Vera Jane Palmer, A COMPARATIVE STUDY OF THE ACADEMIC PERFORMANCE OF COMMUNITY COLLEGE TRANSFER STUDENTS AND NATIVE STUDENTS AT SELECTED STATE UNIVERSITIES IN NORTH CAROLINA (Under the direction of Dr. James McDowelle). Department of Educational Leadership, July 2011.

Students, who complete their first two years of higher education at community colleges, must be prepared for the rigorous coursework at four-year institutions. The purpose of this study was to provide a comprehensive update and to determine if there were differences in the academic performance of North Carolina native students and North Carolina community college transfer students who began their higher education matriculation at selected community colleges in North Carolina and then transferred to state universities in the same state.

Using secondary data from statewide databases of student records with information on North Carolina community colleges and University of North Carolina institutions, this study investigated and analyzed data on academic performance as measured by grade point averages and average credit hours attempted for each year under study.

The findings from this study indicated that North Carolina community college transfer students who completed the requirements for associate degrees from the college transfer curriculum performed as well as native juniors as measured by grade point averages. However, the native students attempted more credit hours during their matriculation at the state universities than did their community college transfer counterparts.

A COMPARATIVE STUDY OF THE ACADEMIC PERFORMANCE OF COMMUNITY  
COLLEGE TRANSFER STUDENTS AND NATIVE STUDENTS  
AT SELECTED STATE UNIVERSITIES IN NORTH CAROLINA

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A COMPARATIVE STUDY OF THE ACADEMIC PERFORMANCE OF COMMUNITY  
COLLEGE TRANSFER STUDENTS AND NATIVE STUDENTS  
AT SELECTED STATE UNIVERSITIES IN NORTH CAROLINA

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## **DEDICATION**

In memory of my daddy, John Raymond Palmer, who started this journey with me, but did not live to see it brought to fruition. He was the wind beneath my wings; the inspiration and strength that I needed to finally complete this daunting task. I will forever be grateful to his unwavering support during my formative and mature years!

To my mother, Lettie Brown Palmer, who first instilled in me an appreciation for knowledge, a “yes, you can” spirit and the person who helped me to understand that to whom much is given, much is required. Thank you for being a very powerful and positive role model. Thank you, also, for your unwavering support during my formative and mature years!

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## CHAPTER 1: INTRODUCTION

There is disagreement in the literature related to community college transfer students' academic performance. In particular, some studies indicate that transfer students do quite well in their new institutions, even though as freshmen at the community colleges, they were often less prepared academically than many native freshmen at the four-year institutions (Best & Gehring, 1993; Bogart & Price, 1993; Diaz, 1992; Eckard, 1971; Hollomon & Snowden, 1996; Janicki, 2002; Johnson-Benson, Geltner, & Steinberg, 2001; Owen, 1991; Porter, 1999; Solomon, 2001). Piekarski (2004) defined native freshmen as students who began their higher education matriculation at four-year institutions and subsequently continued enrollment at those same institutions.

Other studies indicate that community college transfer students are not prepared for the rigorous curriculum at four-year institutions (Beckenstein, 1992; Dougherty, 1992; National Center for Educational Statistics [NCES], 2003b; Townsend, 2001). Transfer students have been said to experience *transfer shock*, a decrease in grade point average (GPA) between the last semester at their former institution and the end of the first or second semester at their new institution (Anglin, Davis, & Mooradian, 1993, 1995; Berger & Malaney, 2001, 2003; Carlan & Byxbe, 2000; Glass & Harrington, 2002; Hills, 1965; Holahan, Green, & Kelley, 1983; Keeley & House, 1993; Laanan, 2001; Rhine, Milligan, & Nelson, 2000; Thurmond, 2007; Whitfield, 2005). Cejda (1997) and Cejda, Kaylor, and Rewey (1998) found that transfer shock may be more prevalent in specific majors or disciplines.

Hills (1965) conducted a seminal study on the academic performance of two-year transfer students and found that of the 46 sets of data that he examined, 44 sets revealed shock and two did not. He noted that even though transfer shock was prevalent for many transfer students,

recovery from transfer shock was just about as common as transfer shock, itself. Nickens (1972) conducted seminal research and was the first to use the term, *transfer ecstasy*, which denotes that after an initial adjustment period of usually one or two semesters, transfer students notice an increase in academic performance.

### **Background of the Study**

America's higher education system is generally recognized as one of the most unique in the world (Vaughan, 2006). For example, Vaughan (2006) purports that "one reason the system is so unique is that public higher education has pulled off what may be the most difficult of all tasks for a system as diverse as ours [America's]" (p. 28). That task is to provide high-quality and egalitarian access to higher education to the general populace. As a result, America has developed an inclusive, comprehensive higher education system. America's flagship universities are usually at the top of the totem pole and the community colleges with open access admission policies are at the other end of the pole (Vaughan, 2006). As early as 1964, Herring acknowledged that the North Carolina Community College System had open admission policies (Wiggs, 1989). Nunley and O'Keefe (2007) emphasized that although community colleges have open access admission policies, this does not mean that all students who enter community colleges enroll initially in college level courses for credit. An on-going goal of community college personnel is to match students' abilities with appropriate courses. If students have academic potential, but have certain educational deficiencies that might hinder their achievement, then they are afforded the opportunity to take developmental or basic skills courses to correct the deficiencies before enrolling in college level credit courses.

In addition to providing vocational and technical training, community colleges were created to provide the first two years of college education and to prepare students for the

transition to four-year institutions. Even today, after experiencing many changes in the original mission, community colleges continue to serve as gateways to four-year institutions. Gallego (1997) stated, “Student transfer has become one of the key indicators that lawmakers, media, and the public are using to measure the effectiveness of community colleges” (p. 3). This is still very applicable today; therefore, the ability of community college students to transfer to four-year institutions is important for many reasons:

1. Two-year institutions have long been viewed as stepping-stones to a bachelor’s degree. If by attaining two-year degrees, recipients of those degrees have completed their educational matriculation, then all too often, they would have limited or no access to certain fields, professions, and positions (Higgins & Katsinas, 1999; Selingo, 2007; Tatum, Hayward, & Monzon, 2006; Townsend, 2001; Vaughan, 2006; Wellman, 2002; Whitfield (2005); Wyner, 2006). Carey (2004) noted that without a baccalaureate degree, they face a bleak future and Whitfield implied that this could have a direct impact on the number of underrepresented groups in professions such as physicians, attorneys, pharmacists, dentists or engineers.
2. Community college students who seek the baccalaureate must transfer to four-year institutions. For them, transfer is neither an option nor a convenience, but a necessity. Because many educationally challenged, less-affluent, minority, first generation, and older students begin their higher education studies at community colleges, their access to the baccalaureate depends (to a large degree) on a successful transfer experience (Barbour, Cortez, & Barbour, 2003; Boswell, 2004; Bradburn & Hurst, 2001; Bryant, 2001; Burd, 2006; Carlan & Byxbe, 2000; Chen, 2009; Eaton, 1992; Hendley, 1997; Kirk, 2005; Palmer, 2007; Phillippe & Patton, 2000; Purcell, 2006;

Vaughan, 2006; Wynn, 2002). If there is no community college transfer function, then there is no validity to the egalitarian theory of higher education, as community college students would be participants in a closed system instead of an open system (Boswell, 2004; Vaughan, 2006).

3. With the decline in high-paying blue collar jobs, the only route to the middle class for many Americans will be through the acquisition of a bachelor's degree (Boswell, 2004). Therefore, it is vital that transfer between community colleges and four-year institutions work well.

In recent times, there has been an increased interest in developing and improving the transfer process between community colleges and four-year institutions (Anglin, Davis, & Mooradian, 1993, 1995; Arnold, 2001; Kupfer, 2010; Lovenheim & Reynolds, 2010; Townsend & Wilson, 2006; Wellman, 2002). Unfortunately, there is no roadmap that provides clear directions for all who are interested in transferring from a community college to a four-year institution. However, some states have mandated articulation policies to help facilitate this process. North Carolina is among those states that have mandated college transfer policies (University of North Carolina, 2008; Wellman, 2002). Townsend and Wilson (2006) caution that even though “articulation agreements can serve to ensure smooth or seamless transfer of credits, they do not suffice to ensure the academic success of students after transfer” (p. 449).

The academic performance of community college transfer students once they transfer to four-year institutions is an integral component of the original mission of the community college. Do North Carolina community college transfer students continue to progress through the system and maintain appropriate grade point averages that will ensure continued access to higher



education or do North Carolina native students outperform North Carolina community college transfer students? These are questions that will be researched in this study.

### **Statement of the Problem**

Research that documents the success or failure of the academic performance of North Carolina community college transfer and native students is paramount to answering the question, is there a significant difference between the academic performance of community college transfer and native students in North Carolina? After a decrease in the 1980s in the number of students who transferred from community colleges to four-year institutions, the number of transfer students who enrolled in four-year institutions increased in the 1990s and remained stable throughout the first decade of the 2000s (College Board, 2009; McCormick, 2003).

Community colleges are growing at a rate much faster than that of four-year institutions and now enroll more than ten million students in courses for credit or almost half of all undergraduate students (College Board, 2009; Templin, 2011). As the number of community college transfer students increases at four-year institutions, higher education personnel are faced with the dilemma of finding ways to best meet the needs of this particular student group (Carlan & Byxbe, 2000; Eimers & Mullen, 1997).

In 2009-10, the average tuition for private four-year institutions was \$26,273 (College Board, 2009). This was much higher than the average tuition for public four-year (\$17,020) or public two-year institutions (\$2,549) (College Board, 2009). Even though the average tuition at public four-year institutions is lower than the average tuition at private four-year institutions, it is still considerably higher than the average tuition at public two-year community colleges.

Due to the increased tuition costs at four-year institutions, students from financially-depressed settings and middle-income families who are taxed out of the majority of federal

financial aid eligibility seek lower cost, accessible education; therefore, many students begin their higher education matriculation at local community colleges and then transfer to four-year institutions (Bauer, & Bauer, 1994; Boggs, 2004; Boswell, 2004; DiCroce, 2005; Dills & Hernandez-Julian, 2006; Henderson, 1972; Ishitani, 2008; Kirk, 2005; Louvenheim & Reynolds, 2010; Montondon & Eikner, 1997; Townsend & Wilson, 2006; Wyner, 2006). Forty percent of students from families with annual incomes of less than \$20,000 attend community colleges, compared with only fifteen percent of students from families with annual incomes of more than \$110,000 (Louvenheim & Reynolds, 2010).

Many acknowledge that public two-year institutions have reasonable tuition and student fees, but it is the quality of the community college education that has been and continues to be questionable and widely debated (Carlan & Byxbe, 2000; Culpepper, 2006; Dills & Hernandez-Julian, 2006; Roksa & Calcagno, 2008; Rosenburg & Smith, 2004). Students, who complete their first two years of higher education at community colleges, must be prepared for the rigorous coursework at four-year institutions. This study will bring a current perspective to the discussion of the community college transfer students' academic performance in North Carolina. There is a dearth of recent research on the community college transfer students' academic performance at four-year institutions in North Carolina. This study will add to our knowledge of how North Carolina community college transfer students' academic performance compares to the academic performance of North Carolina native students.

### **Purpose of the Study**

The community college is an entry point into higher education and serves as a vehicle for opportunity and prosperity for its students (Striplin, 2000). Therefore, the community college must be held accountable to its citizenry. The public is demanding greater accountability for tax

dollar expenditures (Seifert, Drummond, & Pascarella, 2006). It is important to study the issue of how well North Carolina community colleges adequately prepare their students to meet the rigorous demands of upper division coursework. The selected community colleges in this study all subscribe to the open access policy and principles of the concerted mission for the North Carolina Community College System (NCCCS). That mission is:

To open the door to high-quality, accessible educational opportunities that minimize barriers to post-secondary education, maximize student success, develop a globally and multi-culturally competent workforce, and improve the lives and well-being of individuals by providing: Education, training and retraining for the workforce, including basic skills and literacy education, occupational and pre-baccalaureate programs.

(NCCCS, 2008, p. 3)

The purpose of this study is to provide a comprehensive update by ascertaining if there are differences in the academic performance of North Carolina native students and North Carolina community college transfer students who began their higher education matriculation at selected community colleges in North Carolina and then transferred to state universities in the same state. The last North Carolina study was conducted in 2002 and included data from 1996 to 1999. Since that time, North Carolina's demographics and economy have changed considerably.

From 1999 to 2006, the enrollment in credit courses in the North Carolina Community College System decreased for African Americans and Caucasians, remained virtually the same for American Indians and Asian Americans, but increased forty-two percent for Hispanics (North Carolina Community College System Fact Book, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007). From 1999 to 2006 in the University of North Carolina, Caucasians were the only ethnicity to decrease in enrollment. Whereas, the enrollment increased for other racial groups:

American Indians (17%), African Americans (11%), Hispanic (39%), and Asian (7%) (Statistical Abstract of Higher Education in North Carolina, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007). Given the rapid increase in the numbers of traditionally underrepresented students, college personnel may respond by adjusting the manner in which they address the needs of those underrepresented students. Such adjustments may influence the curricula, as well as the format, in addition to, when, and, where the courses are taught (Longanecker, 2008).

Additionally, the economy has been adversely affected by an increase in unemployment, plant closings, layoffs, and state budgetary deficits. As a result of these financial downturns, it is speculated that more students will look to higher education for retraining (“The Open Door,” 2009). Yet the challenge of ensuring a high-quality education for all North Carolinians has never been more acute. Only through studies of this nature can answers about the academic performance of North Carolina community college transfer and native students be found and communicated to appropriate personnel—policymakers, educational leaders, student services personnel, practitioners, prospective students, and parents.

