THE RELATIONSHIP BETWEEN STUDENT INVOLVEMENT FACTORS AND GRADUATION RATES OF NONTRADITIONAL STUDENTS ATTENDING A PUBLIC COMMUNITY COLLEGE IN THE SOUTHEAST

by

TODD GLEN JONES

(Under the Direction of Desna Wallin)

ABSTRACT

The purpose of this quantitative study was to examine the relationship between involvement types and risk factors that may have contributed to the degree completion for a group of nontraditional community college students. Alexander Astin's (1975, 1993) student involvement theory has been used for over forty-years to examine student persistence rates of traditional students attending four-year institutions. This research study expanded the work of Astin (1993) to include nontraditional students who graduated from a public community college in the Southeast.

The participants in this study consisted of 124 graduates from a public community college located in the Southeast. The data obtained in this study were analyzed using *ANOVA tests, t-tests,* and *randomized block design* in order to examine the relationship between the risk factors and involvement levels of the community college graduates.

The results of this study revealed that the majority of graduates in this population were considered to be moderately nontraditional (79%) since they exhibited at least two or three risk factors. The leading risk factors associated with this sample of students were part-time

enrollment at 73.20%, being financially independent at 64.95%, and delayed enrollment in college at 42.39%. The statistical analyses employed in this study revealed that nontraditional students who completed their degrees indicated they had significantly higher levels of academic involvement and interaction with peers than with other types of involvement. In addition, females in this study were found to exhibit significantly higher levels of academic involvement than males.

The results of this study support findings from national studies that indicate the dramatic shift in student populations nationwide especially at two-year institutions (NCES, 2008). Since the majority of today's college students exhibit at least one risk factor, researchers need to re-conceptualize their understanding of what it means to be a traditional student in today's college setting. Researchers must also re-examine retention theories that were based largely on homogeneous student populations. If not, graduation rates will continue to remain unchanged.

INDEX WORDS: Community colleges, two-year colleges, nontraditional students, adult students, Astin, involvement theory, involvement factors, Horn, risk factors, and graduates

THE RELATIONSHIP BETWEEN STUDENT INVOLVEMENT FACTORS AND GRADUATION RATES OF NONTRADITIONAL STUDENTS ATTENDING A PUBLIC COMMUNITY COLLEGE IN THE SOUTHEAST

by

TODD GLEN JONES

A.S., Young Harris College, 1989

B.A., Berry College, 1991

M.A., Ball State University, 1994

A Dissertation Submitted to the Graduate Faculty of The University of Georgia in Partial Fulfillment of the Requirements for the Degree

DOCTOR OF EDUCATION

ATHENS, GEORGIA

2012

THE RELATIONSHIP BETWEEN STUDENT INVOLVEMENT FACTORS AND GRADUATION RATES OF NONTRADITIONAL STUDENTS ATTENDING A PUBLIC COMMUNITY COLLEGE IN THE SOUTHEAST

by

TODD GLEN JONES

Major Professor: Desna Wallin

Committee: Laura Bierema
John Schell
Khalil Dirani

Electronic Version Approved:

Maureen Grasso
Dean of the Graduate School
The University of Georgia
May 2012

DEDICATION

This dissertation is dedicated to my family who has been very patient, understanding, and supportive through this whole process.

ACKNOWLEDGEMENTS

My doctoral journey has been an interesting but rewarding experience and I am better for this journey both personally and professionally. My wife, Charlotte, has been truly supportive and understanding through the whole process and is no doubt the main contributor to my own persistence rate. In addition, my two children Kaylee and Jarred, continue to keep me humble and are two of my greatest motivations on this earth for all that I do. I would be remiss if I did not thank my parents Terry and Linda Jones, for all they have done for me in making education a priority and especially for keeping their grandchildren many a night so that I could research and write in a quiet household.

I am deeply appreciated of my dissertation committee for their support and guidance throughout this process. Special thanks to Dr. Desna Wallin, major professor, for all her guidance, edits and patience. Thanks to Dr. Khalil Dirani, methodologist, who helped guide me through the development of the survey instrument and challenged me on my understanding of appropriate research questions. Thanks to Dr. John Schell and Dr. Laura Bierema whose challenging questions and constructive critiques proved invaluable throughout the development of this research study.

Special thanks to the members of the CTCLI cohort for their constant support and from whom I gained so much knowledge throughout the last five years. The cohort members are Sue Chandler, Al Cunningham, Alycia Ehert, Rodney Ellis, Valery Hall, Amy Holloway, Susan Isaac, Stan Lawson, Ron Newcomb, Stuart Phillips, Cindy Rumney, Jodie Vangrov and Jana Williams.

TABLE OF CONTENTS

Page

APPENDICES

LIST OF TABLES

Page

LIST OF FIGURES

Page

CHAPTER 1

Introduction

Background of the Study

In 2006, Secretary of Education Margaret Spellings released the findings of a year-long study on the education system in The United States titled *A Test of Leadership: Charting the Future of U.S. Higher Education* and ushered in a new era of accountability in higher education for publicly funded institutions. The Spellings Report (2006) noted,

> We urge the creation of a robust culture of accountability and transparency throughout higher education. Every one of our goals, from improving access and affordability to enhancing quality and innovation, will be more easily achieved if higher education institutions embrace and implement serious accountability measures. (p. 21)

The recommendations provided by the Spellings report left little doubt that institutions of higher education will be required to improve the retention and graduation rates of their students or risk losing valuable financial support from federal and state governments.

Even with a new administration in the White House, the pressures for institutions of higher education to improve retention and graduation rates have not only continued but have intensified. In his first address to Congress, President Barack Obama pledged to make this country number one again in adult baccalaureate degree attainment by 2020 by graduating over five million students within the next ten years (Obama, 2009a). Although higher education in general has received a great deal of attention, community colleges are specifically receiving unprecedented national attention. President Obama explained that "In the coming years, jobs

requiring at least an associate degree are projected to grow twice as fast as jobs requiring no college experience, we will not fill those jobs — or keep those jobs on our shores —without the training offered by community colleges" (Obama, 2009a). In order to reach this goal of adding five million new graduates by 2020, President Obama proposed the American Graduation Initiative that would provide $12 billion in federal funds to community colleges nationwide (Obama, 2009b). Unfortunately after making the journey through the legislative process the amount originally proposed by Obama was reduced to $2 billion in federal funds (H.R. 4872, 2010). However, the statements made by the President of the United States and the $2 billion being provided to community colleges do emphasize the increasing role the community colleges are expected to play in the coming years in retraining the unemployed for new careers. Never before has the community college sector received so much attention and never before have the challenges been so great.

The challenges in meeting the federal government's graduation objectives seem insurmountable when one considers the poor graduation rates of our nation's community colleges. Tinto (2002) explains that enrollment estimates demonstrate that only 27% of students who begin at a two-year college with the intent to earn a four-year degree will do so compared to 67% who start at a four-year institution. In *Transfer between Community Colleges and Four-Year Colleges: The All-American Game*, Hagedorn, Moon, Cypers, Maxwell, and Lester (2004) noted the following:

> It would be difficult to find anyone who would disagree that community college transfer rates are lower than optimal. Despite widespread acknowledgement of a problem and the myriad solutions suggested in both research articles and in single-institution efforts, the problem has not abated. (p. 1)

The poor completion rates within the nation's community colleges are well documented and may be attributed in part to the differences between community college students and students attending a four-year institution (Bailey, Jenkins, & Leinbach, 2005; Cohen & Brawer, 2003; NCES, 2005, 2006, 2008; McClenney, 2011). According to Cohen and Brawer (2003), the demographics of community college students are quite different than their peers at four-year institutions. Shaw (1999) notes that "the demographics of community college students reveal a student population that is striking in its diversity, and in its diversion from what is considered to be the 'traditional' college student" (p. 155). Understanding these differences among community college students and the impact of these differences on retention and graduation rates led to the development of research focused on the community colleges.

One such study that seeks to understand how community college students are different and how effective community colleges are in engaging their students is the annual Community College Survey of Student Engagement (CCSSE). This survey is conducted at hundreds of community colleges nationwide each year and continues to demonstrate the challenges community colleges have in engaging their students. McClenney (2002) explains that colleges have little opportunity to engage community college students because of the various demands on their time. She notes nearly two-thirds of students surveyed through the annual Community College Survey of Student Engagement attend college part time; more than half worked more than 20 hours a week; and 21% spent more than 11 hours per week caring for dependents. The many responsibilities community college students outside the classroom impact their ability to earn a college degree. This impact is exacerbated by the large percentage of these community college students being nontraditional students.

The poor attrition rates of nontraditional college students compared to the student population is well documented (Bailey, Jenkins, & Leinbach, 2005; Headden, 2009; McClenney, 2002, 2011). Headden (2009) notes that nontraditional students have a much higher dropout rate (38.9 %) compared to traditional students (18.2 %). This comparison becomes a greater concern when considering the fact that nontraditional student enrollment is increasing at the same time community colleges are being asked to improve their graduation rates. Based upon age alone, the enrollment of students age 25 and older rose by 18% between 1990 and 2005. From 2005 to 2016 nontraditional enrollment is projected to increase by 21%, compared to only 15% of students under the age of 25 (Snyder, Dillow, & Hoffman, 2007). However, these projections were made prior to the recession and the soaring unemployment rates that began in 2009. The continued recession and growing unemployment rates could potentially increase these projections of nontraditional enrollment considerably.

The poor graduation rates of nontraditional students is attributed to the many barriers nontraditional students encounter on their path to degree completion including the need to work, family responsibilities, and low levels of academic preparation (Wirt, et al., 2004). Nationally, nontraditional students have higher attrition rates than traditional students. According to a five year longitudinal study of student retention and persistence rates completed in 2000, only 26.7% of nontraditional students earned an associate degree compared with 53.4% of traditional students (NCES, 2002). These disappointing completion rates for nontraditional students indicate community colleges have much to do to meet the federal government's objective to graduate over five million graduates in the U.S. over the next ten years and that more research is needed about this growing nontraditional student population.

While nontraditional students have been enrolling in colleges and universities for over sixty years, there is still a great deal that is unknown about this growing and diverse group of students. Pusser, et al. (2007) explain that adult students move in and out of college as the external demands of their lives change, and these students "are often enrolled in programs poorly documented by traditional postsecondary data-collection systems" (p. 3). One of the greatest obstacles in gaining a better understanding of these students is found in the inconsistency among scholars in simply identifying and defining nontraditional students. A review of the literature on nontraditional students shows these students have been identified by their age, by certain background characteristics, and as students that have one or more at-risk factors that can affect their ability to earn a college degree (Broschard, 2005). Although age and background characteristics are still used to define nontraditional students by some scholars, defining students by their at-risk factors has gained increasing attention since this definition was first developed by Horn in 1996 for the National Center for Educational Statistics (NCES) annual survey.