### **Research Questions**

The following research questions were developed in order to better understand if there are differences in the academic performance (differences in GPAs and average credit hours attempted) of the selected North Carolina community college transfer students and North Carolina native students at state universities in the University of North Carolina:

1. Is there a significant difference between the North Carolina community college transfer students’ mean GPAs before transfer and the North Carolina native students’ mean GPAs at the end of the sophomore year?

2. Is there a significant difference in the mean GPAs of the North Carolina community college transfer students and the North Carolina native students at the end of the first year in upper division coursework?
3. Is there a significant difference between the average credit hours attempted in the first year of enrollment in upper division coursework for North Carolina community college transfer students and North Carolina native students?
4. Are North Carolina community college transfer students more likely to have end-of-year GPAs of 3.0 or higher as compared to North Carolina native students for those students enrolled at the end of their first year of upper division coursework?
5. Are North Carolina community college transfer students more likely to have end-of-year GPAs of 2.0 or higher as compared to North Carolina native students for those enrolled at the end of their first year of upper division coursework?

### **Overview of the Methodology**

This was a quantitative study that focused on the academic performance of North Carolina community college transfer students and North Carolina native students as measured by the differences in GPAs and average credit hours attempted of the selected North Carolina community college transfer students and North Carolina native students. Community colleges were selected from the following geographical regions (mountains, piedmont, and coastal plains) in the state.

There were several variables in this study. These variables were (a) mean GPAs at the end of the sophomore year for the community college transfer and native students, (b) mean GPAs at the end of the first year in upper division coursework for the community college transfer and native students to assess the effect of transfer shock for the community college transfer

students and to assess for a decline in GPAs for the native students, (c) average credit hours attempted in the first year of enrollment in upper division coursework for the community college transfer and native students, (d) number and percent of community college transfer and native students with end-of-year GPAs that are 3.0 or higher (e) and number and percent of community college transfer and native students with end-of-year GPAs that are 2.0 or higher. Data were analyzed using the Statistical Package for the Social Sciences for Windows Version 18 and appropriate statistical tests were used to analyze the hypotheses.

### **Definition of Terms**

The following glossary of terms was defined for this study and used throughout the study. The definitions were included for clarification and proper understanding of meaning by the reader.

*Attrition:* The withdrawal of students from the academic institution prior to completing the requirements for the baccalaureate degree (Tinto, 1993).

*Average credit hours attempted:* The mean academic load expressed in hours taken per semester by students enrolled in higher education institutions (University of North Carolina, 2006).

*Community college transfer student:* A student who matriculated at a four-year institution after attending a community college (Banks, 1990).

*Constituent institution:* One of the sixteen public universities in the University of North Carolina. All are governed by a single board of governors, but each has its own board of trustees and its distinctive history and mission (University of North Carolina, 2010).

*Dismissal:* The involuntary withdrawal of students from the academic institution due to a failure to maintain adequate progress and a minimum grade point average (Best & Gehring, 1993).

*Full-time student:* An academic load of 12 or more credit hours per fall and spring semester (University of North Carolina, 2006).

*Freshman:* A full-time, degree seeking, undergraduate student who had not previously attended a post-secondary institution before matriculating at an institution of higher learning (Piekarski, 2004).

*GPA:* GPA was the grade point average attained by the student in institutions of higher learning. The GPA was based on a 4-point scale, where the grades of A = 4.0, B = 3.0, C = 2.0, D = 1.0, and F = 0.0 (Boswell, 1992).

*Lower division coursework:* Coursework taken during the freshmen and sophomore years in an institution of higher learning (Henderson, 1972).

*Mean credit load:* The average number of courses taken per semester by students enrolled in higher education institutions (Owen, 1991).

*Native student:* A person enrolled in a higher education institution, and completed all of his or her studies at the same four-year institution (Piekarski, 2004).

*North Carolina Community College System:* The fifty-eight community colleges that comprise the public two-year institutions that offer two-year transfer programs and are administered by the North Carolina State Board of Community Colleges (NCCCS, 2007).

*On-schedule graduation:* On-schedule graduation was determined by the number of students who successful completed all requirements for the baccalaureate degree for the upper division coursework in no more than four semesters (Henderson, 1972).

*Open access:* The policy that permits any adult who has an interest in furthering his and her education to gain access to higher education by enrolling at community colleges (NCCCS, 2007; Nunley & O’Keefe, 2007).

*Persistence:* The uninterrupted enrollment of the student from academic term to academic term with the goal of completing a higher education degree (Patterson, 2007).

*Retention:* Percentage of those remaining at the end of the first year in upper division coursework was used to measure retention (Tinto, 1988).

*Transfer:* The movement of students from one postsecondary institution to another for the purpose of attaining a degree (Townsend, 2001).

*Transfer ecstasy:* No significant academic changes or even an increase in GPA of students who transferred from a community college to a four-year institution (Nickens, 1972).

*Transfer shock:* A decline in the GPA on transferring from a community college to a four-year institution, which is often experienced in the first semester following transfer (Hills, 1965).

*University of North Carolina:* The University of North Carolina is a multi-campus university composed of the seventeen public institutions in North Carolina. The University System consists of the sixteen public educational institutions that grant baccalaureate degrees in the state of North Carolina, as well as the North Carolina School of Science and Mathematics, the nation’s first public residential high school for gifted students (University of North Carolina, 2010).

*Upper division coursework:* Coursework taken during the junior and senior years in an institution of higher learning that was germane to a specific major area of curriculum (Henderson, 1972).



### **Limitations of the Study**

An important limitation of this study was imposed in the selection of students. Participating transfer and native students in this study were limited by the criteria for selection that were established by the researcher. This study included a cohort of North Carolina community college transfer students who were enrolled at the selected North Carolina community colleges during the period of 2003 to 2005 and then attended North Carolina four-year institutions during the period of 2005 to 2006. Native students were limited to a cohort of students who attended only one North Carolina higher education institution during the period of 2003 to 2006. Native students were limited to those classified as juniors.

No attempt was made in this study to determine whether students who dropped out of the universities during their junior year ever returned to the institution of higher education. Because this was an intrastate study of community college transfer students, no inferences were made about students who transferred to the selected institutions from out-of-state community colleges.

### **Research Organization**

This study was reported in five chapters. Chapter 1, the Introduction, provided an overview of the background for the study, the statement of the problem, purpose of the study, research questions, overview of the methodology, definitions of terms, limitations, and the research organization of the study. Chapter 2 presented and synthesized the related literature and research. Chapter 3 explained the methodology including sampling and data analysis procedures that were employed in the study. In Chapter 4, the results and findings of the study were presented. Lastly, Chapter 5 discussed those results and their implications for future research.

## **CHAPTER 2: REVIEW OF RELATED LITERATURE**

### **Introduction**

Current studies on the academic performance of community college transfer students in North Carolina were limited; however, there was a plethora of information on studies from other states. This chapter presented a review of the related literature that discussed the academic performance of transfer students as compared to native students at higher education institutions in the United States. The major themes were (a) studies that compared the overall academic performance of transfer and native students, (b) studies that compared the academic performance of transfer and native students in specific disciplines, and (c) North Carolina studies that compared the academic performance of transfer and native students. The research for the first two themes was conducted from the 1990s to the early 2000s. The third section began with the early 1970s because of the limited number of North Carolina studies. This research strategy increased the number of studies included.

Literature findings suggested that the most common method of comparing the academic performance of community college transfer students with native students used cohorts of transfers and natives who began their higher education studies during the same semester (Belchier, 1999, 2001; Eimers & Mullen, 1997; Porter, 1999; Whitfield, 2005). Consequently, utilizing this comparison method, the two groups were compared at the same point in their academic career. The ongoing question is, whether the open access community college transfer students are adequately prepared to compete with selective admittance native students in their quest to attain baccalaureate degrees?

## **Overall Academic Performance Studies that Compared the Academic Performance of Transfer and Native Students**

### **Introduction**

The overall academic performance studies focused on the academic performance of the community college transfer and native students collectively as groups. Academic performance in those studies was defined as studies that examined one or all of the following: overall cumulative GPA, mean GPA, mean credit load, persistence, dismissal, attrition, retention, and graduation rates for the different groups.

### **Research Studies**

Owen (1991) asserted that as a group, transfer students did not perform as well as native students at three campuses of the University of Colorado System (Boulder, Denver, and Colorado Springs). Academic performance was measured by GPA, mean term credit load, retention, and graduation rates. Native students had a higher percentage of students with GPAs that were 2.0 or better, carried more courses per semester, and had higher graduation and retention rates.

Diaz (1992) conducted an in-depth study that included 64 years worth of studies, in which she examined 62 studies that tested the effect of transfer on academic performance of community college students. The primary focus was on GPA changes for community college students after transferring to four-year institutions. Even though community college transfer students tended to score lower in performance and ability on standardized admission assessments when compared with native students, there were essentially no differences in the transfer and native students' GPAs at the four-year institutions. It is worth noting that her findings revealed

that overall community college transfer students had a high persistence rate and most continued and received a bachelor's degree.

Doucette (1992) conducted a statewide study to compare the academic performance, graduation, and persistence rates of Kansas community college transfer and native students at Kansas state universities. A secondary purpose for this study was to determine if there were changes that had occurred with time after an initial study was conducted in 1985. Findings from the initial study indicated that the academic performance and progress of community college transfer students were quite comparable to those of native students; however, the former graduated at lower rates than the latter primarily as a result of attrition during the first year at the state universities.

Results of the second study indicated that the academic performance of community college transfer students in their first semester in upper division coursework was found to be lower than that of native students. This very well could be the result of transfer shock, which is a common occurrence for students who transfer from one institution to another (Hills, 1965; Laanan, 2001). After an initial one semester recovery period, the community college transfer students' academic performance, which was measured by cumulative GPA, was relatively the same as the native students.

Native students had higher persistence and graduation rates. Even though overall, transfer students had lower persistence and graduation rates, it was revealed that if transfer students persisted through the first year at the four-year institutions, there were no statistically significant differences in persistence and graduation rates for the two groups. Results from the first and second studies were virtually the same.

Best and Gehring (1993) conducted a study to determine how the performance of community college transfer students at a major state university in the Commonwealth of Kentucky compared to those of students who enrolled directly at that university. The transfer students, which included transfer students from two state community colleges, were enrolled in the fall 1984 and fall 1985 in the College of Arts and Sciences, School of Business, and School of Education. Those transfer students were divided into two groups: Students with 60 or more credits and students with less than 60 credits. The native sample of students was selected randomly. By fall 1984 and fall 1985, those native students had accumulated between 60 and 89 credits. Those students were also enrolled in the College of Arts and Sciences and the Schools of Business, and Education.

The three groups were compared by GPAs, graduation rates, and dismissal rates. The mean GPAs for transfers with 60 or more credits were significantly higher than the mean GPAs for students who transferred with less than 60 credit hours. The same was true for graduation rates. Students who transferred with 60 or more hours had a slightly higher graduation rate than those with less than 60 hours. This pattern continued for dismissal rates. 7.6% of the students who transferred with 60 or more hours were dismissed for academic reasons as compared to 17.5% of the students who transferred with less than 60 hours. This study supports the assertion that students who transfer after completing two full years of courses at the community college receive higher GPAs, have higher graduation rates, and are dismissed less than those students who transfer earlier.

This study revealed that transfer students who completed 60 or more credit hours before transferring to a four-year institution had similar GPAs and dismissal rates as the native students. Even though these similarities were noted, native students graduated at a much higher rate than

the community college transfer students who enrolled in the University with at least 60 or more credit hours.

Anglin, Davis, and Mooradian (1993, 1995) conducted a study to compare the academic performance of urban community college students who transferred from Cuyahoga Community College in Cleveland, Ohio to Kent State University to that of native students at Kent State University. Academic performance was measured by attrition and graduation rates. Attrition for purposes of this study was defined as any student who failed to enroll three consecutive semesters. All students included in the study attended high school in Cuyahoga County. This study consisted of two matched groups of transfer and native students who were four years apart. There were 185 transfer students included in this study: Group 1 had 99 and Group 2 had 86. In the native groups, 458 students were in Group 1 and 614 in Group 2. To be included in the study, both native and transfer students completed a minimum of 24 credit hours. Native and transfer students were given six years to meet the requirements for the baccalaureate degree.

Findings indicated that the graduation rate for the community college transfer students was equal to or better than, the native students and there were no significant differences between transfer and native students' GPAs. The attrition rate was higher for the native students. Native students who dropped out had significantly lower GPAs and completed fewer semester hours than the transfer students who dropped out.

Bogart and Price (1993) conducted a study to determine if there were differences between community college transfer, four-year college transfer, and native students' academic performance, who received baccalaureate degrees in the early 1990s from four major universities in Arizona. Academic performance was measured by mean GPA. Community college transfer

students had the highest mean GPA (3.31). Native students' mean GPA was 3.23 and four-year transfer students' mean GPA was 3.06.

Evans (1993) conducted a study in which he researched the academic performance of transfer students from San Joaquin Community College in California and compared the results with those of other California community college transfer and native students in the California State University System. Academic performance was measured by mean GPA. Findings indicated that the native students had the lowest GPA (2.68). San Joaquin Community College transfer students had the highest overall GPA (2.90) and other community college transfer students had a GPA of 2.85.

In DuPraw and Michael's (1995) study, they compared community college and native students during their junior year at the University of California at San Diego. Three groups of college students were compared. Two of those groups were students who enrolled initially at community colleges in California and the third group enrolled initially as freshmen at the University of California at San Diego. The first group of community college students participated in the experimental Transfer Admission Guarantee (TAG) Program. These students signed a contract in which they were guaranteed admission to the University of California System after they successfully completed a 56-unit general education core of courses and maintained a specific GPA. The TAG sample consisted of 340 students.

The second group of community college students (NTAG) was those who did not participate in the contractual TAG agreement between the California community colleges and the University of California System, but was required to meet the same 56-unit general education core of courses prior to transferring. This group was admitted on a space available option to the University System. The NTAG sample included 360 students.

The third group (native) entered the University of California as freshmen. They placed in the top eight of their high school graduating class. There were 360 students in the native sample. This study period was from fall 1988 through spring 1991. Findings indicated that the native students' sample earned a slightly higher mean GPA for work during their junior year than their community college counterparts. The significant difference was noted as  $p < .01$ . Further findings indicated that community college TAG and NTAG transfers' mean GPAs were lower than the native students' mean GPA. However, there was no statistically significant difference between the mean GPAs for the community college transfer TAG and NTAG students. Even though, the mean GPAs for the community college transfer students were lower than their native counterparts, they were still academically successful and maintained GPAs that permitted continuous enrollment. Findings revealed that the TAG and NTAG students seemed to be better prepared for a humanities major rather than mathematics and science or social science major.

Hollomon and Snowden (1996) compared the academic performance as measured by GPAs and American College Testing (ACT) scores in the 1990s of transfer students from a comprehensive urban community college in Mississippi with the academic performance of native students at the University of Southern Mississippi (USM). The study sample consisted of 573 transfer students and 710 native students who earned baccalaureate degrees. This study revealed that there were no statistically significant differences between GPAs of the two groups at graduation, even though the transfer students had lower ACT scores when they transferred to USM. Findings support the assertion that community college transfers perform as well as native students.

Saupe and Long (1996) studied data on 10,312 transfer students who were enrolled at the University of Missouri-Columbia between fall 1983 and fall 1987. They compared this data with



data on 14,351 native students who initially enrolled at the University between fall 1983 and fall 1987. In this study, academic performance was measured by one-year persistence and six-year graduation rates. One-year persistence was defined as enrollment for the second fall semester or graduation before the beginning of that semester. Six-year graduation was defined as earning a bachelor's degree any time prior to the seventh fall semester, with the term of initial enrollment counting as the first semester. Persistence and graduation rates for native students were noticeably higher than those for the community college transfer students. Results support the position that students who began at the community college were less likely to graduate with a baccalaureate degree when compared to native students.

Similar findings were reported in another study conducted with data from the University of Missouri's four campuses (University of Missouri-Columbia [MU], University of Missouri-Kansas City [UMKC], University of Missouri-Rolla [UMR], and University of Missouri-St. Louis [UMSL]). This study was conducted by Eimers and Mullen (1997). Students in this study were either enrolled in their initial institution during fall 1987 or fall 1988. The academic performance of native freshmen, four-year transfer students with a minimum of 24 transfer hours and community college transfer students with a minimum of 24 transfer hours was compared in this study.

Students were tracked for a minimum of six years. The native cohorts had a disproportionately larger sample size as compared to the transfer sample. Even though the transfer sample size was smaller, four-year institutions and community college transfer students contributed equally to the total number of students who transferred in fall 1987 and fall 1988. Graduating rates for transfer and native students were compared to determine academic progress.

This study confirmed previous findings that native students at the University of Missouri tended to have higher graduation rates than either the four-year or community college transfer students.

Porter (1999) conducted a study in which he compared the academic achievement and retention of transfer students and native students on four outcomes: one-year retention, one-year graduation, cumulative grade point average, and academic dismissals. From fall 1993 through fall 1997, different cohorts were studied each year. This study supports the belief that native students' performance is better than transfer students, as the natives outperformed the transfers on all four outcomes. Native students were retained at rates 1 to 9% higher than transfer students, graduated at rates 2 to 8% higher than transfer students, earned grade point averages .1 to .2 of a grade point higher, and were academically dismissed at rates 3 to 6% lower than transfer students.

Carlan and Byxbe (2000) conducted stratified random samples of 500 transfer and 500 native students at a major university in the southern United States over a three-year period (1989–1991). Findings in this study indicated no statistical differences in overall GPAs for transfer and native students. This study supports the findings of other studies that after a decline in GPAs for the first semester after transfer, there are no statistical differences between the GPAs of transfer and native students.

Belchier (2001) researched a cohort of community college transfer and native freshmen students who entered Boise State University in the fall 1989. Graduation rates at 4, 6, and 10 years after entry at the University were the measures that were used to determine academic performance. To be included in the study, community college transfer and native students had to return to the University for at least one additional semester after fall 1989. Findings revealed that transfers with 60 credits or more were almost three times more likely to graduate after four years

as compared to native students. Additionally, transfers were almost two times more likely to graduate after six years as compared to native students, and 1.5 times as great for transfer students after ten years.

Arnold (2001) researched the academic performance of students who transferred from community colleges in Oregon to four-year institutions in the Oregon University System. Using a statewide database of student records, he compared their academic performance with the academic performance of native students who enrolled directly at universities in the Oregon University System. GPA, graduation, and retention rates measured academic performance. The transfer students' overall GPA performance (2.9) was higher than native students (2.8). In addition, findings were shared for individual courses. For all math courses, transfer and native students had comparable GPAs (2.50 and 2.51) for transfers and natives, respectively. Transfers outperformed the natives in the arts and letters (3.03, 2.88), sciences (2.72, 2.59), and social sciences (2.90, 2.59), with results presented for transfers and natives, respectively. However, the natives had a slightly higher GPA in foreign languages (3.07, 3.12), with the results presented for transfer and native, respectively. Transfers who had at least one year of academic credits prior to transferring had six-year graduation rates of 62% as compared to 65 to 68% for natives who persisted beyond their first year of matriculation.

In Solomon's (2001) study, he examined data from 1993-1997 on 561 community college transfer students from Northern Virginia Community College and 2,057 native students from George Mason University (GMU) to check for academic achievement. Findings indicated that over the five-year period for this study, there was no significant difference in GPA between the transfer and native students at the time of graduation from GMU.

Gao et al. (2002) conducted a study on retention and graduation for community college transfer and native students at the University of Alabama (UA). The sample consisted of 1,194 transfer and 2,545 native students. Students were considered graduated if they completed the requirements for the baccalaureate degree prior to fall 2000. Retention in this study was measured by continuous enrollment beginning with fall 1994 and graduating within six years. Findings revealed that transfer students had a significantly higher 4-year graduation rate than native students. In addition, graduation rates for transfer students who completed at least one year at a community college prior to transferring to UA had significantly higher 4-year graduation rates than native students. Additionally, it was revealed that the retention rates for transfer students who completed at least one year at a community college were similar to those of native students.

Janicki's (2002) study compared the academic performance of transfer students from Tidewater Community College in Virginia beginning in fall 1999 or fall 2000 with native students in their junior year at Old Dominion University during the same time span. Findings indicated that the average GPA each year of the transfer students during their first year at Old Dominion was equivalent to the average GPA for the native students at Old Dominion.

Doherty (2006) conducted a study in which he compared the academic performance of the community college transfers with students who entered James Madison University as first-time freshmen (natives). Findings were reported in two ways: Courses in which both student groups performed the best as measured by the percentage of "A", "B", or "Pass" grades received out of all possible grades, and courses in which both groups had the lowest performance using the same measure as that for the highest. In the first category (highest percentage of students passing), many disciplines for transfers and natives yielded similar results, but there were four

disciplines (reading, individualized study, human resource development, and nursing) in which the natives outscored the transfers by at least six percentage points. Similarly, in the courses that the students had the lowest performance, both transfer and native students tended to have lower grades in the same courses, but there were seven disciplines (mathematics, chemistry, general education, science, accounting, philosophy, and economics) in which the transfers were at least 8 percentage points below the native students.

### **Summary**

The review of literature yielded a good geographical mix of studies on the overall academic performance of community college transfer and native students from different areas in the United States. The studies by Diaz (1992) in Kansas, Best and Gehring (1992) in Kentucky, Anglin, Davis, and Mooradian (1993, 1995) in Ohio, Hollomon and Snowden (1996) in Mississippi, Carlan and Byxbe (2000) in the southern United States, Solomon (2001) and Janicki (2002) in Virginia indicated that native and transfer students' academic performance was comparable. One could speculate that the sentiment expressed by Adelman (1999) provides a reasonable explanation for these results, "the very act of transfer embodies an intensity of commitment to higher education that results in degree completion rates equivalent to—if not higher than—those of students who do not transfer" (p. 32).

The twelve other studies were equally divided in favor of community college transfer and native students. However, the studies revealed a relationship between the number of credits completed at the community colleges and academic performance of the community college transfer students at the four-year institutions. Several studies revealed that students, who transferred after completing the requirements for an associate's degree or at least 60 credit hours, had academic performance that was very comparable to the academic performance of native

students. The data from these studies support the premise that community college transfer students perform as well as or better than native students.

## **Discipline-Specific Studies that Compared the Academic Performance of Transfer and Native Students**

### **Introduction**

There are many reasons for examining transfer student academic performance at the discipline or course-specific level, but the primary reason is stated by Whitfield (2005), “when a course or sequence of courses is an important gateway to an academic major or professional program . . . , transfer students’ progress in these classes can have a great impact on their future academic career” (p. 532). She further contends that certain upper division courses are sometimes used to screen applicants for admission to competitive professional programs. These are often the first courses that community college transfer students take after transferring to four-year institutions. If they do not perform well in these courses, then it is not likely that they will gain access to certain professional programs. Palmer and Eaton (as cited by Cejda, Kaylor, & Rewey, 1998) stressed a secondary reason. They maintained that such studies will either “confirm transfer success or detect weaknesses that need attention” (p. 39).

### **Research Studies**

Colley and Volkan (1996) conducted a discipline-specific study in which they compared the academic performance of transfer students from two-year institutions with the academic performance of native students in accounting principles courses. The time span for this study was from 1989 to 1992 and the research included three comprehensive, four-year institutions. Those four-year institutions received many community college transfer students into their accounting programs. Two regression analyses (upper level accounting average and

Intermediate I grades) were used to investigate the data. There was a very noticeable difference in sample size between the native and transfer students. To eliminate bias, the native students from the three schools were placed into as many small sample groups as necessary to equal the group size of the transfer students. Results of both sets of regressions indicated that the native students outperformed the transfer students. Native students consistently had higher grades in the upper level accounting courses.

Montondon and Eikner (1997) conducted a study at a state university in Texas in which they compared community college transfer students' achievement in an upper level intermediate accounting class with that of native students. Prior to enrolling in the upper level course, all students had taken two accounting principles classes as sophomores either at their community college or at the four-year university. Findings indicated that in Intermediate Accounting, the final average grade was higher for the community college transfer students (2.86) than the final average grade for the native students (2.51).

The difference was even more pronounced for the students who decided to major in accounting. Transfer students who chose accounting as their major had a mean average of 2.98. Native students who chose accounting as their major had a 2.45 mean average. The transfer students also had a better dropout rate of 21.5% as compared to 27.8% for the native students. Montondon and Eikner suggested that if students took accounting principles classes at the community colleges prior to attending the four-year institutions, then those classes screened out students who lacked the ability to successfully complete an accounting degree. They, also, reported that those classes provided adequate preparation for upper division accounting courses for students majoring in accounting.

Laband, Rosenberg, and Smith (1997) examined the performance of community college transfer students and native students in upper level accounting classes. This study included data from 1987-1995 on students who either began their higher education matriculation at community colleges or at four-year institutions in the Mid-Atlantic region. There were 221 transfer students from two-year institutions and 2,073 native students. Students who took fewer than three upper level accounting courses were not included in the study. Findings indicated that native students had a slightly higher mean GPA in the upper level accounting courses than did the two-year transfer students, but this difference was not significantly different.

Adelman (1998), a Senior Research Analyst, U.S. Department of Education conducted a study in which he examined the discipline of engineering. The evidence used in this study was derived from data associated with the 11-year college transcript history (1982-1993) from the High School and Beyond/Sophomore Cohort Longitudinal Study. In this study, he reported: “Among all students who reached the threshold of the engineering path and attended four-year colleges, the proportion of community college transfer students who completed bachelor’s degrees in any field was almost indistinguishable from the proportion of these two groups completing degrees within four-year college attendance patterns, and the comparative proportions of these two groups completing degrees in engineering is not statistically significant” (Adelman, 1998, p. 25).

Laband and Hanby (2003) conducted research to determine whether community college students who transferred into undergraduate forestry programs at Auburn University in Alabama performed as well as native students who entered those programs as freshmen. The sample of undergraduates selected for analysis was comprised of students who graduated with a Bachelor of Science degree in Forestry during the six-year period 1995-2000. This study was directed



toward the academic performance of students in the seventeen core required courses that all Forestry Bachelor of Science's students must take during their junior and senior years. Findings indicated that there were no statistically significant differences in the academic performance of transfer and native students in the Forestry courses.