Horn (1996) identified nontraditional students for the NCES by using information on enrollment patterns, employment status, financial dependency status, and high school graduation status. Based in large part on the lived experiences of students, Horn (1996) identified and used the following seven at-risk factors to help define the nontraditional student: a student who: (a) delays enrollment and does not enter college in the same year he/she completes high school, (b) attends part-time for at least part of the academic year, (c) works at least 35 hours per week while enrolled, (d) is considered financially independent for purposes of determining financial aid eligibility, (e) has dependents other than a spouse, (f) is a single parent, or (g) does not have a high school diploma. These at-risk factors are placed along a continuum to determine the number of at-risk factors a student may exhibit. These factors allow researchers to label students

as “minimally nontraditional” if they have only one of these factors, “moderately nontraditional” if they have two or three factors and “highly nontraditional” if they have four or more of these factors. Horn (1996) explains that students who exhibit any of these at-risk factors are less likely to earn a college degree or remain enrolled after five years compared to traditional students and that students who are considered “highly nontraditional” are at the greatest risk for not earning a college degree. According to research conducted by Choy (2002), approximately 90% of students enrolled at two-year institutions exhibit at least one of the seven at-risk factors compared to only 58% of students attending a public four-year college. Based upon the latest research conducted by NCES (2008), nontraditional students now account for approximately 70% of all college enrollments. Using Horn’s methodology to identify nontraditional students indicates this group of students, once considered the minority on college campuses, is now the majority at colleges nationwide.

Applying Horn’s (1996) methodology allows scholars and institutions the opportunity to compare their data to national findings and identify the most common at-risk factors influencing the graduation rates of the majority of their students. By identifying these risk factors, institutions can gain a better understanding of the issues likely to influence the completion rates of their students and then apply targeted retention strategies to help address these issues.

One of the leading theories guiding the development of retention strategies on college campuses has been Alexander Astin’s (1975, 1984,1993, 1996) Student Involvement Theory. This theory postulates a greater level of involvement in college leads to increased levels of academic and personal development, as well as an increased likelihood of students achieving their desired educational outcome. The types of involvement include academic involvement, extracurricular involvement, peer interaction, and interaction with faculty and staff. These types

of involvement have been positively correlated with favorable development outcomes and increased persistence rates (Astin, 1991, 1993, 1999; Graham & Gisi, 2000; Kuh, 2003; Pascarella & Ternzini; 2005). However, the majority of this research has been conducted on traditional students attending four-year residential institutions. Additional research is needed to address the growing population of nontraditional students enrolling in the nation's two-year colleges.

As two-year colleges continue to face shifts in student demographics and increasing pressure from the federal government to improve retention and graduation rates, the need for increased student retention research has grown significantly. This need is especially evident in the area of two-year colleges, which have largely been ignored in student retention studies for many years. In their book, *How College Affects Students*, Pascarella and Terenzini (1998) estimated that less than 5% of studies involving student retention have focused on community colleges. The authors explained, "This empirical black hole means we are functioning in virtual ignorance of the educational impact of one of the nation's most significant social institutions" (p. 155).

Statement of the Problem

In the last two decades, colleges and universities have encountered increased pressure from students, parents, and government officials to become more accountable and improve their retention and graduation rates. The pressure for colleges to become more accountable and improve graduation rates intensified in 2006 when the bipartisan Commission on the Future of Higher Education sponsored by U.S. Secretary of Education Margaret Spellings commented on the low graduation rates and rising college costs and noted the following:

> Compounding all of these difficulties is a lack of clear, reliable information about the cost and quality of postsecondary institutions, along with a remarkable absence of accountability mechanisms to ensure that colleges succeed in educating students (p. x).

In 2008, Education Sector conducted a comprehensive review of state higher education accountability systems and found that although a number of states where collecting valuable information, no state was collecting all of the information that was available and that few even come close (Carey & Adleman, 2008). In an effort to respond to the increased call for accountability and improved graduation rates, many colleges are revisiting various student development theories to discover ways of improving their retention, progression, and graduation rates.

One of the most prominent and researched student development theories in higher education that seeks to understand why some students leave college and others persist through graduation is Astin's Student Involvement Theory. Based on the results of a longitudinal study involving over 200,000 undergraduates, Astin (1975) discovered that almost every significant effect on student persistence could be rationalized in terms of the involvement concept. In other words, students who became involved in the college campus were more likely to remain enrolled in their current college and those students that did not become involved were more likely to drop out. However, studies surrounding Astin's Student Involvement Theory have primarily focused on traditional students attending four-year residential institutions. Whether Astin's theory is applicable to community colleges, the research is limited and unclear.

The need for additional retention and persistence research on students attending community colleges is important since the majority of college student enrollment appears to be nontraditional (Choy, 2002; NCES, 2008). According to Horn (1996), nontraditional students

are often identified as having one or more risk characteristics that can impede their ability to graduate. These risk characteristics that were previously described emphasize some of the challenges that are unique to nontraditional students and how these challenges can influence college completion rates.

In addition to these risk factors, there are a number of demographic variables to consider when examining student populations. Age, gender, and ethnicity have all been determined to be important background characteristics to consider when examining the lives of college students. Each of these background characteristics combined with the college environment tend to impact a student's ability to persist and earn a college degree. Adult education scholars have focused considerable attention to these background characteristics and continue to devote a great deal of attention on how these background characteristics influence the develop and learning process for students (Clark & Cafferella, 1999; Gilligan, 1982; Josselson, 1987; Magolda, 1992; Wlodkowski, Mauldin, & Ghan, 2001).

The limited research surrounding college completion rates for nontraditional students attending two-year colleges indicates that nontraditional students tend to leave college at a rate of 38.9% higher than traditional students (Headeen, et. al, 2009). In 2001, almost 60% of nontraditional students left their institutions before earning a college degree (Wlodkawski, Maudlin, & Ghan, 2001). These disappointing completion rates suggest additional research is needed to understand the differences among traditional and nontraditional student graduation rates and what involvement factors may lead to successful degree completion for nontraditional students attending a community college. In addition, many of these studies have focused their efforts on retention rates from one semester or one year to the next and few have focused on

students that have graduated. Therefore, more is known about why students leave college and less is known about why students persist to graduation.

Purpose of the Study

Using Alexander Astin's (1996) Student Involvement Theory as the conceptual framework, the purpose of this quantitative study was to examine the involvement factors that may have contributed to the degree completion of nontraditional students attending a public community college in the South. This study was guided by the following research questions:

1. What are the predominant nontraditional risk factors of this student population?
2. What risk factors of nontraditional graduates are related to their levels of involvement?
3. What are the differences in involvement levels of nontraditional and traditional student graduates?
4. What types of involvement levels are found to be significant for nontraditional students?

Significance of the Study

This study may provide several contributions to theory and practice for the community college sector. The results of this study may contribute to the limited amount of student involvement literature that exists in relation to nontraditional students attending a community college (Pascarella & Terenzini, 1998; Broschard, 2005). Although there is a great deal of information about the success and value of Astin's student involvement theory at four-year institutions, the relevance to nontraditional students attending community colleges is unclear.

This study may also add to the current knowledge base regarding nontraditional students attending a community college and how involvement impacts graduation rates. Unlike many

studies that have focused on the retention rates of students from one semester or one year to the next, this study examined the experiences of students who have earned a two-year college degree. There are still major gaps in the literature that exist on the persistence of nontraditional students, particularly beyond their first year (Nora, Barlow, & Crisp, 2005). While gaining an understanding of why students leave college is important, understanding the factors that influence a student's ability to persist and earn a college degree is equally important. Further, since much of the existing literature defines nontraditional students by age (Broschard, 2005), this study may contribute to the nontraditional literature by using Horn's (1996) risk factors to identify nontraditional students.

By identifying nontraditional students by their risk characteristics, institutions are better able to develop appropriate retention strategies for the most common risk characteristics influencing their nontraditional student population. The use of risk factors have been used by the national center for education statistics for over a decade to identify nontraditional students and provides some consistency in identifying these students and allows researchers to compare results to findings from national studies. In addition, the results of this study may provide data on what types of involvement activities may influence the graduation rates of this growing population.

The continued growth of nontraditional students emphasizes the need for additional research on a student population who predominately began their enrollment journey at a community college. Alexander Astin's Student Involvement Theory (1991, 1993, 1996) has been identified as a powerful tool to assist college administrators in developing strategies to improve retention and graduation rates. Despite over 40 years of research surrounding the student involvement theory, there have only been a handful of studies which have examined

nontraditional students attending community colleges. A plethora of research studies have validated Astin's findings in relation to the factors that influence student development (Astin, 1975, 1984, 1993; Broschard, 2005; Fourbert & Grainger, 2006; Graham & Gisi, 2000; House, 2000; Johnson, 2006; Kuh et. al., 2006; Spitzer, 2000; Tinto, 2002, Ullah & Wilson, 2007; Umbach & Wawrzynski, 2005). These factors have been identified as academic involvement, extra-curricular involvement, peer interaction, and interaction with faculty and staff. However, the majority of these studies were conducted at four-year residential institutions and only a few studies have applied the involvement theory to the lives of nontraditional students. This lack of research clearly shows the need for additional studies related to nontraditional students attending community colleges in an effort to gain a better understanding of the factors that influence the ability of nontraditional students to persist and earn a college degree.

Summary

This chapter examined the unprecedented attention that higher education is receiving in relation to improving the nation's college graduation rates. In the midst of budget cuts and growing enrollment, colleges are being asked to increase the graduation rates of college students that have remained relatively unchanged over the last forty years. One of the main challenges identified in this chapter is the dramatic increase in the number of students enrolling with a number of risk factors that have been identified by scholars to be detrimental to college completion rates (Horn, 1996, NCES 2005). Unlike many of the studies that examined currently enrolled students and the reasons why students leave college, this study looked at a sample of community college graduates to determine the impact various involvement factors may have played in their ability to graduate from a two-year institution.

Definition of Terms

The following terms are used throughout this study:

Academic Involvement: The amount of time and energy a student devotes to academic related activities such as studying, visiting the tutoring center, participating in an honors club, or service learning projects.

Degree Attainment: A student who has met the requirements for his or her degree.

Extracurricular Involvement: The amount of time and energy a student devotes to activities sponsored by the institution such as clubs, intramural sports, or cultural events.

Faculty Involvement: The amount of time and energy that a student devotes to the interaction with faculty members in and out of the classroom.

Nontraditional Student: A student who exhibits at least one of Horn's (1996) at-risk factors. These factors include the following: a student who (a) delays enrollment and does not enter college in the same year they complete high school, (b) attends part-time for at least part of the academic year, (c) works at least 35 hours per week while enrolled, (d) is considered financially independent for purposes of determining financial aid eligibility, (e) is a single parent, (f) does not have a high school diploma, or (e) is a military veteran.

Peer Involvement: The amount of time and energy a student devotes to interactions with fellow students which may include interactions both in and out of the classroom.

Persistence: A student remaining in college until the completion of his or her educational goal.

Retention: A student who successfully completed the courses in which he or she was enrolled for a semester and registers for a subsequent term.

Staff Involvement: The amount of time and energy a student devotes to the interaction with college staff members in and out of the classroom.

Traditional Student: A student who does not exhibit any of Horn's (1996) at-risk factors.

CHAPTER 2

Review of Literature

Using Alexander Astin's Student Involvement Theory as the conceptual framework, the purpose of this quantitative study was to examine the involvement factors that may contribute to the degree completion of nontraditional students attending a public community college in the South. The review of literature is organized into four major sections that were developed around the primary constructs of the community college, the challenges community colleges face in retaining and graduating students, the ever increasing nontraditional student population, and the development of Alexander Astin's student involvement theory. Other sections include a summary of this chapter and a discussion of the implications for this study.