Townsend, Carr, and Scholes (2003) conducted a study at the University of Missouri–Columbia in which they compared the academic performance of two teacher education cohort groups who graduated either in 2002 or 2003. Each cohort consisted of three student groups: native, community college transfer, and four-year college transfer students. The 2002 cohort included 104 natives, 5 community college transfer students, and 19 four-year transfer students. The 2003 cohort included 87 natives, 7 community college transfer students, and 18 four-year college transfer students. There were three criteria used in this study to ascertain academic performance: (a) receiving a pass or fail on the initial performance on the mid-level preparatory portfolio, (b) receiving a pass or fail on the initial performance on the senior-year portfolio, and (c) GPA upon completion of the requirements for a baccalaureate degree. Findings indicated that in both cohort groups, community college transfer students performed at approximately the same level academically as did the native students. Equally noteworthy, is that in this study, whether community college or four-year college transfers, they performed as well or better than native students in this University's undergraduate teacher education program.

Rosenburg and Smith (2004) conducted a study on community college and native undergraduate students at a Midwest regional public state university during spring, summer, and fall 2003. The research was conducted on a Principles of Finance course. There were seven sections of this course and the same professor taught all sections. This professor used the same syllabus, material, text, and testing instruments with each class. Conducting the study with one

instructor eliminated the bias that could have been presented with multiple instructors. The researchers checked for academic progress by collecting information on cumulative GPA, major, number of times enrolled in the course before, and average of scores on the required course assessments. There were 173 students included in this study: 73 native and 100 community college transfer. The community college transfer students were usually older and as a rule did not enroll in as many credit hours per semester. Findings suggest that there were not any statistical differences in the performance of the community college transfer students and native students in this particular study.

Humboldt State University in Northwestern California was the setting for a study conducted by Johnson (2005). This study spanned twelve years (1992-2003). Data on academic performance were obtained from the University's Office of Academic Affairs. The data provided information on 2,467 students who completed the requirements for a baccalaureate within the College of Natural Resources and Sciences. Overall GPA at graduation measured academic performance. Even though, the GPA was adjusted for precollege variables (SAT score, high school GPA, and age at graduation), no statistically significant difference in the performance of transfer and native students was found for either the raw GPA or the adjusted GPA for the students.

Whitfield (2005) conducted a discipline-specific study to determine if there were differences in the performance of community college transfer and native students in organic chemistry and biochemistry at the flagship university in Washington State. Data for eleven community colleges in the state were collected on the cohorts from 1996 through 2002. The native samples were larger. In organic chemistry, students were compared by mean course grade and grade distribution (0 to 4.0, based on a .5 increment). Findings indicated that the difference

was significant by only .11, which indicated that transfer students compared reasonably well to the native students in organic chemistry.

Academic performance in biochemistry was also measured by mean course grade and grade distribution in the first and second quarter biochemistry courses. The transfer students had a mean course grade of 2.75 as compared to 2.93 for the natives in the first quarter course. There was a significant difference of almost .20 in mean course grade for the two groups.

There was also a significant difference in the grade distribution between the transfer and native students in biochemistry. To determine if the lower grades in the first quarter were due to transfer shock, a comparison was conducted in the second biochemistry course, which included students from the original data set. Findings indicated that the transfer students' grades did not improve, but declined, whereas native students, grades increased slightly.

### **Summary**

In general, the foregoing studies revealed minimal consistency. The discipline with the most studies was accounting and finance (Colley & Volkan, 1996; Laband, Rosenberg, & Smith, 1997; Montondon & Eikner, 1997; Rosenberg & Smith, 2004). In those studies academic performance was primarily measured by GPA. Even though native students had a slightly higher mean GPA in the upper level accounting courses in the Colley and Volkan (1996) and Laband, Rosenberg, and Smith (1997) studies, this difference was not significantly different in the Laband, Rosenberg, and Smith (1997) study. In the Rosenberg and Smith (2004) study, the academic performance for the community college transfer and native students was the same. In the Montondon and Eikner (1997) study, the community college transfer students outperformed the native students and if the community college transfer students majored in accounting, the

difference was even greater. Montondon and Eikner (1997) suggested that the community college accounting principles classes screened out poorly performing students.

In addition, no pattern was revealed in the natural resources and sciences studies (Johnson, 2005; Laband & Hanby, 2003; Whitfield, 2005). Academic performance was either not significant or the same, with the exception of biochemistry, in which the native students outperformed the community college transfer students. For the other two disciplines (engineering and teacher education), the academic performance was comparable. No consistency or patterns emerged for these studies.

## **North Carolina Studies that Compared the Academic Performance of Transfer and Native Students**

### **Introduction**

Most of the North Carolina studies were conducted in the early 1970s when the North Carolina Community College System was in its infancy. During this time, there were only 15 community colleges as compared to 58 today. Graduate students conducted several studies as a part of a large research project at a major North Carolina research university. This project was designed to determine factors associated with the success and achievement of community college transfer students at four-year publicly supported institutions when compared to native students. Later studies examined how well community college students performed academically at four-year institutions when compared to native students.

### **Research Studies**

Eckard (1971) researched whether a significant difference existed between 84 community college transfer students from ten North Carolina community colleges and 113 native students from Appalachian State University (ASU) in Boone, North Carolina during their junior and

senior years in upper division coursework. Findings indicated that native students began their higher education matriculation with a significantly higher high school percentile rank, indicating that native students were initially better prepared for college than their community college counterparts. Academic achievement as measured by GPA revealed that there were little differences between the two male groups during their entire period at ASU; however, the transfer females' GPAs at ASU were lower than the native females until the twelfth quarter. Overall, the transfer students as a group never earned a mean GPA lower than 2.42 and persisted to graduation with a graduation rate of 86%. The high graduation rate for transfer students at the University and the success in academic achievement as compared with the native group indicated that transfer students can successfully make the transition to a four-year institution.

Stirewalt (1971) researched how well 63 North Carolina community college transfer students from six community colleges performed academically after transferring to the University of North Carolina at Charlotte (UNC-C). He compared their progress with 89 native students who enrolled initially at the UNC-C as freshmen. The students were compared by group and gender. The criteria used to determine academic achievement were GPA, persistence in school, graduation on time, appointment to the Chancellor's List, and academic suspension. The community college transfer students' GPAs in lower division coursework were higher as a group than the GPAs of the native students. However, native students had higher GPAs during the first three semesters of upper division coursework. Even though recovery for the community college transfer students was evident during the eighth semester, native students had a higher graduation on time record (8 semesters).

Additional findings indicated no significant difference in persistence (enrollment for any semester) existed for transfers and natives of the same sex; however, significantly more native

students enrolled for the seventh and eighth semesters. As a group, more natives than transfers qualified for the Chancellor's List. The same pattern emerged for male students. More male native students qualified for the Chancellor's List; however, no difference was noted for female transfer and female native students who qualified for the Chancellor's List. Neither group nor gender noted any difference for academic suspension.

Henderson (1972) analyzed the academic performance of transfer students from 13 community colleges as contrasted to native students in four North Carolina publicly supported universities. The researcher chose those institutions because of their similarities in programs, students, facilities, and staff. GPA was used to measure academic performance. Findings indicated that there were significant differences between transfer and native students' GPAs during lower division coursework. Transfer students had higher GPAs. Henderson (1972) speculated, "This finding could have been due to a tendency on the part of the community colleges to grade higher or perhaps embrace standards that are lower than those of the senior institutions" (p.39). After an initial period of adjustment of one semester, in which transfer shock was prevalent in all four institutions for the transfers, the GPA for both transfers and natives began to increase. Even though GPAs for both groups increased by the end of the junior year of enrollment at all of the four-year institutions, the natives had slightly higher GPAs. However, at one of the four institutions, this difference was not statistically significant. By the end of the senior year, there were no statistically significant differences found in the achievement of the transfer and native students at three of the four-year institutions. Additionally, there was no difference in on-schedule graduation (end of the eighth semester) between the two groups.

Taylor's (1972) study compared the academic achievement of 68 community college transfer students from 12 North Carolina community colleges who transferred to East Carolina

University (ECU) in Greenville, North Carolina in fall 1969 to that of a random sample of 82 native students enrolled at ECU during the same time period. Academic performance was measured by GPA. Findings indicated that the transfer students' GPAs were significantly higher in the lower division coursework than the native students. Additionally, female students whether transfer or native, GPAs were significantly higher during lower division coursework than were the male students' GPAs. However, when cumulative GPAs were examined for upper division coursework, another picture emerged. Even though the females continued to outperform the males as measured statistically by GPAs, the native students had significantly higher GPAs than the transfer students.

Boswell (1992) compared three groups of students in their junior and senior years at 3 four-year institutions in the University of North Carolina (UNC). In addition to the community college transfer and native students, he included private junior college transfer students in his study. Academic performance was measured by comparing GPAs when the groups entered their junior year, GPAs in the major course of study at the four-year institutions, and comparisons by age and gender. Findings once again revealed that community college transfer students earned significantly higher GPAs during their lower division coursework than the other two groups. This study also revealed that community college transfer students' academic performance during their junior and senior years was similar to the other two groups and that there were no statistically significant differences either in the performance of the three groups by academic major, age, or gender.

Glass and Harrington (2002) conducted a study at a major research University of North Carolina institution to determine if there were differences in the academic performance of transfer and native students. Data on transfer students from all 58 community colleges in the

North Carolina Community College System were included in this study. Data were obtained from the University's Registrar's Office and from a statewide database. There were two different study periods included in this study (students classified as seniors in 1998 and 1999). For each study period, 50 community college transfer students and 50 native students were randomly chosen for the study. The groups were compared by GPAs at the end of the lower division coursework and at the end of the spring semesters in 1998 and 1999. Retention and graduation rates were compared for both groups. Findings indicated very little differences between the groups. The transfer students' performance was equal to or greater than the native students' performance.

A comparison of GPAs at the beginning of the junior level coursework for both groups revealed that the community college transfer students had higher GPAs; however, there were no statistically significant differences in GPAs for the first group. By spring 1998, the mean semester GPA for the community college transfer seniors in the first group was not statistically significant. Findings for the second group in spring 1999 revealed that the community college transfer seniors' mean GPA was .29 higher than native students' mean GPA and this was a statistically significant difference. Students in both groups, either, had graduated by summer or fall following spring semesters 1998 or 1999.

### **Summary**

In this review of related literature, five of the six studies agreed that the community college transfer students generally acquired higher GPAs for lower division coursework than their native counterparts. Eckard's (1971) study was the only study that did not address GPAs for lower division coursework. Other research findings established that transfers generally suffer a drop in GPA during the first quarter or semester after transfer, but a recovery usually takes place



(Hills, 1965; Laanan, 2001). Findings indicated very little statistically significant differences between the academic performance of North Carolina community college transfer and North Carolina native students. However, native students generally had a higher graduation on-schedule record. The review illustrated the difficulty in determining whether North Carolina community college transfer students can be as academically successful as North Carolina native students who began their higher education studies at the public four-year institutions.

### **Chapter Summary**

Thirty-four different research studies on the academic performance of community college transfer and native students were presented in this review of related literature. This review encompassed nearly forty years of research. GPA was used in most studies as the primary indicator of academic performance. However, the research is not clear on the impact other variables may have on GPA outcomes. The most revealing findings indicated that generally the community college transfer students had higher GPAs than the native students did in their lower division coursework. Additionally, it was not uncommon for community college transfer students to suffer a drop in GPA during the first quarter or semester in enrollment at the four-year institutions. Generally, a recovery took place in the next quarter or semester following the initial decline. Students who initially enrolled at community colleges generally received the baccalaureate degree, but often, it took them longer than it did the native students to complete degree requirements.

The findings on discipline-specific studies, especially the accounting and finance studies were summarized best by Montondon and Eikner (1997). They suggested that the community college accounting principles classes provided adequate preparation for upper division accounting courses for students majoring in accounting. This perhaps could account for the

reason that in the accounting and finance classes greater than 50 percent of the studies did not yield any statistically significant differences between the academic performance of the community college transfer and native students. The engineering, teacher education, and the natural resources and science studies, with the exception of biochemistry, indicated that there were no statistically significant differences in the academic performance of community college transfer and native students.

The North Carolina studies did not reveal a pattern of achievement for the community college transfer or native students. Although, the North Carolina studies did not reveal a pattern of achievement for the community college or native students, one could speculate that perhaps two reasons could account for the difficulty in determining if a significant difference existed between the academic performance of the North Carolina community college transfer and the North Carolina native students. The first reason is the transition of the North Carolina Community College System from a quarter to a semester system coupled with the development of the Common Course Catalog in 1997, which led to the uniformity in course descriptions throughout the System. This change allowed for continuity of course transferability within the North Carolina Community College System and University of North Carolina.

The second reason is the development of the Comprehensive Articulation Agreement between the North Carolina Community College System and the University of North Carolina. The development of this agreement led to a smoother transfer of students from one system to the other. Due to these changes, North Carolina community colleges were more closely aligned with the University of North Carolina. The North Carolina review, as did the overall performance and discipline-specific reviews illustrated the difficulty in determining if there is a significant difference between the academic performance of community college transfer and native students.

## **CHAPTER 3: RESEARCH METHODOLOGY**

### **Introduction**

The purpose of this chapter is to discuss the design and procedures that were used in the study to determine if there were differences in the academic performance of North Carolina community college transfer students and North Carolina native students at the selected state institutions in the University of North Carolina. Academic performance was measured by differences in GPAs and average credit hours attempted of the selected North Carolina community college transfer students and North Carolina native students during their matriculation at state universities in North Carolina. A native student was a person enrolled in a higher education institution, and completed all of his or her studies at the same four-year institution (Piekarski, 2004).

The North Carolina Community College System, administered by the North Carolina State Board of Community Colleges, consists of the fifty-eight public community colleges that offer two-year transfer programs in North Carolina (NCCCS, 2007). The University of North Carolina is a multi-campus university composed of seventeen institutions and is governed by the University of North Carolina Board of Governors. The University of North Carolina consists of sixteen state universities that grant baccalaureate degrees in the state of North Carolina, as well as the North Carolina School of Science and Mathematics, the nation's first public residential high school for gifted students (University of North Carolina, 2010).

Included in this chapter are (1) the research questions, (2) study design, (3) study population, (4) data collection procedures, (5) limitations of the study, (6) data analysis procedures, and (7) summary of the methodology.

## **Research Questions**

This research addressed the following questions about the academic performance (differences in GPAs and average credit hours attempted) of North Carolina community college transfer and North Carolina native students:

1. Is there a significant difference between the North Carolina community college transfer students' mean GPAs before transfer and the North Carolina native students' mean GPAs at the end of the sophomore year?
2. Is there a significant difference in the mean GPAs of the North Carolina community college transfer students and the North Carolina native students at the end of the first year in upper division coursework?
3. Is there a significant difference between the average credit hours attempted in the first year of enrollment in upper division coursework for North Carolina community college transfer students and North Carolina native students?
4. Are North Carolina community college transfer students more likely to have end-of-year GPAs of 3.0 or higher as compared to North Carolina native students for those students enrolled at the end of their first year of upper division coursework?
5. Are North Carolina community college transfer students more likely to have end-of-year GPAs of 2.0 or higher as compared to North Carolina native students for those students enrolled at the end of their first year of upper division coursework?

## **Study Design**

This quantitative, comparative study was designed to determine if there were differences in the academic performance (differences in GPAs and average credit hours attempted) of North Carolina community college transfer students and North Carolina native students at fifteen of the

sixteen public higher education institutions in the University of North Carolina. Data were not presented for the University of North Carolina School of the Arts because this subgroup's cumulative data contained fewer than five observations. Additionally, no data were included for the seventeenth public institution in the University of North Carolina, the North Carolina School of Science and Mathematics as that institution is a high school. This study included only higher education institutions.

A comparative research design describes a population in terms of differences between groups without manipulating them (Pallant, 2007). This research design was appropriate for this study because the student groups attended higher education institutions (similarity), but they were different as one student group attended higher education institutions that subscribed to the open access admittance policies and the other student group attended higher education institutions that had selective admittance policies.

### **Study Population**

The student population for this study included a cohort of full-time community college transfer and full-time native students who matriculated at North Carolina community colleges and the University of North Carolina institutions during the timeframe of 2003-2006. Full-time was defined as an academic load of 12 or more credit hours per semester (University of North Carolina, 2006). Initially this study included 1,784 community college transfer students and 9,677 native juniors (see Table 1). However, by the end of one full year in upper division course work, the number of students still enrolled declined. One year later, there were 1,571 community college transfer students and 9,220 native students (see Table 2).

Table 1

*Participants (End-of-Sophomore Year)*

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Student	<i>N</i>	%
Community College Transfer	1,784	16
Native	9,677	84
Total	11,461	100

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Table 2

*Participants (End-of-First Year in Upper Division Coursework)*

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Student	<i>N</i>	%
Community College Transfer	1,571	15
Native	9,220	85
Total	10,791	100

---

## **Community College Transfer Students**

The North Carolina community college transfer students enrolled at the selected North Carolina community colleges from 2003 to 2005 and then attended institutions in the University of North Carolina from 2005 to 2006. Although community college students may transfer to four-year institutions at different times during their lower division matriculation, this research study focused only on those community college transfer students who were awarded associate degrees from the college transfer curriculum at the North Carolina community colleges and then transferred to institutions in the University of North Carolina.

The college transfer associate degrees (Associate in Arts [AA], Associate in Fine Arts [AFA], and Associate in Science [AS]) require a total of 64-65 semester hours for graduation, a minimum overall GPA of 2.0 on a 4.0 scale, and a grade of C or better in each general education core course. The general education core component consists of 44 semester hours in the areas of mathematics, humanities and fine arts, English composition, natural sciences, and social and behavior sciences. To fulfill the general core requirements, community colleges are also required to provide opportunities for the achievement of competence in reading, writing, oral communication and basic computer use (University of North Carolina, 2008).

## **Native Students**

The native students were full-time students who completed all of their undergraduate studies at the same four-year institution in the University of North Carolina during the academic years of 2003 to 2006. To be included in this study, they maintained a GPA of 2.0 or higher on a 4.0 scale and completed at least 60 credit hours, which qualified them for junior status.



## **Data Collection Procedures**

The data for this study was generated by a cooperative effort between the North Carolina Community College System's Research and Program Management Department and the University of North Carolina General Administration. Subsequent headings have detailed information on this cooperative effort.

### **The Research and Performance Management Department**

The Research and Performance Management Department collects and maintains data on all community colleges in the North Carolina Community College System. This Department provides the University of North Carolina General Administration with data on two cohorts of North Carolina community college transfer students annually. One cohort includes community college transfer students who have completed the college transfer associate degree requirements. The other cohort includes data on community college transfer students who have completed at least 24 hours or more of college transfer courses at a North Carolina community college, but has not completed the requirements for an associate degree. No GPA information is included in the data that the Research and Performance Management Department shares with the University of North Carolina General Administration.

At the researcher's request, personnel from the North Carolina Community College's Research and Performance Management Department agreed to create a special file of the Associate in Arts, Associate in Fine Arts, and Associate in Science graduates for a particular year (2005), which included the mean GPAs for their lower division coursework. After creating this file, they shared the file with the University of North Carolina General Administration personnel. Although, personnel at the Research and Performance Management Department

created a special file, they were unable to track which state university, individual community college transfer students attend after they exit the community colleges.

### **The University of North Carolina General Administration**

Personnel at the University of North Carolina General Administration (UNC-GA) collect and maintain data on all state universities in the University of North Carolina. They have the capability of tracking which state university, individual community college transfer students attend after they exit the community colleges. The UNC-GA agreed to match the community college transfer students from the file that the North Carolina Community College's Research and Performance Management Department created with their files to determine the subgroup of students who actually transferred after completing the requirements for college transfer associate degrees and to which state universities they transferred. This data provided the researcher with academic performance data for the community college transfer and native students per state university in the University of North Carolina for the appropriate years under study.

### **Data**

The data for the research questions included the number of community college transfer students who transferred to the selected state universities in the University of North Carolina for the fall 2005 semester. This data also included the number of native students who were enrolled at each state university for the appropriate years under study. Also, procured were additional data for each research question, which are provided in the following sections.

**Research question one.** Data for this research question included the sophomore mean GPAs of the community college transfer students per state university. Also, included were the mean GPAs for native students per state university at the end of their sophomore year for the same timeframe.

**Research questions two and three.** Data for these questions included community college transfer and native students' mean GPAs at the end of their first year in upper division coursework per state university. Additionally, the researcher procured academic performance data for the community college transfer and native students on the average credit hours attempted for their first year of enrollment in upper division coursework per state university.

**Research question four.** To answer this question, the researcher acquired data on the number of community college transfer and native students per state university, whose GPAs at the end of the first year of matriculation in upper division coursework was 3.0 or higher. This is the minimal standard for inclusion for academic recognition in the University of North Carolina.

**Research question five.** To analyze data for this question, the researcher acquired data on the number of community college transfer and native students per state university, whose GPAs at the end of the first year of matriculation in upper division coursework was 2.0 or higher. This is the minimal standard for continued access to higher education in the University of North Carolina.

To ensure students' privacy and to comply with the Family Educational Rights and Privacy (FERPA) Act, the data did not contain personally identifiable information. Information was not presented for any group or subgroup containing fewer than five observations.

### **Limitations of the Study**

The study's findings were limited by the following:

1. Subjects in this study were limited to the data made available by the personnel at the University of North Carolina General Administration and the North Carolina Community College's Research and Performance Management Department. They belong to intact groups (college transfer curriculum graduates and native students for

- a particular timeframe); thereby, limiting the generalizability of the findings to the general populace.
2. This was an intrastate study of community college transfer students, no inferences were made about students who transferred to the selected institutions in the University of North Carolina from out-of-state community colleges. This could limit the generalizability of the findings to the general populace.
  3. Even though, this research study began with a cohort of community college transfer students and a cohort of native students, the number of subjects in each cohort changed with time due to attrition and dismissal reasons. Attrition was the withdrawal of students from the academic institution prior to completing the requirements for the baccalaureate degree (Tinto, 1993). Dismissal was the involuntary withdrawal of students from the academic institution due to a failure to maintain adequate progress and a minimum grade point average (Best & Gehring, 1993). These factors could impact the generalizability of the results and conclusions.

### **Data Analysis Procedures**

Prior to beginning this quantitative, comparative study, a request for review and exemption of research involving the collection or study of existing documents was submitted to East Carolina University and the Medical Center Institutional Review Board (UMCIRB). After receiving approval for this study from the UMCIRB, data were analyzed using the Statistical Package for the Social Sciences for Windows Version 18. For the statistical tests, an alpha level of .05 was the standard for significance. Included below are the five research questions and the associated statistical tests that were used to analyze the data associated with each question:

### **Research Question One**

An independent samples t-test of significance among the means compared the mean GPAs of the community college transfer students who completed the requirements for the college transfer associate degrees and the mean GPAs of the native students for fifteen of the sixteen state universities in the University of North Carolina to determine if there were differences in the academic performance of the two student groups. Data were not presented for the University of North Carolina School of the Arts because this subgroup's cumulative data contained fewer than five observations. As this study included only higher education institutions, no data was presented for the residential high school, the North Carolina School of Science and Mathematics. The comparisons were made at the end of the sophomore year in 2005 for both community college transfer and native students.

### **Research Question Two**

An independent samples t-test of significance among the means compared the mean GPAs of the community college transfer students who completed the requirements for the college transfer associate degrees and native students for fifteen of the sixteen state universities in the University of North Carolina to determine if there were differences in the mean GPAs of the two student groups. Data were not presented for the University of North Carolina School of the Arts because this subgroup's cumulative data contained fewer than five observations nor was data presented for the North Carolina School of Science and Mathematics. The comparisons were made in 2006 at the conclusion of the student groups' first year in upper division coursework.

### **Research Question Three**

An independent samples t-test of significance among the means compared the average credit hours attempted in the first year of enrollment in upper division coursework between community college transfer students who completed the requirements for the college transfer associate degrees and native students for fifteen of the sixteen constituent universities in the University of North Carolina to determine if there were differences in the academic performance of the two student groups. Data were not presented for the University of North Carolina School of the Arts because this subgroup's cumulative data contained fewer than five observations. Additionally, no data was presented for the residential high school, the North Carolina School of science and Mathematics. The comparison was made at the end of the spring semester in 2006.

### **Research Question Four**

The non-parametric Fisher's exact test was conducted to examine the likelihood that there was a relationship in the academic performance (GPAs) of North Carolina community college transfer students and North Carolina native students at fifteen of the sixteen state universities in the University of North Carolina. Data were not presented for the University of North Carolina School of the Arts because this subgroup's cumulative data contained fewer than five observations. Also, data were not presented for the seventeenth University of North Carolina institution, the North Carolina School of Science and Mathematics. This institution is a high school and only higher education institutions are included in this study. This analysis was conducted between two dichotomous variables: (1) students (community college transfer and native) and (2) the number of students with end-of-year GPAs 3.0 or higher compared with the number of students with end-of-year GPAs less than 3.0.

## **Research Question Five**

The non-parametric Fisher's exact test was used to determine if there was an association between the academic performance (GPAs) of North Carolina community college transfer students and North Carolina native students at fifteen of the sixteen state universities in the University of North Carolina. Data were not presented for the University of North Carolina School of the Arts because this subgroup's cumulative data contained fewer than five observations. Also, data were not presented for the seventeenth University of North Carolina institution, the North Carolina School of Science and Mathematics. This institution is a high school and only higher education institutions are included in this study. This analysis was conducted between two dichotomous variables: (1) students (community college transfer and native) and (2) number of students with end-of-year GPAs 2.0 or higher versus the number of students with end-of-year GPAs less than 2.0.

The Fisher's exact test calculates an exact probability for the relationship between two dichotomous variables in a two by two contingency table (Garson, 2008). A dichotomous variable categorizes data into only two groups (Siegle, 2010). This statistical test was used instead of Pearson chi-square because in situations where the data set is small, sparse, contains many ties, or is unbalanced, the Fisher's exact method produces more reliable results (Mehta & Patel, 1996).

## **Summary**

This chapter described the quantitative, comparative study's design and population, listed the research questions which guided the study, and delineated limitations of the study, data collection and data analysis procedures employed in the study to determine if there were differences in the academic performance (differences in GPAs and average credit hours

attempted) of North Carolina community college transfer students and North Carolina native students at fifteen of the sixteen constituent state universities in the University of North Carolina. Data were not presented nor analyzed for the University of North Carolina School of the Arts because this subgroup's cumulative data contained fewer than five observations. Data were not presented for the seventeenth University of North Carolina institution, the North Carolina of Science and Mathematics, as this institution is a high school. This study included only higher education institutions. The results of the study are presented in Chapter 4.