Introduction

The need to improve the retention and graduation rates of community college students has never been so important. A declining economy has left millions of Americans without employment and with job skills that sorely need updating. According to the U.S. Department of Labor's Statistics (2011), the unemployment rate jumped from 5% in April 2008 and has remained above 9% with some states still reporting above a 10% unemployment rate. Many of these displaced workers are making their way to their local community colleges in an attempt to update their job skills. The American Association of Community Colleges (2009) reports that approximately 27% of the enrollment growth at community colleges last year was a result of these displaced workers.

In response to these soaring unemployment rates and the need to increase the number of Americans with college degrees, the Federal Government has pledged over two billion dollars to the community college sector over the next several years. However, many of these funds available to the community college sector must be earned by demonstrating to the Federal Government that the institutions have improved their graduation rates. Therefore, it becomes critical that community colleges invest more time and energy into improving the retention and graduation rates of their students.

The GALILEO System at the University of Georgia Library was used as the primary search engine for the studies reviewed in this chapter. The data bases that were used included ERIC, Dissertation Abstracts, EBSCO Electronic Journals Service, EBSCOhost Databases, and Education Full Text. The key words used included the following: student involvement, involvement community college, nontraditional involvement, involvement persistence, involvement peers college, adult student, nontraditional student, nontraditional retention, community college retention, Astin involvement theory, Astin community college, Astin nontraditional student.

The Increasing Role of the Community College

The community college has become an essential component in the American higher education system and has positioned itself to offer access to a growing and diverse student population. During 2007, the American Association of Community Colleges (AACC) reported that over eleven million students were enrolled in community colleges and that approximately six and a half million of these were enrolled in credit based courses (AACC, 2007). According to the AACC (2007), these enrollment figures represent almost half of all undergraduate enrollments in the United States. Furthermore, the community college is playing a larger role in

assisting students in earning a four-year college degree. Cohen (2003) explains that 40 percent of students that earn a bachelor's degree each year have earned at least some credits at a community college. This is important to note because the need for a college degree has never been so important.

More and more jobs in America are requiring a college degree and it is predicted that over the next five years that 80% of the fastest-growing occupations in the U.S. will require at least an associate's degree and approximately half will require a bachelor's degree or higher (Bureau of Labor Statistics, 2005). Unfortunately, despite having one of the highest college participation rates in the world, the United States ranks in the bottom half in terms of degree completion, and has fallen to the bottom in baccalaureate degree completion (NCPPHE, 2006; OECD, 2007). As the economy continues to struggle, there is little doubt that community college enrollments will continue to grow as families look for more affordable options for degree completion. Despite more students graduating with bachelor's degrees that have earned at least some credit at the community college, retention and graduation rates within the community college sector remain poor (Hagedorn et al., 2004). McClenney (2011) found that fewer than half the community college students that enroll with the intent to earn a degree or certificate do so within six years. These poor completion rates from community colleges emphasize the need for additional research to understand this unique institution of higher education and the students that attend them.

The community college is a unique institution within the American higher education system. Most community colleges espouse multiple missions that often include general liberal arts education, career training, workforce development, remedial education, community development, and in some institutions a variety of social services such as adult literacy programs

and citizenship training. Two-year colleges are also considered to be access institutions and as such have lower academic requirements for admissions, remedial education programs, and lower tuition and fee expenses. In addition, flexible course scheduling options which include evening, weekend, online and accelerated programs are available for students. Carlan (2001) noted that nontraditional students are well represented at two-year campuses and may actually prefer the community college setting to four-year institutions due to their ability to include flexible course offerings. As a result, there has been an increase in enrollment of nontraditional students at community colleges and the number of programs being developed to meet the needs of older and more diverse students has also grown steadily (Kirby, Biever, Martinez, & Gomez, 2004).

Enrollment at two-year colleges has been directly influenced by the factors addressed above thus influencing the diversity of students that choose to attend two-year colleges. The "community college serves a broader sector of the local population than does any other institution" (Cohen & Brawer, 2003, p. 56). In fall 2005, approximately 19 percent of community colleges had minority enrollments that were 50 percent or more of their total enrollment compared with 15 percent of public four-year institutions (NCES, 2008). Unfortunately, the multiple missions and open access policies provided by two-year colleges which have attracted nontraditional students have also challenged the two-year institutions ability to retain and graduate students.

Challenges for Community Colleges

Despite almost forty years of retention research, community colleges continue to be challenged to find appropriate solutions for their poor retention and graduation rates. In *Transfer between community colleges and four-year colleges: The All-American game* (Hagedorn, et. al., 2004) noted the following:

> It would be difficult to find anyone who would disagree that community college transfer rates are lower than optimal. Despite widespread acknowledgement of a problem and the myriad solutions suggested in both research articles and in single-institution efforts, the problem has not abated. (p. 1)

In 1995-96, only 8% of first-time college students at community colleges were still enrolled with 45% transferring or earning a certificate or degree and 47% simply stopped attending (Bailey, Jenkins, & Leinbach, 2005). In 2001, it was estimated that almost 60% of nontraditional students left their institutions before earning a college degree (Wlodkawski, Maudlin, & Ghan, 2001). Tinto (2002) went so far as to state that "entry to a four-year college or university is preferable to entry to a two-year college" (p. 24). This is because students are more likely to earn a four-year degree if they start at a four-year institution. Tinto (2002) explains that enrollment estimates demonstrate that approximately 65% of students that start at a four-year institution with the intent to earn a degree will earn that degree but only 27% of students who begin at a two-year college with the intent to earn a four-year degree will do so. Of course, a number of explanations have been provided to describe the differences between completion rates at four-year versus two-year colleges but one of the most documented is the lack of academic preparedness of many two-year college students.

Lack of academic preparedness. In a longitudinal study of high school sophomores that were monitored for thirteen years, Cabrera, LaNasa, and Burkum (2001) found that well-prepared high school students succeeded at a much higher percentage rate than did poorly prepared students regardless if they attended a four-year or two-year college. Students that were academically well-prepared had a 77.7% degree completion rate at four-year colleges and 57% at two-year colleges. Students that were not academically prepared for college had only a 10.1%

completion rate at four-year colleges and a paltry 2% at two-year colleges (Cabrera, LaNasa, & Burkum, 2001). According to these figures, only 3 out of 100 poorly prepared high school graduates were able to earn a four-year college degree. Howell (2001) explains that many students attending two-year colleges are inadequately prepared, both academically and socially, for college level learning. In a national study on remedial courses conducted by Strong American Schools (2008) entitled *Diploma to Nowhere,* it was reported that over one million new students who enrolled in college were placed in remedial courses in college during the 2007 academic year. In addition, four out of five students in remedial courses had a high school GPA of 3.0 or above. Even more astounding are the statistics from states like Oklahoma and Indiana which reported over 70% of their new freshman attending community colleges were enrolled in at least one remedial course. It is disheartening that almost half of the new students enrolling in the nation's community colleges are required to enroll in remedial courses based upon their scores on college level placement exams. Although being academically unprepared for college level work is one of the main explanations for poor graduation rates from community colleges, there are other factors to consider.

Low socioeconomic status. In addition to a large percentage of community college students that are academically unprepared for the rigors of college work, many students enrolled at community colleges are more likely to be from families with low socioeconomic status (SES). Unfortunately, it has been well documented that students from low SES backgrounds are less likely to receive strong secondary school preparation, have lower educational aspirations, and less family support than their middle and upper income peers (Kuh, et al., 2006). These factors leave many community college students at a great disadvantage before they enroll in college.

Community college students are more likely to be financially independent of their parents than their peers at four-year institutions. McClenney (2002) indicates that more than half of community college students do not receive financial support from their parents. For those students that are dependents of their parents, approximately one-quarter have family incomes under $25,000 per year (Cooley, 2000). Students from family incomes with less than $30,000 a year are less likely to persist in college (Choy, 2001) and minorities who represent the largest portion of families with low SES are less likely to earn a college degree compared to their peers from middle income families (Swail et al., 2005). Students from low SES backgrounds arrive to college with many disadvantages and are often faced with other factors that compete with their time in academic pursuits such as poor study skills, lack of family support, or having to work.

Time constraints of community college students. Many scholars suggest that there are a number of factors that influence the amount of time a community college student has to devote to their college experience and therefore impacts their ability to earn a college degree (Astin, 1975, 1984, 1993, 1999; Horn, 1996; Tinto, 1998; Bean & Metzner, 1996; McClenney, 2002; Rendon & Nora, 1994). McClenney (2002) explains that colleges have little opportunity to engage community college students because of the various demands on their time. She notes that nearly two-thirds of students surveyed through the annual Community College Survey of Student Engagement attend college part-time; more than half worked more than twenty hours a week; and twenty-one percent spent more than 11 hours per week caring for their dependents. These factors and others that compete for a student's time suggest that many community college students have greater challenges when it comes to finding time to study and become actively involved in their learning environment. Nontraditional students are often referred to as students

that exhibit attributes that compete with their involvement in their academic learning environment.

Defining Nontraditional Students

In reviewing the literature, it quickly becomes apparent that there is no consistent definition for the term nontraditional student. This student population may be represented by many different college student profiles. Through the years, nontraditional students have been described in the literature as being from any part of the country; from various ethnic groups; from any social class; employed full or part-time or retired; with or without dependents; married, divorced, or single; enrolled full-or part-time; graduate or undergraduate; degree seeking or taking courses for personal enrichment; and represent a wide range of ages (Astin, 1975; Bean & Metzner, 1985; Bishop-Clark & Lynch, 1992; Horn, 1996; Johnson, 2006; Metzner & Bean, 1987; Nora, Attinasi, & Matonak, 1990; Pascarella & Terenzini, 1979). This wide spectrum of characteristics has made it challenging for scholars, administrators, and policymakers to identify and understand this truly diverse population of students in higher education. Pusser, et al., (2007) note that adult students move in and out of college as the external demands of their lives change, and they "are often enrolled in programs poorly documented by traditional postsecondary data-collection systems" (p. 3). Nontraditional students enroll in college for a multitude of reasons, represent almost every student demographic, and are extremely difficult to identify and track making consistent and reliable research findings on nontraditional students somewhat of an enigma. However, after reviewing the literature pertaining to nontraditional students it becomes obvious that nontraditional students have been defined through the years by using three distinct definitions. The definitions used to describe nontraditional students have

included the use of age, certain background characteristics, and in more recent years the use of seven at-risk factors for attrition.

Nontraditional defined by age. One of the most popular definitions found in literature for nontraditional students has often centered on the use of age. The most prevalent age used to describe nontraditional students appears to be that of 25 or older. Kasworm, Polson, and Fishback (2002) note the following:

> 25-years-and older age category to define adult students presents a practical way to separate and define a group of students who have greater maturity, more complex life experiences, as well as more significant heterogeneity and complexity than those who are younger. (p. 3)

Although the use of age 25 has been the most predominate age used in literature, one of the difficulties of obtaining consistent information about nontraditional students is the wide variety of age ranges researchers have used to identify this group. Some studies have used students over the age of 27 to describe nontraditional students (Kasworm, 2003; Spitser, 2000) and one study completely eliminated the ages 24 to 26 from their research (Graham & Gisi, 2000) preferring to use 23 and younger for traditional students and 27 and older for nontraditional students. College admissions offices nationwide also use a variety of age ranges to identify and track non-traditional students. Some institutions identify nontraditional students as students who have been out of high school for more than five years and still others simply use 24 years or older.