## **CHAPTER 4: DATA ANALYSIS**

### **Introduction**

This chapter presents the findings from the data analyses as they pertain to the five research questions formulated to determine if there were differences in the academic performance (differences in GPA and average credit hours attempted) of North Carolina community college transfer students and North Carolina native students at fifteen of the sixteen state universities in the University of North Carolina. Data were not presented for the University of North Carolina School of the Arts because this subgroup's cumulative data contained fewer than five observations. Additionally, no data were included for the seventeenth public institution in the University of North Carolina, the North Carolina School of Science and Mathematics as this institution is a high school. This study included only higher education institutions.

### **Results and Analysis of Data**

The data for this research study included secondary data from statewide databases of higher education student records with information on all North Carolina community college transfer students and University of North Carolina public institutions. This information was provided by the North Carolina Community College's Research and Program Management Department and the University of North Carolina General Administration. Data on academic performance (GPA and average credit hours attempted) for 2003-2006 were extracted and analyzed using the Statistical Software Package for the Social Sciences Version 18. An alpha level of .05 was the standard for significance.

To ensure students' privacy and to comply with the Family Educational Rights and Privacy (FERPA) Act, the data did not contain personally identifiable information. Cumulative data were not presented for any group or subgroup containing fewer than five observations.

### **Research Question One**

Data for Research Question One (Is there a significant difference between the North Carolina community college transfer students' mean GPAs before transfer and the North Carolina native students' mean GPAs at the end of the sophomore year?) included the sophomore mean GPAs of the community college transfer students per state university and mean GPAs for native students per state university at the end of their sophomore year. This data included the number of community college transfer and native students for the same timeframe (see Table 3).

An independent samples t-test of significance among the means was conducted to compare the community college students' pre-transfer mean GPA with the native students' GPA at the end of the sophomore year. Levene's Test for Equality of Variances was significant, thus the value of t for which equal variances are not assumed was used for this analysis. The results of this analysis are presented in Table 4. This analysis revealed that there was a statistically significant difference between the mean GPA of the community college transfer ( $M = 3.08$ ,  $SD = .13$ ) and native students  $M = 3.03$ ,  $SD = .21$ ;  $t(3663) = -13$ ,  $p = .00$  (two-tailed) at the end of the sophomore year. The magnitude of the differences in the means (mean difference =  $-.05$ ) was small (eta squared =  $.014$ ). These results suggest that the academic performance as measured by mean GPA at the end of their sophomore year was different for community college transfer students and native students, with community college transfer students having a higher mean GPA.

### **Research Question Two**

Data for Research Question Two (Is there a significant difference in the mean GPAs of the North Carolina community college transfer students and the North Carolina native students at

Table 3

*Average Cumulative GPA of University of North Carolina Native and North Carolina**Community College System Transfer Sophomores Who Enrolled as Juniors in Fall 2005*

Institution	Native Juniors		Community College Transfer	
	<i>N</i>	GPA	<i>N</i>	GPA
ASU	838	3.05	163	3.1
ECU	1,279	3.0	210	2.97
ECSU	184	2.86	31	3.17
FSU	269	2.63	48	2.97
NCA&T	715	2.74	10	2.86
NCCU	366	2.69	21	2.75
NCSU	1,479	3.42	200	3.27
UNC-A	195	2.97	73	3.32
UNC-CH	1,398	3.1	72	3.4
UNC-C	762	2.95	305	3.02
UNC-G	597	2.99	148	3.08
UNC-P	166	2.83	48	2.91
UNC-W	772	3.09	342	3.01
UNC-SA	*	*	*	*
WCU	422	3.0	94	3.18
WSSU	235	2.81	19	2.97

*Note.* \*Values not presented for any group or subgroup containing fewer than five observations.

Table 4

*Mean GPA of University of North Carolina Native and North Carolina Community College*

*System Transfer Sophomores at the End-of-Lower Division Coursework in 2005*

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Student	<i>N</i>	<i>M</i>	<i>SD</i>	Std. Error Mean
Native	9,677	3.0336	.20627	.00210
Community College Transfer	1,784	3.0822	.13042	.00309

---

the end of the first year in upper division coursework?) included the academic performance of the community college transfer and native students as measured by the mean GPAs at the end of their first year in upper division coursework per state university. This information included the number of community college transfer and native students for the same timeframe (see Table 5).

An independent samples t-test of significance among means was conducted to compare the community college students' mean GPA with the native students' GPA at the end of one year in upper division coursework. The results of this analysis are presented in Table 6. This analysis revealed that there was no statistically significant difference between the mean GPA of the community college transfer ( $M = 2.77, SD = .18$ ) and native students  $M = 2.77, SD = .22; t(2501) = .36, p = .72$  (two-tailed) at the end of the first year in upper division coursework. These results suggest that the academic performance as measured by mean GPA at the end of one year in upper division coursework for community college transfer students and native students was comparable.

### **Research Question Three**

Data for Research Question Three (Is there a significant difference between the average credit hours attempted in the first year of enrollment in upper division coursework for North Carolina community college transfer students and North Carolina native students?) included the average credit hours attempted for the community college transfer and native students for their first year of enrollment in upper division coursework per state university. Also, included was the number of community college transfer and native students who were enrolled at the end of their first year in upper division coursework (see Table 7).

Table 5

*End-of-First Year GPA for University of North Carolina Native and North Carolina**Community College System Transfer Students (Spring 2006)*

Institution	Native Juniors		Community College Transfer	
	<i>N</i>	GPA	<i>N</i>	GPA
ASU	818	2.92	157	2.93
ECU	1,236	2.92	159	2.77
ECSU	175	2.57	17	3.48
FSU	254	2.15	45	3.09
NCA&T	674	2.37	10	3.17
NCCU	351	2.23	17	3.07
NCSU	1,352	2.87	173	2.80
UNC-A	186	2.94	66	2.99
UNC-CH	1,374	2.73	66	2.60
UNC-C	723	2.83	278	2.58
UNC-G	567	2.91	132	2.75
UNC-P	157	2.64	39	2.77
UNC-W	725	3.01	318	2.64
UNC-SA	*	*	*	*
WCU	402	2.75	77	2.97
WSSU	226	2.58	17	3.2

*Note.* \*Values not presented for any group or subgroup containing fewer than five observations.

Table 6

*End-of-First Year GPA in Upper Division Coursework for University of North Carolina Native and North Carolina Community College System Transfer Juniors (Spring 2006)*

Student	<i>N</i>	<i>M</i>	<i>SD</i>	Std. Error Mean
Native	9,220	2.7693	.22059	.00230
Community College Transfer	1,571	2.7675	.17521	.00442

Table 7

*End-of-First Year Average Credit Hours Attempted for University of North Carolina Native and North Carolina Community College System Transfer Students (Spring 2006)*

Institution	Native Juniors		Community College Transfer	
	<i>N</i>	Credit Hours Attempted	<i>N</i>	Credit Hours Attempted
ASU	818	29.1	157	25.4
ECU	1,236	30.2	159	26.9
ECSU	175	31.8	17	25.1
FSU	254	29.3	45	24.1
NCA&T	674	30.3	10	28.9
NCCU	351	29.1	17	23.1
NCSU	1,352	29.1	173	25.7
UNC-A	186	30.0	66	27.0
UNC-CH	1,374	29.1	66	26.4
UNC-C	723	29.0	278	25.1
UNC-G	567	30.3	132	26.4
UNC-P	157	29.8	39	25.2
UNC-W	725	29.7	318	25.4
UNCSA	*	*	*	*
WCU	402	30.7	77	28
WSSU	226	29.0	17	24.3

*Note.* \*Values not presented for any group or subgroup containing fewer than five observations.



An independent samples t-test of significance among means was conducted to compare the community college students' average credit hours attempted with the native students' average credit hours attempted at the end of one year in upper division coursework. The results of this analysis are presented in Table 8. This analysis revealed that there was a statistically significant difference between the average credit hours attempted by the community college transfer ( $M = 25.79$ ,  $SD = .93$ ) and native students  $M = 29.60$ ,  $SD = .64$ ;  $t(1831) = 156.31$ ,  $p = .00$  (two-tailed) during the first year in upper division coursework. The magnitude of the differences in the average credit hours attempted (mean difference = 3.81) was large (eta squared = .96). These results suggest that the difference in academic performance as measured by average credit hours attempted during the first year in upper division coursework for community college transfer students and native students was greater than what could be expected by chance. Native students attempted significantly more credit hours during the first year in upper division coursework.

#### **Research Question Four**

Data for Research Question Four (Are North Carolina community college transfer students more likely to have end-of-year GPAs of 3.0 or higher as compared to North Carolina native students for those students enrolled at the end of their first year of upper division coursework?) included the number of community college transfer and native students per state university, whose GPAs at the end of the first year of matriculation in upper division coursework was 3.0 or higher (see Table 9). This is the minimal standard for inclusion for academic recognition in the University of North Carolina. Also, included in Table 9 is the percentage of community college transfer and native students per state university, whose GPAs at the end of the first year of matriculation in upper division coursework was 3.0 or higher.

Table 8

*Average Credit Hours Attempted During First Year in Upper Division Coursework for*

*University of North Carolina Native Juniors and North Carolina Community College Transfer*

*Students (Spring 2006)*

Student	<i>N</i>	<i>M</i>	<i>SD</i>	Std. Error Mean
Native	9,220	29.602	.6393	.0067
Community College Transfer	1,571	25.792	.9293	.0234

Table 9

*End-of-Year GPA  $\geq 3.0$  for UNC Native and NCCCS Transfer Students after One Year in*

*Upper Division Coursework (Spring 2006)*

Institution	Native Juniors			Community College Transfer		
	<i>N</i>	$\geq 3.0(N)$	$\geq 3.0(\%)$	<i>N</i>	$\geq 3.0(N)$	$\geq 3.0(\%)$
ASU	818	458	56	157	93	59.2
ECU	1236	698	56.5	159	82	51.6
ECSU	175	80	45.7	17	15	88.2
FSU	254	84	33.1	45	34	75.6
NCA&T	674	241	35.8	10	8	80.0
NCCU	351	91	25.9	17	15	88.2
NCSU	1,352	740	54.7	173	90	52.0
UNC-A	186	121	65.1	66	46	69.7
UNC-CH	1,374	820	59.7	66	29	43.9
UNC-C	723	395	54.6	278	121	43.5
UNC-G	567	346	61.0	132	73	55.3
UNC-P	157	72	45.9	39	21	53.8
UNC-W	725	491	67.7	318	144	45.3
UNC-SA	*					
WCU	402	192	47.8	77	45	58.4
WSSU	226	80	35.4	17	11	64.7
Total	9,220	4,909		1,571	792	

*Note.* \*Values not presented.

A Fisher's exact test was conducted to explore the relationship between student group (community college transfer and native students) and GPA ( $\geq 3.0$  or  $< 3.0$ ) for those enrolled at the end-of their first year in upper division coursework. This test compared the observed frequencies that occurred in GPA and student group, with the values that would be expected if there was no association between student group and GPA. The results indicated that there was a significant relationship between student group and GPA ( $\chi^2 = 4.311$ ,  $n=10791$ ,  $p = .04$ ). The frequency table revealed that a significantly greater number of native junior students demonstrated higher academic performance than was expected by chance. The frequency distributions of this analysis are presented in Table 10.

### **Research Question Five**

Data for Research Question Five (Are North Carolina community college transfer students more likely to have end-of-year GPAs of 2.0 or higher as compared to North Carolina native students for those students enrolled at the end of their first year of upper division coursework?) included the number of community college transfer and native students per state university, whose GPAs at the end of their first year of matriculation in upper division coursework was 2.0 or higher (see Table 11). This is the minimal standard for continued access to higher education in the University of North Carolina. Also, included in Table 11 is the percentage of community college transfer and native students per state university, whose GPAs at the end of the first year of matriculation in upper division coursework was 2.0 or higher (see Table 11).

A Fisher's exact test was conducted to explore the relationship between student group (community college transfer and native students) and GPA ( $\geq 2.0$  or  $< 2.0$ ) for those enrolled at the end-of their first year in upper division coursework. This test compared the observed

Table 10

*Frequency Distribution of Fisher's Exact Test for Native Juniors and Community College Transfer Students with End-of-Year GPA  $\geq 3.0$  and  $< 3.0$  after One Year in Upper Division Coursework*

Type of Student	Grade Point Average		Total
	$\geq 3.0$	$< 3.0$	
Native Juniors	4,909	4,311	9,220
Community College Transfer	792	779	1,571
Total	5,701	5,090	10,791

Table 11

*End-of-Year GPA  $\geq 2.0$  for UNC Native and NCCCS Transfer Students after One Year in*

*Upper Division Coursework (Spring 2006)*

Institution	Native Juniors			Community College Transfer		
	<i>N</i>	$\geq 2.0(N)$	$\geq 2.0(\%)$	<i>N</i>	$\geq 2.0(N)$	$\geq 2.0(\%)$
ASU	818	748	91.4	157	139	88.5
ECU	1,236	1,128	91.3	159	140	88.1
ECSU	175	145	82.9	17	17	100.0
FSU	254	180	70.9	45	44	97.8
NCA&T	674	542	80.4	10	10	100
NCCU	351	268	76.4	17	16	94.1
NCSU	1,352	1,281	88.4	173	150	86.7
UNC-A	186	178	95.7	66	61	92.4
UNC-CH	1,374	1,281	93.2	66	58	87.9
UNC-C	723	648	89.6	278	232	83.5
UNC-G	567	535	94.4	132	117	88.6
UNC-P	157	137	87.3	39	36	92.3
UNC-W	725	689	95.0	318	272	85.5
UNCSA	*	*	*	*	*	*
WCU	402	338	84.1	77	70	90.9
WSSU	226	190	84.1	17	17	100.0
Total	9,220	8,202		1,571	1,379	

*Note.* \*Values not presented.

frequencies that occurred in GPA and student group, with the values that would be expected if there was no association between student group and GPA. The results indicated that there was not a significant relationship between the groups and GPAs ( $\chi^2 = 1.878$ ,  $n=10791$ ,  $p = .18$ ). Regardless of whether the students were community college transfer or native juniors, there was the same proportion of students in each student group whose GPAs were either above 2.0 or below 2.0. The frequency distributions of this analysis are presented in Table 12.

### **Summary**

Chapter 4 presented the results of the data analyses used for this quantitative, comparative study that were designed to determine if there were differences in the academic performance (differences in GPAs and average credit hours attempted) of North Carolina community college transfer students and North Carolina native students at fifteen of the sixteen state institutions in the University of North Carolina. The sample population for this study included a cohort of full-time community college transfer and full-time native students who enrolled at North Carolina community colleges and the University of North Carolina institutions. The timeframe for enrollment was 2003-2006. Full-time was defined as an academic load of 12 or more credit hours per semester (University of North Carolina, 2006). The data for this study was generated by a cooperative effort between the North Carolina Community College System's Research and Program Management Department and the University of North Carolina General Administration.

The first three research questions were analyzed using independent samples t-tests of significance among means with alpha levels of .05. Two (Research Question One and Research Question Three) of the three research questions provided significant results. Data analyses for Research Question One pertaining to if there were significant differences between the North

Table 12

*Frequency Distribution of Fisher's Exact Test for Native Juniors and Community College Transfer Students with End-of-Year GPA  $\geq 2.0$  and  $< 2.0$  after One Year in Upper Division Coursework*

Type of Student	Grade Point Average		Total
	$\geq 2.0$	$< 2.0$	
Native	8,202	1,018	9,220
Community College Transfer	1,379	192	1,571
Total	9,581	1,210	10,791



Carolina community college transfer students' mean GPAs before transfer and the North Carolina native students' mean GPAs at the end of their sophomore year revealed there were significant differences in the community college transfer students' pre-transfer mean GPAs and the native students' GPAs at the end of their sophomore year in lower division coursework. Community college transfer students had slightly higher mean GPAs.

Research Question Three compared the community college students' average credit hours attempted with the native students' average credit hours attempted during the first year in upper division coursework. The results of this analysis revealed that there was a statistically significant difference between the average credit hours attempted by the community college transfer and native students during their first year in upper division coursework. Native students attempted more credit hours during the first year in upper division coursework.

Research Question Two compared the community college students' mean GPA with the native students' mean GPA at the end of one year in upper division coursework. This analysis revealed that there was no statistically significant difference between the mean GPA of the community college transfer students and the native students.

Data analyses for the last two questions were analyzed using Fisher's exact tests with alpha levels of .05. Results indicated there was a significant relationship with the number of end-of-year GPAs that were 3.0 or higher and North Carolina native students for those enrolled at the end of their first year of upper division coursework. The demographic data were presented in Table 11.

A Fisher's exact test also indicated there was not a significant relationship between the number of students with end-of-year GPAs that were 2.0 or higher for North Carolina community college transfer students and North Carolina native students for those enrolled at the

end of their first year of upper division coursework. The demographic data were presented in Table 12.

The data presented in this chapter is further analyzed and discussed in Chapter 5. Also, conclusions, implications, and recommendations for further study are presented in that chapter.

## **CHAPTER 5: SUMMARY, FINDINGS, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS**

### **Introduction**

This chapter presents a summary of the study, discussion of the findings, and conclusions based on the findings of the study. Also, provided are implications and recommendations for further study. The review of related literature revealed a plethora of studies on the comparative academic performance of native and community college transfer students in other states, but there was a dearth of research on the academic performance of North Carolina community college transfer students as compared to North Carolina native students at state universities in the University of North Carolina. A lack of recent research on the comparative academic performance of North Carolina native and North Carolina community college transfer students at state universities served as the impetus for this present study. This research study provided an updated perspective on the academic performance of North Carolina native students and North Carolina community college transfer students at the state universities in the University of North Carolina.

### **Summary**

Many acknowledge that community colleges have reasonable tuition and student fees, but it is the quality of the community college education that has been and continues to be questioned (Carlan & Byxbe, 2000; Culpepper, 2006; Dills & Hernandez-Julian, 2006; Roksa & Calcagno, 2008; Rosenberg & Smith, 2004). Students, who complete their first two years of higher education at community colleges, must be prepared for the rigorous coursework at four-year institutions. The purpose of this study was to provide a comprehensive update and to determine if there were differences in the academic performance of North Carolina native

students and North Carolina community college transfer students who began their higher education matriculation at selected community colleges in North Carolina and then transferred to state universities in the same state.

This study utilized a quantitative, comparative research design. A comparative research design describes a population in terms of differences between groups without manipulating them (Pallant, 2007). This research design was appropriate for this study because the student groups attended higher education institutions, but they were different as one student group attended higher education institutions (community colleges) that subscribe to the open access admission policies and the other student group attended higher education institutions (four-year state universities) that have selective admission policies.

Participants in this study consisted of a cohort of native students and community college transfer students, who were enrolled in North Carolina public higher education institutions from 2003-2006. The community college transfer students graduated with associate degrees from the college transfer curriculum at North Carolina community colleges and then transferred to North Carolina state universities in fall 2005. The native students completed all of their undergraduate studies at those same North Carolina state universities. They were classified as juniors and completed at least 60 hours of credit prior to inclusion in this study. Initially, this study included 1,784 community college transfer students and 9,677 native juniors. However, by the end of a full year in upper division coursework, the number of students remaining declined. One year later, there were 1,571 community college transfer students and 9,220 native students.

Data were analyzed for the North Carolina community college transfer students and North Carolina native students who attended fifteen of the sixteen state universities in the University of North Carolina. Data were not presented nor analyzed for the University of North

Carolina School of the Arts because this subgroup's cumulative data contained fewer than five observations. Additionally, no data were included for the seventeenth public institution in the University of North Carolina, the North Carolina School of Science and Mathematics as that institution is a high school. This study included only higher education institutions.

This study addressed the following questions about the academic performance of North Carolina community college transfer and North Carolina native students:

1. Is there a significant difference between the North Carolina community college transfer students' mean GPAs before transfer and the North Carolina native students' mean GPAs at the end of the sophomore year?
2. Is there a significant difference in the mean GPAs of the North Carolina community college transfer students and the North Carolina native students at the end of the first year in upper division coursework?
3. Is there a significant difference between the average credit hours attempted in the first year of enrollment in upper division coursework for North Carolina community college transfer students and North Carolina native students?
4. Are North Carolina community college transfer students more likely to have end-of-year GPAs of 3.0 or higher as compared to North Carolina native students for those students enrolled at the end of their first year of upper division coursework?
5. Are North Carolina community college transfer students more likely to have end-of-year GPAs of 2.0 or higher as compared to North Carolina native students for those students enrolled at the end of their first year of upper division coursework?

Using secondary data from statewide databases of student records with information on North Carolina community colleges and University of North Carolina institutions, this study

investigated and analyzed data that pertained to those five research questions. In this study, academic performance was measured by grade point averages and average credit hours attempted for the appropriate years under study.

Consistent with the five research questions developed to guide this quantitative, comparative study, appropriate statistical tests were selected to analyze the data. The statistical tests used to analyze the data were independent samples t-test of significance among means and Fisher's exact test. The independent samples t-tests of significance among means were used to analyze data associated with research questions 1, 2, and 3. For those questions, the significance level of the Levene's test of equality was less than or equal to .05, so the researcher referred to equal variances not assumed when interpreting the results. Fisher's exact tests were used to analyze data associated with research questions 4 and 5. Differences were considered statistically significant at the .05 level of probability.

### **Discussion of Findings**

The findings of the study and a discussion of the findings for each research question is shared in this section. Research Question One addressed whether there was a significant difference between the North Carolina community college transfer students' mean GPAs before transfer and the North Carolina native students' mean GPAs at the end of their sophomore year. An independent samples t-test of significance among the means compared the community college students' pre-transfer mean GPAs at the end of their lower division matriculation in 2005 with the native students' mean GPAs at the end of their sophomore year in 2005. This analysis revealed that there was a statistically significant difference between the North Carolina community college transfer students' mean GPA (3.08) and the North Carolina native students' mean GPA (3.03) at the end of their sophomore year. These findings suggest that the academic

performance as measured by mean GPA at the end of their sophomore year was different for community college transfer students and native students, with community college transfer students having a higher mean GPA. The findings for Research Question One support the findings of previous literature on other North Carolina studies. In many instances, North Carolina community college transfer students acquired higher GPAs for lower division coursework than their native student counterparts (Boswell; 1992; Glass & Harrington, 2002; Henderson, 1972; Stirewalt, 1971; Taylor, 1972).

One could speculate that these findings are due in part to the overall tendency for community colleges to be more service oriented with their open door policy. Additionally, community colleges usually have smaller class sizes. Instructors are often able to provide one-on-one assistance for their students, if needed. One could further speculate that students perhaps feel more comfortable acknowledging shortcomings or a lack of understanding of a concept in a smaller, more inclusive setting and would thereby request much needed assistance in a timely manner. Requesting this assistance possibly led to positive or increased academic performance (GPAs). Students were inspired to maintain the good grades, so they would have GPAs high enough to qualify for admission to four-year institutions. This is directly aligned with Taylor (1972) from the review of literature. He emphasized that acceptable grades mean much to students who have a background of limited academic achievement. This by no means is meant to infer that all community college students have a background of limited achievement. However, it is substantiated in the literature that many community college students do not begin their higher education matriculation on equal footing with native students (Best & Gehring, 1993; Bogart & Price, 1993; Diaz, 1992; Eckard, 1971; Hollomon & Snowden, 1996; Janicki, 2002; Johnson-Benson, Geltner, & Steinberg, 2001; Owen, 1991; Porter, 1999; Solomon, 2001).

Research Question Two addressed whether there was a significant difference in the mean GPAs of the North Carolina community college transfer students and the North Carolina native students at the end of their first year in upper division coursework. The researcher conducted an independent samples t-test of significance among means at an alpha level of .05 using the Statistical Software Package for the Social Sciences for Windows Version 18. This analysis compared the North Carolina community college students' mean GPAs with the North Carolina native students' mean GPAs at the end of one year in upper division coursework in 2006. Results revealed a significance value of .72. A value greater than .05 indicates that the difference could have occurred by chance and there is no statistically significant evidence (at the 5% level) for a difference between the two groups' academic performance.

This analysis revealed that there was no statistically significant difference between the North Carolina community college transfer students' mean GPA (2.77) and the North Carolina native students' mean GPA (2.77) at the end of their first-year in upper division coursework in 2006. These results suggest that the academic performance as measured by mean GPA at the end of one year in upper division coursework for North Carolina community college transfer students and North Carolina native students was, virtually, the same. However, there did appear to be evidence of transfer shock for the North Carolina community college transfer students and a decline in mean GPAs for the North Carolina native students after one year in upper division coursework in 2006. The North Carolina community college transfer students' mean GPAs changed from 3.08 at the end of their sophomore year of matriculation in 2005 to 2.77 one year later in 2006, a difference of .31 after one year in upper division coursework. This finding supported previous studies in which it is not uncommon for community college transfer students to experience a decrease in GPA between the last semester at their former institution and the end



of their first or second semester at their new institution (Anglin, Davis, & Mooradian, 1993, 1995; Berger & Malaney, 2001, 2003; Carlan & Byxbe, 2000; Glass & Harrington, 2002; Hills, 1965; Holahan, Green, & Kelley, 1983; Keeley & House, 1993; Laanan, 2001; Rhine, Milligan, & Nelson, 2000; Thurmond, 2007; Whitfield, 2005).

One could speculate that adjustment issues experienced by the community college transfer students in their first year in upper division coursework contributed to this finding. The North Carolina Community College System is a non-residential system. The fifty-eight community colleges are located strategically throughout the state, so as to accord students the opportunity to attend colleges within commuting distances of their homes. Many of the North Carolina community college transfer students possibly attended four-year institutions that necessitated relocating. As a result, they probably encountered lifestyle changes that are often associated with leaving home and going away to college (homesickness, making new friends, navigating a new campus that is often larger and has a different educational culture and larger class sizes, and the freedom to blaze new horizons, in which studies become secondary).

In 2005, prior to entering their first year in upper division coursework, the native students' mean GPA was 3.03. One year later, their mean GPA had declined to 2.77, a difference of .26. Consequently, the finding of this study for native students' GPAs after a year in upper division coursework contradicted previous North Carolina studies (Henderson, 1972; Stirewalt, 1971; Taylor, 1972). In those studies, native students had higher GPAs than their community college counterparts after a year in upper division coursework.

One could speculate that the native students had two years to adjust to their higher education institutions, and possibly felt comfortable enough with the educational process to

increase the number of credit hours attempted. This increase in credit hours attempted possibly contributed to a decline in their GPAs.

Research Question Three addressed whether there was a significant difference between the average credit hours attempted in the first year of enrollment in upper division coursework for North Carolina community college transfer students and North Carolina native students. To answer Research Question Three, the researcher conducted an independent samples t-test of significance among means at an alpha level of .05 using the Statistical Software Package for the Social Sciences for Windows Version 18.