Despite the various age ranges used by some researchers, it appears the age of twenty-four or twenty-five and older has been one of the most prevalent age ranges used to define nontraditional students in literature. This is due in part to the U.S. Department of Educational National Center for Educational Statistics (NCES) that has defined adult students as individuals

who are twenty-four or older and "engaged in some form of instruction or educational activity to acquire the knowledge, information, and skills necessary to succeed in the workforce, learn basic skills, earn credentials, or otherwise enrich their lives" (NCES, 1999). Based upon the use of national enrollment data, NCES (2006) explains that enrollment for adult students increased by 17% from 1990 to 2004 and that enrollment for students twenty-four or older will increase by 15% from 2004 to 2014. However, it should be noted that these predictions were made prior to the faltering economy and that appears to be driving more adult students to enroll in college in greater numbers (AACC, 2008).

Regardless of the age range used to define nontraditional students, it becomes clear that these students are enrolling in the nation's colleges and universities in greater numbers. As more attention has been directed toward this growing population, some researchers have determined that age may be too limiting of a definition for nontraditional students and have sought new ways to define and describe these students. After all, age alone does not automatically guarantee a greater sense of maturity or more complexity in life. Therefore, some scholars have resorted to identifying nontraditional students based upon certain background characteristics.

Nontraditional defined by background characteristics. Bean and Metzner (1985) were among the first who argued that if one defines traditional students as students 18 to 24 years of age, living on campus and attending college full-time then nontraditional students should be described as students who lack all or one of these characteristics. Apling (1991) used data from the National Postsecondary Student Aid Survey of 1986 to compare five groups of nontraditional students. Along with students 24 or older, he included students that were independent of their parent's financial support, part-time students, students that did not graduate from high school, and single parents. In a similar fashion, Rendon (1994, 2000) used

background characteristics such as low income, first-generation, and employment status to describe nontraditional students. Many of the background characteristics used to describe nontraditional students in literature are related to traditionally underserved populations such as first-generation students, minority students, and students from lower economic backgrounds (Fischer, 2007). Women and students who are academically not prepared for the rigors of college work are often included with the discussions of nontraditional background characteristics since they are found in higher percentages among students who are first generation, minority, and from lower economic backgrounds.

It is important to note that students may display more than one of these background characteristics simultaneously thus increasing the likelihood of not completing their degree. Swail (2002) notes that students who are first generation, from lower economic backgrounds, or from minority backgrounds are less likely to enroll in four-year colleges and are less likely to earn a college degree. By expanding the definition of nontraditional students beyond the parameters of age, college personnel are able to gain a better understanding of the diversity and challenges nontraditional students face on campus. In addition, by moving beyond the use of age as the only definition, other scholars have been encouraged to explore the lives of adult students further and develop new ways of identifying nontraditional students. The third definition that has received considerable attention over the last decade and a half is the use of seven at-risk attrition factors.

Nontraditional defined through risk factors. In a 1996 National Center for Educational Statistics (NCES) study, Horn expanded the definition of nontraditional students to include one or more of the following seven at-risk factors: (a) a student who delays enrollment and does not enter college in the same year they complete high school, (b) attends part time for at

least part of the academic year, (c) works at least 35 hours per week while enrolled, (d) is considered financially independent for purposes of determining eligibility for financial aid, (e) has dependents other than a spouse, (f) is a single parent, or (g) does not have a high school diploma. These at-risk factors not only help identify nontraditional students but they also identify many of the background characteristics that students bring with them prior to enrollment. It is also not uncommon for students to display more than one at-risk factor and is the main reason why Horn placed these at-risk factors along a continuum.

Horn (1996) placed these at-risk factors along a continuum to determine the number of at-risk behaviors students exhibited. This allowed Horn (1996) to label students as "minimally nontraditional" if they had only one of these behaviors, "moderately nontraditional" if they had two or more behaviors and "highly nontraditional" if they had four or more of these behaviors. Horn (1996) explained that students who exhibit any of these at-risk factors are less likely to earn a college degree or remain enrolled after five years compared to traditional students and that students who are considered "highly nontraditional" are at the greatest risk for not earning a college degree.

In a 1999-2000 study conducted by NCES, it was found that approximately 70% of all undergraduates exhibited at least one of the seven at-risk factors in higher education institutions (Choy, 2002). The most common nontraditional at-risk factors were financial independence with 51%, followed by part-time enrollment with 48% and delayed enrollment in college at 46% (Choy, 2002). Similar to the background characteristics used to define nontraditional students, these seven at-risk factors may also be interrelated and increase a student's likelihood of not persisting towards degree completion. For example, students who are independent of their

parents may also work full or part-time and may have dependents of their own making them more likely not to persist.

It is also important to note that different types of institutions enroll different numbers of nontraditional students with varying at-risk factors making it critical that institutions conduct their own research to determine the at-risk factors of their students and tailor their programs and support systems to meet those needs. Choy (2002) explains that 90% of students enrolled at two-year colleges exhibit at least one of the seven at-risk factors compared to only 58% of students attending a public four-year college. Additional NCES (2002) studies have also demonstrated that nontraditional percentages and characteristics continue to change. Over the last fifteen years students who delayed enrollment, worked full-time, had dependents, and were single parents have all increased within the higher education system.

Although a more research intensive process is required to identify nontraditional students based upon their at-risk behaviors, Horn's (1996) methodology provides a consistent framework to identify these students for future researchers. In addition, it provides college officials with more specific information about their students and the specific at-risk factors that are likely to influence their attrition in college. This is especially true for two-year colleges that enroll the majority of nontraditional students regardless of the definition used to describe this growing and complex student population.

The inconsistency in defining nontraditional students throughout the literature has made it more challenging for researchers to find consistent and comparable data for this growing population of students. However, there is little doubt that nontraditional students enroll in greater numbers at community colleges than at four-year institutions regardless of how they are defined and that additional research is needed to understand and improve on their poor degree

attainment rates. Since nontraditional students are being defined by their at-risk factors that influence their involvement on the college campus, it is helpful to review the leading theories surrounding student involvement and nontraditional students.

Development of the Student Involvement Theory

One of the most prominent and researched student development theories in higher education that seeks to understand why some students leave college and others persist through graduation is Astin's (1975) student involvement theory. Astin (1975) first conceptualized the Theory of Student Involvement in his longitudinal study of over 200,000 students entering 400 two-year and four-year colleges and universities throughout the United States. In this landmark study, Astin sought to identify the factors in the college environment that significantly influenced students' persistence in college. He used data from the Cooperative Institutional Research Program (CIRP) and performed both qualitative and quantitative research on these students during a four-year period. A survey was sent every year during this cohort's enrollment and selected students were interviewed during their second and fourth year of college in order to find deeper meaning in their persistence and dropout rates. Astin (1975) discovered that almost every significant effect on student persistence could be rationalized in terms of the involvement concept. In other words, students that became involved in the college campus were more likely to remain enrolled in their current college and students that did not become involved were more likely to drop out.

Astin (1984) defined student involvement as "the amount of physical and psychological energy that the student devotes to the academic experience" (p. 134). In other words, a student's physical interaction and mental engagements combined together to form involvement. Thus, involvement can be measured both quantitatively (by documenting how many hours a student

spends studying or time spent in meetings) and qualitatively by exploring the student's understanding of the subject or the extent of one's involvement in a student group. Astin (1999) further noted that involvement occurs along a continuum, varying in intensity, and differing among students. He posited that student time is a limited resource, claiming that the degree of development a student accomplishes corresponds directly to the quality and quantity of time and effort committed to obtaining any goal. Therefore, the greater amount of student involvement tends to lead to greater progress towards learning and personal development.

Astin (1984) noted that student involvement is more about what a student does and less about what students think. Since Astin's (1984) theory is more behavioral in nature, he developed five main postulates that focus directly on the student behavior and the type of learning environment created by the institution. They include the following:

1. Involvement refers to the investment of physical and psychological energy in various "objects." The objects may be highly generalized (the student experience) or highly specific (preparing for a chemistry examination).
2. Regardless of its object, involvement occurs along a continuum. Different students manifest different degrees of involvement in a given object, and the same student manifests different degrees of involvement in different objects at different times.
3. Involvement has both quantitative and qualitative features. The extent of a student's involvement in academic work can be measured quantitatively (how many hours the student spends studying) and qualitatively (does the student review and comprehend reading assignments, or does the student simply stare at the textbook and daydream).

4. The amount of student learning and personal development associated with any educational program is directly proportional to the quality and quantity of student involvement in that program.

5. The effectiveness of any educational policy or practice is directly related to the capacity of that policy or practice to increase student involvement (pp. 135-136).

These postulates require institutions and college employees to look more closely at what the students do (the physical) and how they behave (the psychological) in the college environment. It challenges traditional teaching methods that are still prevalent today and requires institutions to develop new ways to involve students in their own learning. Astin (1975) explained that the student who is involved in the academic life of the institution is more likely to expend the effort to be successful academically than the uninvolved student. His theory appropriately puts part of the responsibility on the student for their learning and part of the responsibility on the institution for creating a connecting learning environment throughout the institution.

Over the last forty years, a multitude of studies have been conducted to identify and explore the factors of student involvement and how these factors contribute to the intellectual, personal, social, and career development of undergraduate students (Astin, 1975, 1984, 1993, 1996, 1999; Copper, Healy, & Simpson, 1994; Horn, 1996; House, 2000; Metzner & Bean, 1987; Pascarella & Terenzini, 1998, 2005; Spitzer, 2000; Johnson, 2006; Ullah & Wilson, 2007). Many studies have based their research on the work of Alexander Astin's student involvement theory. Therefore, it is beneficial to review how the student involvement theory influenced other scholars and in turn how the work of those scholars also influenced the student involvement theory.

Tinto's student departure theory. Vincent Tinto's work on student persistence also recognized the critical role that student involvement plays on college student outcomes. In his student engagement model of student persistence, Tinto (1993) highlighted the need to better understand the relationship between student involvement in learning and the influence that involvement had on student departure rates. Tinto (1993) notes:

> There appears to be an important link between learning and persistence that arises from the interplay of involvement and the quality of student effort. Involvement with one's peers and with the faculty, both inside and outside the classroom, is itself positively related to the quality of student effort and in turn to both learning and persistence (p. 71).

These comments and others made by Tinto further emphasize the influence that Astin's student involvement theory had on Tinto's work. However, where Astin emphasized involvement, Tinto emphasized integration.

The development of Tinto's student engagement theory began to form its framework after his collaboration with Cullen's longitudinal studies on student attrition in the early 1970's. Tinto's (1973) original theoretical framework initiated his academic and social integration variables which included the following components: (a) pre-enrollment background such as prior education and family history; (b) student and institutional goals; (c) involvement at the institution; (d) academic and social integration; (e) student intentions and external commitments; and (f) departure decision that included graduation, transfer, or dropout. Although Tinto's (1975) work with Cullen helped form his framework for the student departure model, Tinto's work was also influenced by the sociological models developed by Durkheim (1954), Van Gennep (1960) and Spady (1970).

Durkheim's (1953) theories of suicide and departure, Van Gennep's (1960) rites of passage theory, and Spady's (1970) work on community membership also helped to build the six components of Tinto's original model. Durkheim (1953) explained that individuals who lack intellectual and social integration into society were more likely to withdraw from society and commit suicide. Van Gennep's theory, building on the sociological perspectives identified in Durkheim's (1953) theory of suicide, explained that the use of ritual and ceremony were critical components for an individual's integration into a new environment. Van Gennep (1960) posited that the movement of an individual from membership into one community to another was marked by feelings of weakness and isolation as they moved through phases of separation, transition, and incorporation. Also relying heavily on the work of Durkheim, Spady (1970), suggested that college students who are less socially and intellectually integrated into the college environment are more likely to withdraw from the institution compared to those that do feel more integrated. By incorporating Cullen's longitudinal studies and the sociological models developed by Durkheim, VanGennep, and Spady, Tinto's theory surmised that students arrived at college with certain goals and expectations and their integration or lack thereof into the college environment affected their ability to earn a degree. Tinto (1975) noted that certain institutional variables such as faculty-student interaction, peer involvement, and participation in extracurricular activities all helped influence a student's ability to persist. Therefore, academic and social integration formed the foundation for Tinto's model of student persistence as he attempted to understand why behaviors occurred and what effects these behaviors had on persistence.

To further expand his original theoretical model, Tinto (1987) included additional ethnographic information such as background variables which caused him to explore other

criteria for assessing how academic and social integration fit into his model of student persistence. Tinto's (1987) revision also involved the addition of five theoretical factors that influenced student persistence. They were psychological, societal, economic, organizational, and interaction factors. These adaptations also included more emphasis on student intentions, faculty and student interactions, and a distinction between formal and informal communication with faculty.

Despite expanding his theoretical model to include additional ethnographic variables, Tinto's student departure theory was challenged by a number of scholars. Many scholars drew attention to the fact that his work relied largely on traditional students attending four-year institutions. Pascarella (1986) openly criticized Tinto's work for ignoring two-year institutions and noted that academic and social integration should also be conducted at two-year colleges. Tierney (1992) was particularly critical of Tinto's work and noted that Tinto's interpretation of Van Gennep's rites of passage may "hold potentially harmful consequences for racial and ethnic minorities" (p. 603). In 1990, Nora conducted a study of student persistence and retention for Hispanic students attending a two-year college and found that "all" types of financial aid had a significant impact on the retention of Hispanic students. These findings varied from Tinto's (1975) earlier research regarding financial aid where he found that only students with work-study had improved persistence rates and further called into question the adaptability of Tinto's theory to the two-year college sector. In addition, student engagement implies a cognitive process that is centered around how deeply or thoroughly someone is thinking about a given activity or thing and is quite difficult to measure. These criticisms and concerns led other scholars to expand the research on student persistence and retention even further.

John Bean's student departure theory. After examining the work of Astin (1975) and Tinto (1975), John Bean (1980) applied a theory based on organizational behavior to understand why student attrition levels of college students continued to remain relatively unchanged through the years. His efforts centered on student departure and the factors that influenced student persistence and he noted similarities between employee turnover and student attrition. Bean (1980) theorized that reasons used to explain employee turnover could also be used to explain college student departure.

In one study, Bean (1981) combined Spady's (1970) sociological perspective and Tinto's (1975) model into a new model that included additional attitudinal variables. Bean (1981) explained that student persistence was influenced by (a) student background; (b) student interaction with the college; (c) environmental factors; (d) attitudinal variables (perceived quality and satisfaction with the college); and (e) whether students intended to transfer or earn a degree.

In 1985, Bean collaborated with Metzner and they expanded Bean's model even further to include elements of nontraditional students and various elemental factors that influenced their departure rates. These elemental factors included grade point average, high school performance, and a number of psychological variables such as stress and satisfaction. These additional factors further increased the understanding of the various outside influences on student persistence and enabled other scholars to expand the work of Tinto (1975) and Astin (1975) even further.

Pascarella and Terenzini's relationship model. Pascarella and Terenzini (1980) continued the work on student persistence by creating a relationship model that emphasized student interaction with faculty and peers. Pascarella and Terenzini (1980) examined the relationship between faculty and students and found that the amount of time students spent with faculty, both in and out of the classroom, strongly increased their likelihood of persistence. In

1986, Pascarella expanded the current understanding of student persistence models and conducted his own study from multi-institutional perspectives drawing attention to the differences that may exist between various types of institutions.

The work of these scholars emphasized many of the outside factors that may influence student persistence and retention and how different institutions and even institutional policies can influence student graduation rates. Based upon the work of these scholars, Astin (1993) futher developed his student involvement theory to consider various outside factors that may influence student retention.

Astin's I-E-O Model

In 1993, Astin further conceptualized his theoretical framework with the development of the I-E-O model. The "I" stands for inputs, or the background characteristics that a student has at the time of enrollment. The "E" is for environment, which may include various programs, services, policies, college personnel, peers, and educational experiences students encounter in and out of the classroom. The "O" refers to the student outcomes that were intended from participating in an educational experience. By applying this model to his research, Astin (1993) was able to consider inputs that other scholars had identified that were not included in Astin's (1975, 1983) earlier work on student involvement. Many of the inputs included where a student lived, being a recipient of financial aid, the choice of major, time devoted to studying and other academic related activities, actual courses taken and completed, honors programs, involvement with faculty and peers, volunteer work, watching television, commuting, using student services, and even drinking. However, it is important to note that Astin (1993) did not limit the selection of inputs variables and therefore allowed considerable flexibility for researchers to select variables that have perceived applicability to their particular students and environment. This

allows researchers the opportunity to consider specific inputs that may be unique to their particular institution setting.

Inputs in this study. The inputs selected for this study included the demographics of age, gender, and ethnicity as well as Horn's (1996) at-risk factors used to identify nontraditional students. These risk factors included the following: (a) a student who delays enrollment and does not enter college in the same year they complete high school, (b) attends part-time for at least part of the academic year, (c) works at least 35 hours per week while enrolled, (d) is considered financially independent for purposes of determining financial aid eligibility, (e) has dependents other than a spouse, (f) is a single parent, or (g) does not have a high school diploma. In addition, military veterans will be included in this study as a risk factor as new research has begun to demonstrate the challenges military veterans face when enrolling in college (Baumann, 2009; Rumann, 2010; & Stringer, 2007). Each of these inputs reflected certain student background characteristics that students exhibited prior to enrolling in college. In addition, most of these inputs are the same background characteristics used by other scholars in their theories of student development (Bean & Metzner, 1985; Pascarella & Terenzini; 1998). These inputs enable scholars to identify some of the most likely causes that may negatively impact a student's ability to earn a college degree. Therefore, it would be helpful to review each of these inputs a bit further.

Age. The impact of age on student growth, development, and ability to earn a college degree has received considerable attention for over forty years. In his theory of Power-Load-Margin, McClusky (1974) explained that key components in the lives of adults are the load (self and social demands) they carry in living, and the power (resources, abilities, and allies) that an adult has to carry the load. According to McClusky (1974), a crucial element for meeting any

learning demands was the ability to maintain this ratio or margin between load and power. Thus an adult's ability to earn a degree is directly affected by their ability to maintain this margin between load and power.

Since the development of McClusky's (1974) theory of margin, a number of scholars have found that adult student's face a number of external demands that have a negative impact on their ability to earn a degree (Kasworm, Polson, & Fishback, 2002; Kasworm, 2003; Spister, 2000; and Graham & Gisi, 2000). After completing a 12 year longitudinal study of approximately 8,500 students enrolling in community colleges, Adelman (2005) posited that the difference between traditional-aged students and those that start later in life are so different that mixing these age populations does considerable disservice to understanding what community college do and how to judge what they do.

Despite the challenges nontraditional-aged students face towards degree completion, the percentage of students twenty-four and older has been gradually increasing from 22% in 1975 to 32% in 2010 (NCES, 2011). Since age has been found to be a significant factor impacting the completion rates of community college students, this demographic was included as an input with this study along with gender and ethnicity.

Gender. In addition to a demographic shift in the number of older students enrolling in college, there has also been an increase in the number of women enrolling in college. Women now represent the majority on college campuses nationwide and are earning more college degrees than men. In a 2010 National Center for Education Statistics study on college completion rates, women were found to have earned a bachelor's degree eight points higher than that of men (NCES, 2011). Understanding that differences do exist between men and women in

regards to their development and learning has long been a focus of adult education literature (Clark & Cafferella, 1999; Gilligan, 1982; Josselson, 1987; Magolda, 1992).

Gilligan (1982) and Josselson (1987) challenged preexisting literature on ethical decision making and identified differences that existed between men and women. In a longitudinal study of male and female college students, Magolda (1992) found that there were differences among gender on how students reasoned and in what they valued in the teaching-learning process. In "*An Update on Adult Learning Theory"*, Clark and Cafferella (1999) reviewed the differences found in literature related to adults and gender. They identified the differences that existed in the following areas that were related to the biological, psychological, sociocultural, and integrative models of development and noted the importance of understanding these differences and the impact these difference have on the teaching and learning experience. In addition to the differences found among age and gender in relation to college completion, research has also noted their differences among the ethnicity of college students.

Ethnicity. Ethnicity is a unique biographical variable since minorities enroll in greater numbers at two-year institutions than four-year institutions (Kuh, et al., 2006; NCES, 2008). In a report entitled "Charting a Necessary Path", Engle and Lynch (2009) noted that students from historically under-represented backgrounds – defined as students of African-American, Latino, and Native American descent – are overrepresented at two-year institutions but underrepresented in regards to college completion rates. Further, this report found that although over 80% of students enrolling in a community college plan to earn a college degree, only 7% of low income and minorities' students do so. Although access to higher education has improved for minority students, a great deal more needs to be done to understand the impact the college environment plays on their college completion rates.

Delayed enrollment. Students that delay enrollment do so for a variety of reasons. Some of the most common reasons include starting a family, entering the work force, or joining the military right after high school completion. Regardless of the reason, research indicates that students who delay enrollment in college are at a greater risk for not earning a college degree compared to their peers that enroll in college after graduating from high school (Horn, 1996, Berkner, He, & Cataldi 2002, NCES 2005). In a national study that sought to develop a profile of students who delayed enrollment in college, NCES (2005) discovered that about one third of the first time students that enrolled in college during 1995-96 had delayed enrollment in college by one year or more after graduating from high school. In addition, NCES (2005) found that students that delayed enrollment in college after high school were more likely to enroll in community colleges, vocational and/or short-term programs, were more likely to have come from low-income households, and were more likely to enroll on a part-time basis.

The results from the NCES (2005) study emphasize the fact that students that delay enrollment after high school are fundamentally different than their peers that enroll immediately after high school graduation. Many of the students who have delayed enrollment also have work and family obligations that limit the amount of time they have to devote to the college learning experience. Therefore, the factors that influence delayed enrollment often lead to other risk factors that may impact a student's ability to earn a degree such as attending college part-time and working while enrolled in college.