This independent samples t-test of significance among means compared the North Carolina community college transfer students' average credit hours attempted with the North Carolina native students' average credit hours attempted for one full year in upper division coursework. Results revealed a significance value of .00. A value less than .05 indicates that there is a significant difference between the two groups' academic performance. This analysis revealed that there was a statistically significant difference between the average credit hours attempted by the North Carolina community college transfer students (25.79) and the North Carolina native students (29.60) during the first full year in upper division coursework. North Carolina native students attempted an average of five more credit hours during their first year of enrollment in upper division coursework as compared to their North Carolina community college transfer student counterparts. This finding is in agreement with the research findings of Owen (1991) in which native students attempted more credit hours during their upper division matriculation.

One could speculate that native students were familiar with the academic, social, and political changes at four-year institutions; therefore, they were comfortable carrying a larger

course load. On the other hand, the community colleges transfer students had to learn the new academic, social, and political environment and probably tempered the course load until they were more familiar with the students, professors, and overall composition of their new institutions.

Research Question Four addressed whether North Carolina community college transfer students were more likely to have end-of-year GPAs of 3.0 or higher as compared to North Carolina native students for those enrolled at the end of their first year of upper division coursework in 2006. To answer Research Question Four, the researcher conducted a Fisher's exact test at an alpha level of .05 using the Statistical Software Package for the Social Sciences for Windows Version 18. The Fisher's exact test compared the categorically coded data that the researcher collected (the observed frequencies) with the frequencies that one would expect to get in each cell of the contingency table by chance alone (expected frequencies). The findings revealed a significance value of .04 and indicated that there was a statistically significant relationship between student group and end-of-year GPAs of 3.0 or higher at the end of their first year of upper division coursework. The findings indicated that a significantly greater number of native juniors demonstrated higher academic performance than was expected by chance. One could speculate that since the mean GPAs for both student groups were comparable (2.77) at the end of their first year in upper division coursework, in order for a significant number of native juniors to have end-of-year GPAs of 3.0 or higher than was expected by chance, this meant that many native juniors probably had GPAs that were far below 2.77.

Research Question Five addressed whether North Carolina community college transfer students were more likely to have end-of-year GPAs of 2.0 or higher when compared to North Carolina native students for those enrolled at the end of their first year of upper division

coursework in 2006. A Fisher's exact test examined and compared the likelihood that the North Carolina community college transfer students with GPAs that were 2.0 or higher would be similar to the North Carolina native students with GPAs that were 2.0 or higher for those enrolled at the end of their first year of upper division coursework.

The results revealed a significance value of .18 and indicated there was not a statistically significant relationship between the student group and end-of-year GPAs that were 2.0 or higher. One could argue that by the end of the first year in upper division coursework, the origin (community college or four-year institution) of the pursuit of the four-year degree did not matter, as the academic performance required for continued access to higher education was comparable. Thus, this finding is in agreement with previous research studies that have found that transfer students do quite well in their new institutions (Best & Gehring, 1993; Bogart & Price, 1993; Diaz, 1992; Eckard, 1971; Hollomon & Snowden, 1996; Janicki, 2002; Johnson-Benson, Geltner, & Steinberg, 2001; Owen, 1991; Porter, 1999; Solomon, 2001).

### **Conclusions**

Based on the review of related literature and this study, several conclusions were drawn. The researcher suggests that the findings should be interpreted with caution based on the limitations of the study, as the study's findings were limited by the following:

1. Subjects in this study were limited to the data made available by the personnel at the University of North Carolina General Administration and the North Carolina Community College's Research and Performance Management Department. They belong to intact groups (college transfer curriculum graduates and native students for a particular timeframe); thereby, limiting the generalizability of the findings to the general populace.

2. This was an intrastate study of community college transfer students, no inferences were made about students who transferred to the selected institutions in the University of North Carolina from out-of-state community colleges. This could limit the generalizability of the findings to the general populace.
3. Even though, this research study began with a cohort of community college transfer students and a cohort of native students, the number of subjects in each cohort changed with time due to attrition and dismissal reasons. Attrition was the withdrawal of students from the academic institution prior to completing the requirements for the baccalaureate degree (Tinto, 1993). Dismissal was the involuntary withdrawal of students from the academic institution due to a failure to maintain adequate progress and a minimum grade point average (Best & Gehring, 1993). These factors could impact the generalizability of the results and conclusions.

An analysis of the data comparing the academic performance of North Carolina native students and North Carolina community college transfer students, who began their upper division coursework at state universities in North Carolina in fall 2005 led to several conclusions. This study found that students who completed the requirements for associates degrees from the college transfer curriculum prior to transferring from North Carolina community colleges to North Carolina state universities have equal or better academic performance than their North Carolina native student counterparts at the conclusion of their sophomore year of matriculation in lower division coursework.

Although the transfer shock phenomenon was experienced by the North Carolina community college transfer students and the North Carolina native students' grade point averages declined, there was not a significant difference between the academic performance of

the community college transfer students and the native juniors, as measured by grade point averages at the end of a full year in upper division coursework. This study revealed that North Carolina community college transfer students, who completed the requirements for associates degrees from the college transfer curriculum prior to transferring from North Carolina community colleges to North Carolina state universities, perform academically just as well as their North Carolina native junior counterparts during their first year in upper division coursework, as the mean GPA for both student groups was 2.77 at the end of their first year in upper division coursework. Several earlier studies offer support for the results of this study and affirm that students, who transferred after completing the requirements for an associate's degree or at least 60 credit hours, had academic performance that was very comparable to the academic performance of native students (Belchier, 2001; Best & Gehring, 1993; Janicki, 2002).

Just as Henderson (1972) acknowledged that the North Carolina community colleges had become major contributors of transfer students to North Carolina state universities, the same is true with this study. A total of 1,784 community college transfer students entered North Carolina state universities in fall 2005. A review of the literature revealed that this number was larger than transfers from other North Carolina four-year institutions: public (174) or private (62) (University of NC, 2006).

The North Carolina native students attempted more credit hours during their first year of matriculation in upper division coursework than did their North Carolina community college transfer student counterparts. This study affirms previous research by revealing that North Carolina community college transfer students attempt fewer credit hours during their first year in upper division coursework than their North Carolina native student counterparts.

During the first year of matriculation in upper division coursework, North Carolina community college transfer students and North Carolina native students had equal proportions of students who maintained grade point averages that qualified them for academic recognition (GPA of 3.0 or higher). Also, North Carolina community college transfer students and North Carolina native students had comparable proportions of students maintaining 2.0 grade point averages. The 2.0 grade point average is the minimal academic standard needed to ensure eligibility for continued access to the state universities in North Carolina.

The findings from this study led to the summative conclusions that North Carolina community colleges are major contributors of transfer students to the North Carolina state universities. Also, North Carolina community colleges have done a satisfactory job of preparing their transfer students who completed the requirements for associate degrees from the college transfer curriculum for equal academic performance with native juniors as measured by grade point averages earned during their lower division coursework and during their first year of matriculation in upper division coursework. The North Carolina community college transfer students were prepared for the rigorous coursework at the North Carolina state universities and had comparable proportions of students, who qualified for academic recognition, as well as continued access to higher education at the North Carolina state universities when compared to their North Carolina native student counterparts. However, the North Carolina native juniors attempted more credit hours during their first year in upper division coursework, as compared to the North Carolina community college transfer students.

## **Implications and Recommendations for Further Study**

### **Introduction**

This research highlights the importance of the North Carolina community college transfer function in the overall academic performance of students in public higher education in North Carolina. The North Carolina community college transfer students' academic performance is equal to or greater than native students. This research study indicates that the North Carolina community colleges are worthy feeder institutions for the North Carolina state universities. Furthermore, the results of this quantitative, comparative study provide a rudimentary foundation for enlightening key stakeholders (policymakers, educational leaders, student services personnel, practitioners, prospective students, and parents) on the quality of public higher education in North Carolina.

### **Implications**

Implications established from this research study indicated that the North Carolina community college transfer students who completed the requirements for associate degrees from the college transfer curriculum perform at a comparable level with the North Carolina native students. As a group, the North Carolina community college transfer students had higher GPAs at the conclusion of their sophomore year of study. Furthermore, after one year of study at the state universities, the student groups had similar mean GPAs. Perhaps, the Common Course Catalog that was developed in 1997, which led to the uniformity in course descriptions throughout the North Carolina Community College System and the North Carolina Comprehensive Articulation Agreement between the North Carolina Community College System and the University of North Carolina that were referenced in the second chapter played an important role in this, as students are required to take the same core courses during their lower



division coursework at the North Carolina community colleges and the North Carolina state universities.

This would lead one to believe that the community college transfer curriculum does an adequate job in preparing the students for rigorous coursework at the four-year institutions. The community colleges should be applauded for the contributions via their transfer students that are made to higher education in North Carolina. This further implies that academic success for community college transfer students is possible at North Carolina state universities.

A further implication is that North Carolina community colleges are appropriate places for students to begin their higher education matriculation. This is especially evident, if a person is interested in a learning environment in which class sizes are smaller and one can often receive personal attention, as needed, can attend college without leaving home, and can receive a quality education at a more affordable cost.

An additional implication of this study infers potential academic and financial consequences. If community college transfer students continue to attempt fewer credit hours per semester after transferring to the state universities, this could negatively affect funding at the state universities, as state-funding is closely linked to student credit hours. A decrease in funding could mean less instructional resources for the students and even larger classes if faculties are down-sized.

### **Recommendations for Further Study**

Although, the results of this study are encouraging for students who are interested in furthering their education beyond high school by enrolling in North Carolina public higher education institutions, the researcher hopes this study will inspire additional research and recommends consideration of the following for such research:

1. A similar study on the academic performance of students at North Carolina community colleges and state universities in the University of North Carolina that includes a comparison based on specific majors, e.g., humanities versus the sciences. Previous research indicated that community college transfer students have a tendency to perform better with humanities majors as opposed to sciences (Dupraw & Michael, 1995).
2. A similar study on the academic performance of North Carolina community college transfer students and the University of North Carolina native students that includes a comparison based on the size of the receiving institutions, e.g., student population above 7,000 undergraduate students versus student population below 7,000 undergraduate students. Minear (1998) reported that institutional size may be particularly important in adjustment to the university because it may contribute to a student's feelings of anonymity, sense of community, and level of isolation.
3. A follow-up to this study to determine if the success experienced by both student groups lasted throughout their upper division coursework. Did the students continue to maintain grade point averages that ensured continued access to public higher education and did they graduate? If they graduated, how long did it take the student groups to graduate? Did one student group graduate after four semesters of matriculation in upper division coursework with a larger percentage than the other student group?
4. A similar study on North Carolina community college transfer students who enrolled in private institutions or out-of-state institutions after completing the requirements for associate degrees from the college transfer curriculum.

5. A similar study that compared the academic performance of higher education students that would include three student groups: North Carolina native juniors, North Carolina community college transfer students who completed the requirements for associate degrees from the college transfer curriculum, and North Carolina community college students who transferred with associate degrees from non-transfer curriculum programs.
6. A similar study in which several cohorts are tracked to determine if North Carolina native students continue to attempt more credit hours in their first year of upper division coursework as compared to North Carolina community college transfer students.
7. A study that investigates the academic performance of community college transfer students from various regions of the country as compared to North Carolina native students. Higher education is bigger and broader than North Carolina.

### **Final Thoughts**

Perhaps, this study will go far in answering the many questions regarding the academic performance of the community college transfer students at four-year institutions. While these findings are not generalizable to the overall higher education community, they do offer an updated peek into the ongoing relationship between community colleges and four-year institutions.

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## APPENDIX: INSTITUTIONAL REVIEW BOARD APPROVAL LETTER



### EAST CAROLINA UNIVERSITY

University & Medical Center Institutional Review Board Office

1L-09 Brody Medical Sciences Building • 600 Moye Boulevard • Greenville, NC 27834

Office 252-744-2914 • Fax 252-744-2284 • [www.ecu.edu/irb](http://www.ecu.edu/irb)

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**Date:** August 12, 2010

**Principal Investigator:** Vera J. Palmer  
**Dept./Ctr./Institute:** College of Education  
**Mailstop or Address:** 643 Cole Farm Rd.  
Warrenton, NC 27589

**RE:** Exempt Certification  
**UMCIRB#** 10-0420  
**Funding Source:** unfunded

**Title:** "A Comparative Study of the Academic Performance of Community College Transfer Students and Native Students at Selected State Universities in North Carolina"

Dear Ms. Palmer:

On 8.10.10, the University & Medical Center Institutional Review Board (UMCIRB) determined that your research meets ECU requirements and federal exemption criterion #4 which includes research involving the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens, if these sources are publicly available or if the information is recorded by the investigator in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects. NOTE: 1) This information must be existing on the date this IRB application is submitted. 2) The data collection tool may not have an identifier or code that links data to the source of the information.

It is your responsibility to ensure that this research is conducted in the manner reported in your Internal Processing Form and Protocol, as well as being consistent with the ethical principles of the Belmont Report and your profession.

This research study does not require any additional interaction with the UMCIRB unless there are proposed changes to this study. Any change, prior to implementing that change, must be submitted to the UMCIRB for review and approval. The UMCIRB will determine if the change impacts the eligibility of the research for exempt status. If more substantive review is required, you will be notified within five business days.

The UMCIRB Office will hold your exemption application for a period of five years from the date of this letter. If you wish to continue this protocol beyond this period, you will need to submit an Exemption Certification Request at least 30 days before the end of the five year period.

Sincerely,

Chairperson, University & Medical Center Institutional Review Board

pc: Dr. James O. McDowelle