Part-time enrollment and work. In order to help offset increases in college costs that have outpaced increases in the median family income, more students are working while enrolled in college and therefore enrolling part-time. In a national study that examined the role of financial obligations in college completion rates of community college students under the age of

24, Orozco and Cauthen (2009) noted that 58% of young community college students are now enrolled part-time in college and that 61% work at least 20 hours or more a week. The authors also noted that 51 percent of students that were enrolled part-time left college within three years. It is important to recognize that although part-time enrollment tends to lead to poor completion rates, the opposite is true about part-time work.

In a national study by the American Council of Education, King (2002) found that enrolling full-time in college and working part-time (no more than 14 hours) keep students connected to the campus and the likelihood that they will earn a college degree. These findings support Horn's (1996) at-risk criteria that indicate that part-time students and students that work more than 35 hours per week are a risk for becoming a college drop-out than their traditional peers. It also stands to reason that since part-time enrollment and working full or part-time is driven by a students' finances that being declared financially independent by federal guidelines also plays a role in determining nontraditional status.

Financial independence based on financial aid guidelines. The use of financial aid guidelines to determine nontraditional students falls into one of the following categories: students that are financially independent from their parents; are twenty-four years or older; have financial constraints such as having dependents; served in the military; or considered an orphan or ward of the court. By including the federal guidelines for determining financial independent status, Horn (1996) is able to capture a number of life experiences that can significantly influence the maturity level of individuals such as supporting a dependent, being married, and serving in the military. According to Choy (2002), in 1999-2000 the most common nontraditional at-risk factor was financial independence which was surveyed at 51 percent.

Single parent. Based on data provided by the American Association of Community Colleges (2008), approximately 17% of enrollment in community colleges is single parents. There is little doubt that single parents attending college encounter many obstacles and difficulties. Some of these obstacles include lack of available and affordable childcare, financial strains, and having to work while enrolled in college. The student must balance the demands of college as well as the many responsibilities of supporting a household putting them at-risk for dropping out of school (Choy, 2001; CCSSE, 2005; Horn, 1996; Muraskin, Lee, & Swail, 2004; Swail, Redd, & Perna 2003). Being a single parent appears to put students at greater risk for non-degree completion, due to the fact that being a single parent often places students in other at-risk categories.

No high school diploma – GED applicants. In 2000 half a million individuals received a GED and each year about one in seven high school diplomas is a GED credential (Tyler, 2003). These numbers are unlikely to change in the next few years as most states have recently implemented more stringent high school graduation standards. Even more of a concern is the fact that only 30 to 35 percent of GED recipients enroll in college and out of those only 5 to 10 percent complete at least one year of postsecondary education (Boudett, 2000). It is clear that students that enroll in college with GED are at risk for not earning a college degree.

Military veterans. During the 2007-08 academic year some 660,000 undergraduates were veterans (NCES, 2009) and the Department of Veterans Affairs projected a 20% increase in the number of veterans enrolling in college from 2009-2011. Of particular concern are the large numbers of veterans who have now served in a combat zone and are expected to bring additional challenges to their ability to earn a degree. Some of the issues veterans may confront include difficulties integrating back into life with civilians, mental issues such as post-traumatic stress

disorder, depression, and possible service related disabilities (Bauman, 2009; Stringer, 2007). Rumann (2010) notes that many community colleges are underprepared to handle the many transition issues military veterans face enrolling in college.

Research continues to reveal that these risk factors are independently associated with lower rates of degree attainment. It is important to note that these risk factors may also interrelated and are predominate in low-income and first-generation students that most often enroll in community colleges (Chen, 2005; Choy, 2001; Horn, 1996; NCES, 2005). As discussed, some of these risk factors often correlate with other risk factors such as being a single parent and working full-time putting students at greater risk for non-degree completion as they interact with the learning environment.

Environmental Factors. Astin's (1975, 1993) environment factors were first discovered in his initial research and have remained relatively unchanged. The environmental factors that have been found to influence student retention and graduation rates include academic involvement, peer involvement, participation in extracurricular activities sponsored by the college, and involvement with faculty and staff. These environment factors are found in every college environment and may be controlled in part by the institutional practices and policies an institution develops. The research surrounding each of these of environmental factors will be reviewed and discussed.

Academic involvement. Academic involvement encompasses both in-class and out-of-class activities that are directly related to coursework or learning. Activities such as studying, visiting the tutorial center, using the writing lab, and freshman seminar courses are examples of academic involvement. Although the majority of first-year students (87 percent) report that they will "occasionally" use academic support services, less than half (46 percent) actually do (Kuh,

et al., 2006). A number of scholars have examined the relationship between academic involvement and student achievement and retention. Hossler, Kuh, and Olsen (2001) demonstrated that high-risk students attending a large state university were more likely to use academic support services that were located in the students' residence halls. The at-risk students that took advantage of these academic support services were more likely to persist to the second year and earned higher grades (Hossler, Kuh, & Olsen). Making these services convenient for students appears to play a large role in determining if students will take advantage of these services.

House (2000) examined both the in-class and out-of-class involvement in relation to a student's drive to improve their abilities in math and writing. Approximately 2,134 freshmen attending a larger university were surveyed. Following in Astin's footsteps, House (2000) used the Cooperative Institutional Research Program (CIRP) Annual Freshman Survey during an on-campus orientation. He measured the number of hours students spent doing the following activities the previous year: (a) speaking with professors outside of class; (b) studying and doing homework; (c) reading for pleasure; (d) doing volunteer work; (e) participating in student clubs and groups. The significant findings revealed that the number of hours per week spent reading was positively related to self-perceptions on students writing ability; those who spent more time reading the previous year had lower self-perceptions of their math ability; and students who spent more time studying and doing homework the previous year had more drive to achieve. This study provided additional support to the benefits of in-class and out-of-class academic involvement to student development outcomes and persistence.

In one of the few studies to explore the impact of student involvement activities on the transfer readiness of community college students, Johnson (2006) found that students spent most

of their community college involvement time on academically related activities which positively influenced their ability to transfer to a four-year institution. These included activities such as spending time doing homework, studying at the library, and participating in formal and informal study groups. Johnson's study was conducted at a large community college in the State of California and included both qualitative and quantitative methods. In this study, the term nontraditional-aged student was used to refer to students over the age of 24 and therefore it does not include at-risk behaviors to identify nontraditional students. However, it is one of the few comprehensive studies that have examined the impact of academic involvement at a community college in relation to college students' ability to transfer to a four-year institution.

Although a number of studies have demonstrated the benefits of academic involvement to student development, retention, and persistence rates, the majority of them have been conducted at four-year institutions on traditional students. As demonstrated earlier, community college students are more likely to be unprepared for the rigors of college work and have less time to devote to activities outside of the traditional learning environment. Despite some promising findings in the studies reviewed, additional research is still needed to understand the most effective approaches for students attending community colleges.

Extracurricular involvement. Student participation in activities sponsored by the college outside of the traditional learning environment have also been found to contribute positively to student's development and persistence in college campuses nationwide. These are commonly referred to as extracurricular activities and often include activities such as student clubs, cultural events, and intramural sports. In his landmark book, *What Matters in College? Four Critical Years Revisited*, Astin (1993) examined the impact of involvement in extracurricular activities on the lives of students. He found that assuming a leadership position, communication skills,

leadership attributes, and interpersonal skills had statistically significant correlations with the amount of hours students spent each week in these activities. Astin's (1993) findings reignited the interest of college officials in developing ways to get students involved in extracurricular activities.

Graham and Gisi (2000) discovered that even small amounts of involvement in extra-curricular activities contributed to the intellectual growth of students. Their data collection was immense and included 64,647 students enrolled in 154 colleges and universities in 35 states between the years of 1993 to 1996. Students were asked to complete the American College Testing (ACT) College Outcomes Survey (COS). After removing students who had completed less than 50 hours of college credit and students age 23 to 26, the final study included 19,015 students. Participation in extra-curricular activities had some of the lowest percentages of involvement but was still found to have an impact on gains in intellectual growth, $F(1, 17232) = 133.86$, $p < .0001$, for both traditional and non-traditional students. Another noteworthy finding in relation to adult students was that they reported greater intellectual development as a result of their participation in extra-curricular activities but 32% invested less than 1 to 5 hours each week in these organizations. Compared to 72% of adult students (27 or older) who reported 11 hours or more each week caring for family, the small amount of time invested in clubs and organizations contributed to more significant relationship with development than it did for traditional students.

The fact that this was a longitudinal study and that it included older students provides additional evidence of the importance of creating opportunities for students to get involved outside of the classroom. However, nontraditional students were simply described as students 27 and older and students between the ages of 23 and 26 were completely eliminated from the

study. Since no community colleges were included in this study, it is uncertain if similar results would be found for nontraditional students attending a community college.

Foubert and Grainger (2006) also conducted a longitudinal study that compared varying levels of involvement in clubs to the psychosocial development of first-time traditional freshmen enrolled at a highly selective public university in the southeast. The researchers used Chickering and Reisser's vectors to analyze student development at the beginning of their first year, the beginning of their sophomore year, and at the end of their senior year. The Student Development Task and Lifestyle Inventory (SDTLI) was the survey instrument used since it was specifically developed to measure students self-reported behaviors, attitudes, and opinions on psychosocial topics that specifically relate to Chickering and Reisser's theory.

Foubert and Grainger (2006) noted that "student involvement in clubs had a strong association with psychosocial development, particularly on students establishing and clarifying purpose, educational involvement, career planning, life management and cultural participation" (p. 15). Students that had more involvement during their freshman year were also found to have significantly greater development than students that were not involved, suggesting that more involvement during the freshman year may lead to an increase in psychosocial development. In addition, students who actually joined or led an organization demonstrated higher levels of development than students who just attended meetings. These findings provide useful information for college administrators in creating opportunities for involvement on campus. However, this study was limited in that it was conducted at a highly selective public university and no nontraditional students were included in this study.

Although involvement in extra-curricular activities has been found to lead to increased retention and graduation rates (Astin, 1975, 1993; Kuh, et al., 2006; Pascarella & Terenzini,

2005), approximately 84% of students attending a community college reported not spending any time in these types of activities (CCSSE, 2004). Therefore, additional research is needed to understand how these extracurricular activities may benefit nontraditional students attending a community college.

Peer involvement. Astin (1993) noted that peers are "the single most potent source of influence" on student learning and persistence (p.398). Astin (1993) explains that peer involvement may include such activities as discussing course content with other students, developing study groups, tutoring other students, participating in intramural sports, participating in club or social activities on campus. A number of studies have confirmed the positive impact that peer involvement can have on student development and retention.

Whitt, et al. (1999) surveyed 3,840 first-year students in 23 colleges and universities using a variety of assessment methods such as the National Study of Student Learning (NSSL) and the College Student Experience Questionnaire (CSEQ) to examine the relationship between peer relationships and cognitive outcomes. Peer interaction within the classroom had significant positive effects on gains in thinking and writing skills, understanding science, and career preparation (Whitt, et al., 1999). In addition, peer involvement out of the classroom also revealed significant positive effects on understanding the arts and humanities, and on understanding self and others.

An important consideration is that this was a longitudinal study that took place in 1992, 1993, and 1994. Out of the 3,840 that began the study only 994 remained in the follow-up study conducted in 1994. It is unclear whether the students elected not to participate in the follow-up studies or if the students were no longer enrolled in college. Although this study contributed positively to understanding the influence of peer involvement, it was limited in that it did not

include nontraditional students and focused on student development gains and did not include data on its impact with retention rates.

Ullah and Wilson (2007) conducted a longitudinal study (2003-05) to examine the influence of student involvement with peers on academic achievement at a Midwestern public university. Participants included 2,160 undergraduate students with a mean age of 20.9 years old. All participants were asked to complete the National Survey of Student Engagement and found that peer relationships affected female and male participants differently. Female-to-female involvement proved to have positive effects on academic achievement but for male-to-male interactions the results proved to influence academic achievement negatively. Why this difference exists was not determined with this study but it does draw attention to the need for further studies exploring the impact of involvement with peers on academic achievement.

Faculty involvement. Over forty years of research supports the critical role that faculty members play in student retention efforts (Astin, 1975, 1984, 1991, 1996, 1999; Bean & Metzner, 1985; CCSSE, 2006, 2008; Johnson, 2006; Pascarella & Terenzini, 2005; Tinto, 1987, 1993). Astin (1999) explains that instructors have the greatest ability to influence what students actually accomplish. Examining the connection between faculty's educational practices and student engagement, Umbach and Wawrzynski (2005) concluded that the educational context developed by faculty influenced student learning considerably. In other words, students that were more involved in their learning environment performed better academically. This is an important consideration for nontraditional students because most commute to campus leaving faculty interaction as one of the few opportunities to engage these students.

Since nontraditional students are less likely to spend time in activities outside of the traditional learning environment, a number of institutions have begun to create new strategies

that make student engagement efforts intentional at community colleges. *The Community College Survey of Student Engagement* (CSSE, 2008) notes that many community colleges have been integrating engagement strategies directly into the classroom by making them mandatory or bringing them directly to the students.

In one of the few studies to compare faculty involvement among traditional and nontraditional students, Broschard (2005) examined the quality of student involvement between 200 traditional and 200 nontraditional students attending a private catholic university. She found different patterns of correlations between involvement and development of these two groups. Traditional students were more highly correlated with the development based on their ratings of academic and social involvement but nontraditional students exhibited greater gains in academic development based upon their academic and faculty involvement. This research highlights some of the fundamental differences between traditional and nontraditional students primarily being that traditional students require more of a well-rounded college experience and nontraditional students focus their development within the learning environment created by their professors.

Although this study highlighted some differences between traditional and nontraditional students, it was limited to a private Catholic college with a female enrollment of 77%. In addition, the researcher states that she used Horn's (1996) at-risk behaviors to define nontraditional students but fails to categorize students using Horn's three levels of minimally nontraditional, moderately nontraditional, and highly nontraditional. Instead she simply defines traditional students as having none of Horn's descriptors and any student with one or more descriptors as nontraditional. In reviewing the responses to the surveys, it quickly becomes apparent that few (if any) students would fall into the highly nontraditional category as they would at a community college.

Even though nontraditional students spend little time on campus, there are benefits to encouraging them to spend time with faculty outside of the traditional learning environment. Research indicates that informal student-faculty interaction such as visiting a professor's home; assisting with a research project; talking with faculty outside of class; and even serving on committees with faculty demonstrate a positive correlation with student learning and retention (Astin, 1993; Kuh, 2003). Amelink (2005) found that first-generation college students who reported positive involvement with faculty in and outside of the traditional learning environment demonstrated gains in both their GPA and persistence rates. Similar gains were found with students who attended historically black colleges (Fries-Britt & Turner, 2002) and Latino students reported a greater sense of belonging in the college environment (Dayton et al., 2004).

It appears that any interaction with faculty either in or outside the traditional learning environment appears to have a positive influence on student development and persistence. Whether in or outside of the traditional learning environment, the more faculty can discuss career plans, class assignments, and do research together, the more likely students will persist (Kuh, 2004). Pascarella and Terenzini (2005) noted that both the nature and frequency of the contacts with faculty matter. Therefore, it is not simply contact with faculty that matters but intentional contact that has a purpose and is meaningful to students.

Perhaps the most influential variable on students' academic achievement and persistence are faculty that are well prepared for class and that develop assignments that students consider meaningful (Pascarella, 2001; Pascarella & Terenzini, 2005; Volkwein et al., 2000). Students are more apt to become involved in the learning experience when they are able to apply the content to their lives. Schell, Unsworth, and Schell (2008) note that "learning and teaching are most effective when experience based and should occur in genuine contexts when practical" (p.

422). The traditional classroom setting is too limiting for many students. Faculty that are able to expand learning beyond the four walls of classroom and make it applicable to the students' lives appear to have the greatest impact on student learning and persistence.

Perhaps remaining entrenched in traditional teaching methods may explain some of differences found within the community college setting. In stark contrast to the benefit of student-faculty interaction in the studies just discussed, Johnson's (2006) comprehensive study of the influence of involvement on transfer rates of students enrolled in a community college found that the frequency of student-faculty interactions was a negative predictor of transfer readiness. This finding suggests that students who are engaged with faculty are less academically involved than would be expected based upon their other college experiences. Furthermore, this finding highlights the fact that there may indeed be differences in the influence of involvement factors for students attending community colleges versus students attending four-year colleges and universities. Additional studies are needed to verify these findings and to determine if results would be similar for students attending a community college.

Staff involvement. In addition to involvement with faculty, research also indicates that students may benefit from involvement with staff on campus (Kuh, 2003; Pascarella & Terenzini; 2005). Staff are often responsible for creating social support systems for students that assist students with adjusting to college life and that assist with increasing student success (Kuh et al., 2005). Many of the services provided by staff had a positive impact on student retention and persistence rates (Kuh, et al., 2006; NSSE, 2005; Muraskin & Wilner, 2004; Tinto, 2004; Upcraft, Gardner, & Barefoot, 2005). These services often include student orientation programs, learning communities, academic advising, financial aid, and career advising and counseling. Unfortunately, because nontraditional students spend so little time on campus, community

colleges are challenged with finding ways of getting nontraditional students to take advantage of some of these services.

Since nontraditional students spend so little time on campus, one solution is to encourage collaboration between faculty and student services to bring appropriate resources directly to the classroom. *Powerful Partnerships* (1998) states that "collaborations between academic and student affairs personnel and organizations have been especially effective in achieving this better learning for students" (Joint Task Force on Student Learning, p. 3). Since student services staff have few opportunities to engage students at two-year institutions, partnering with faculty in the classroom becomes an effective tool to engage nontraditional students in the classroom environment.

One example of collaborative efforts between student affairs and academic affairs that has been quite successful is found at Inver Hills Community College in Minnesota. Schmidt (2007) notes that their goal was:

> to create a campus-wide faculty development model that will improve underrepresented student retention and performance through the creation of a common set of "college success" strategies that faculty will integrate into developmental courses to enable learner success. (p. 1)

They accomplished this by assessing their current students' needs and concerns, worked with faculty to develop strategies that would address their student needs, and assisted faculty with infusing their curriculum with course work that required students to use student services functions as part of their class assignments.

The program is called the IDEAS program and it stands for Integrating Development Education and Acculturation Skills. In less than two years, Inver Hills Community College

noticed a ten percent increase in retention for students participating in courses that implemented the IDEAS strategies versus students that were not enrolled in these courses. Another positive byproduct of this program is that approximately 80% of students enrolled in IDEAS courses have earned a "C" or better compared to only 55% of all other students (Schmidt, 2007). By working collaboratively with faculty in many of their learning support classes, Inver Hills Community College has experienced better retention, improved academic performance, and is on pace to experience the largest graduation class in the school's history.

Although Inver Hills Community College experienced remarkable results, they did not distinguish between traditional and nontraditional students. Therefore it is unknown if nontraditional students experienced the same increases in academic performance and retention rates. However, it does emphasize that improvements in academic performance and retention can be made at community colleges by intentionally increasing interaction of students with faculty and staff in and outside of the classroom. In addition, it draws attention to the need for additional research to be conducted at community colleges.

Outputs. As indicated earlier, outputs refer to the desired educational outcome of a learning experience. Through the years, research has revealed that involvement continues to have a positive impact on a variety of outputs. Some of these have included academic achievement, intellectual growth, student development, career development, psychological and social growth, retention, persistence, and degree attainment (Astin, 1975, 1993, 1999; Broschard, 2005; Foubert & Grainger, 2006; Graham & Gisi, 2000; Hossler, Kuh, & Olsen, 2001; House, 2000; Johnson, 2006; Kuh, 2003; Kuh, et al., 2006; Pascarella & Terenzini, 2005; Ullah & Wilson 2007; Upcraft, Gardner, & Barefoot, 2007). For the purposes of this study, the outcome

will focus on degree attainment. However, it is important to note that in order to earn a college degree that students will also meet other development outcomes as well.

Another important observation is that the involvement theory does not attempt to explain development but instead seeks to identify the factors that contribute to development. By identifying the factors that contribute to development, college personnel can begin to influence student involvement on campus and increase the likelihood that that the student will persist. Astin (1999) stated the following:

> Administrators and faculty members must recognize that virtually every institutional policy and practice (e.g., class schedules; regulations on class attendance, academic probation, and participation in honors courses; policies on office hours for faculty, student orientation, and advising) can affect the way students spend their time and the amount of effort they devote to academic pursuits. (p. 523)

Understanding the factors that influence student involvement gives institutions the opportunity to adjust policy and implement programs that increase the opportunities for students to become involved in campus life and therefore influence student retention, persistence, and graduation rates.

Summary and Implications

Increased pressure from the Federal and State governments to improve retention and graduation rates within the nation's public colleges and universities has posed quite a challenge for the community college sector. The review of literature has documented many of the challenges community colleges face in meeting multiple missions, enrolling a population of students where over half are not academically prepared for college level work, and the continued growth of nontraditional students who often enroll with multiple at-risk factors that influence

their ability to remain enrolled in college. Understanding this growing nontraditional student population has remained a challenge in higher education due to the various definitions used to describe this population. However, Horn's (1996) risk factors used to identify nontraditional students have received considerable attention within the last ten years and have been implemented in national studies conducted by NSSE and CCSSE which have given researchers some much needed consistency in identifying this rapidly growing population.

The continued growth of the nontraditional student population emphasizes the need for additional research on these students who predominately begin their enrollment journey at community colleges. Alexander Astin's (1975, 1993) Student Involvement Theory was reviewed and identified as a powerful tool to assist college administrators in developing strategies to improve retention and graduation rates. Despite over forty years of research surrounding the Student Involvement Theory, there have only been a handful of studies that have examined nontraditional students attending community colleges in relation to this widely accepted theory (Johnson, 2006; Miller, Pope, & Steinmann, 2005). The research studies that were reviewed have validated Astin's findings in relation to the factors that influence student retention and graduation rates identified as academic involvement, extra-curricular involvement, peer involvement, and involvement with faculty and staff. However, only a few of these studies involved nontraditional students (using various definitions) and the fact that the majority of these studies were conducted at four-year residential campuses further emphasizes the need for additional research of nontraditional students not only attending community colleges but in identifying factors that cause these students to stay enrolled and earn a college degree.

Astin's (1975) original study involved over 400 two-year and four-year colleges. One of the most consistent findings from his longitudinal study was that a student's chance of dropping

out was much higher at two-year colleges than four-year institutions. Astin (1975) noted that the negative effects of attending a community college were observed even after the variables for entering student characteristics and lack of housing and work were considered. This is attributed to the fact that community colleges were places where the involvement of both faculty and students seemed to be minimal. Most of these students are commuters and many attend on a part-time basis. In addition, a large proportion of the faculty were employed on a part-time basis thus reducing their interaction with students.

Unfortunately this trend of noninvolvement has not changed much over the years. A study conducted by Miller, Pope, and Steinmann (2005) found that both traditional aged and nontraditional aged community college students are fairly uninvolved on campus, as measured by their use of on-campus computer resources and their participation in athletic events, eating on campus, rest and relaxation on campus, campus athletic resources, dates on campus, social clubs, and cultural events. Despite the many benefits discovered that are related to certain types of involvement, there are still many unanswered questions on how student involvement relates to non-traditional students and community colleges. In addition, most of the studies surrounding student involvement typically explore only one aspect of involvement such as faculty interaction or participation in student groups. Only a couple of studies mentioned in this review have considered all of Astin's involvement factors in their research and only Johnson's (2006) study considered the impact of involvement on a student's ability to transfer to a four-year institution. None of the studies examined involved research on students that are graduating from a community college and only a small handful has used Horn's (1996) risk factors to identify nontraditional students. Therefore, this research study will provide unique insight into the lives

of nontraditional students graduating from community college and how (if at all) student involvement influences their ability to graduate when so many of their peers do not.

CHAPTER 3

Methodology

This chapter outlines the research methodology that was used to examine the involvement factors that may have influenced the graduation rates of nontraditional students attending a community college. This chapter describes the methodological details that were used to address the research questions of this study.

Using Alexander Astin's (1996) Student Involvement Theory as the conceptual framework, the purpose of this quantitative study was to examine the involvement factors that may have contributed to the degree completion of nontraditional students attending a public community college in the South. This study was guided by the following research questions:

1. What are the predominant nontraditional risk factors of this student population?
2. What risk factors of nontraditional graduates are related to their levels of involvement?
3. What are the differences in involvement levels of nontraditional and traditional student graduates?
4. What types of involvement levels are found to be significant for nontraditional students?

This chapter is arranged into seven sections detailing the conceptual framework, instrumentation, participating institution, data collection, data analysis, limitations, and assumptions of the study.

Conceptual Framework

The type of research design selected for this quantitative study was survey research with a sample of convenience. A questionnaire was developed to measure the involvement experiences of nontraditional students (defined by risk factors) that graduated from a community college. According to Astin's (1984, 1993) student involvement theory, the more involved students are in their college environment the more likely the students are to persist and graduate. Astin (1984) defines student involvement as the amount of physical and psychological energy a student devotes to the academic experience. This study examined the types of involvement from a population of students that graduated from a community college. In addition, this study applied Horn's (1996) at-risk criteria to identify nontraditional students from within this population of college graduates and sought to determine if differences in participation levels existed among traditional and nontraditional students attending a community college. To help guide this study, Astin's (1991) *Input-Environment-Outcome* (I-E-O) model served as the framework for this research since this model is able to address the relationship between the three classes of variables used in this investigation.

Astin's (1991) *Input-Environment-Outcome* (I-E-O) model is the measurement framework used in this study to assess the impact various environmental experiences (e.g., faculty-student involvement, extracurricular activities, academic involvement and staff-student involvement) had on student outcomes (earn an associate's degree). Astin's (1991) I-E-O model is helpful because of its ability to reveal meaningful relationships among the input, environment, and outcome variables (Astin, 1991, 1996; Johnson, 2006; Kelly, 1996; Pascrarella & Terenzini, 2005). *Inputs* include the personal characteristics students bring to the educational program (gender, race, age, risk factors, etc.); *environment* refers to the student's experiences while

enrolled in the program (involvement factors); and *outcomes* are the goals of the program (earn an associate's degree). Astin's (1991) I-E-O model is highly regarded and has been used by numerous scholars to examine the impact of student involvement on student persistence (Astin, 1991, 1993; Johnson, 2006; Kelly, 1996; Pascarella & Terenzini, 2005). In their comprehensive review of the literature, Pascarella & Terenzini (2005) found that results were largely consistent with Astin's theory, and stated "that the level of student involvement and integration in any of the components of an institution's academic and social systems can be a critical factor in students' persistence decisions" (p. 426). Thus Astin's (1991) I-E-O model was well suited to examine the variables and address the research questions in this study. A graphical representation of Astin's model is located in Figure 3.1.

Input Variables. According to Astin's (1993) I-E-O model, inputs have the ability to influence the involvement levels of students and may directly influence the environment and outputs. Kelly (1996) noted that the "degree to which the I-E-O model can effectively portray the process of persistence at a particular institution is dependent upon the extent to which the input variables and measures of interaction and involvement utilized are relevant factors in the process" (p. 12). Therefore the selection of the input variables should be based on the perceived applicability of the variables to an institution.

For this study, the input variables selected included Horn's (1996) risk factors, which have been used in national studies to identify students as nontraditional students and several demographic variables that have been found to influence learning and development of students that include race, gender, and age. The risk factors included students who were enrolled part-time (i.e. less than 12 hours); were considered financially independent for purposes of determining financial aid eligibility; delayed enrollment in college by at least one academic year

after graduating from high school; worked more than 35 hours per week while enrolled in college; were a single parent; and earned a GED. A seventh risk factor added to this study was students who were military veterans due to the dramatic increase in military veterans enrolling in colleges nationwide and the many challenges these face in returning to civilian life. Rumann (2010) notes that community colleges will continue to experience a growing enrollment of military veterans and that these students may be considered at-risk as they attempt to readjust to civilian life.

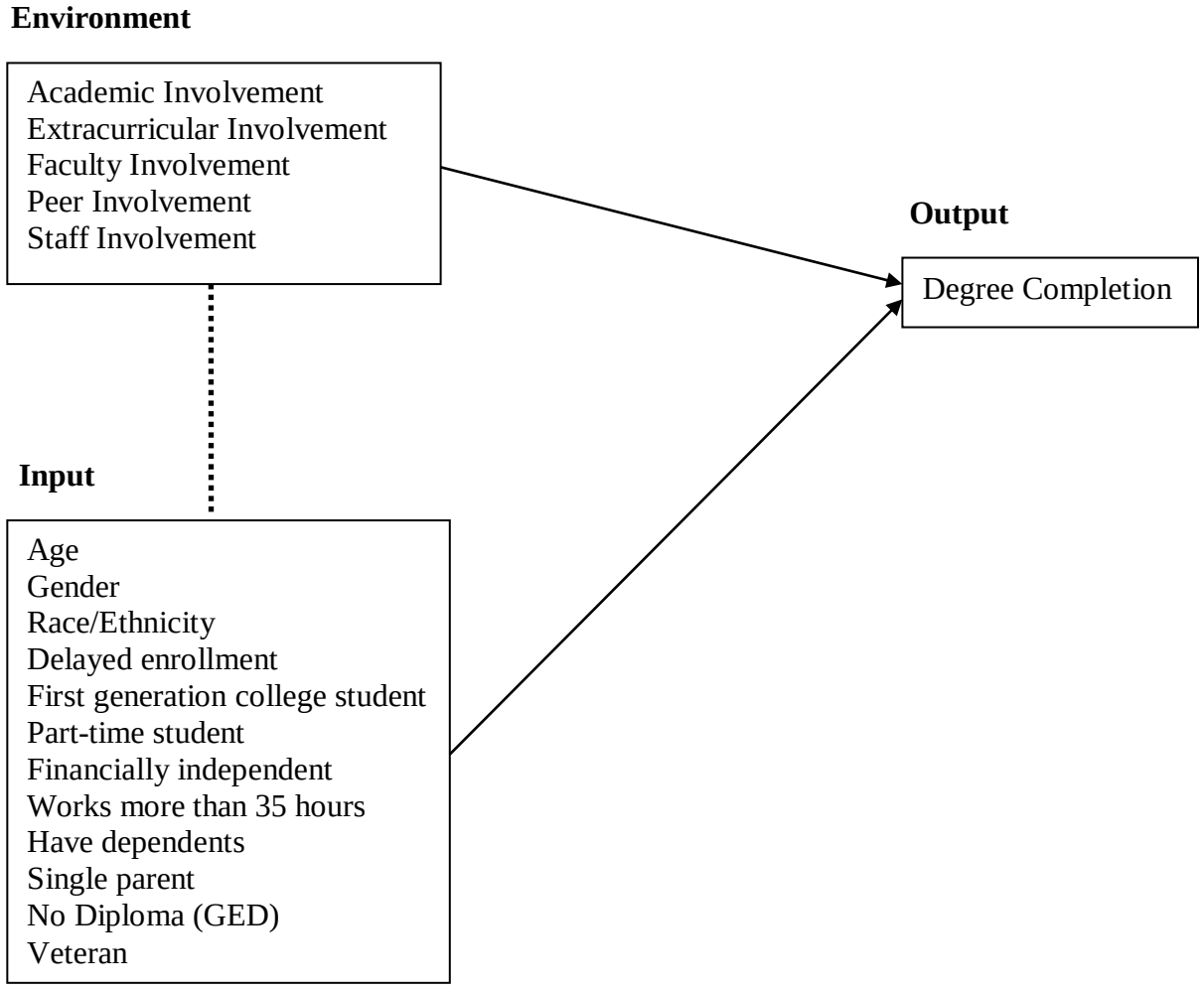

Figure 3.1. Conceptual Model of the Study based upon Horn's (1996) risk factors to identify nontraditional students, student demographics and Astin's (1993) student involvement factors.

The risk factors were placed along a continuum to determine the number of risk factors each student surveyed exhibited. This allowed the researcher to label students as "minimally nontraditional" if they had only one of these factors, "moderately nontraditional" if they exhibited two or three factors and "highly nontraditional" if they had four or more of these factors.

Environmental Variables. The environmental variables selected for this study consisted of the environment factors found within Astin's (1993, 1996) student involvement theory. These environment factors included faculty involvement, staff involvement, academic involvement, peer involvement, and extracurricular involvement. According to Astin (1993, 1996, 1999), these involvement factors have been identified as having positive effects on student retention at four-year institutions. In addition, numerous studies have demonstrated how these variables relate directly to the various environments a college campus is able to create and thus influence the learning, development, and persistence of college students (Astin, 1975, 1984, 1993, 1996, 1999; House, 1996; Johnson, 2006; Pascarella & Terenzini, 1998, 2005; Spitzer, 2000; Ullah & Wilson, 2007). This study sought to determine if similar involvement patterns exist for students at a two-year community college. The I-E-O model developed by Astin (1993) can provide valuable feedback to institutions since this model relies on variables central to understanding student involvement in college life and the impact these variables have on academic success.

Output Variable. Astin (1993) explains that outputs refer to the talents a program or institution is trying to develop. In this study, the dependent variable will be generally defined as students who have earned a degree from the participating institution during the 2010-11 academic year. Since the students surveyed were those who have already graduated, the dependent variable (college degree completion) has been predetermined. However, by surveying

nontraditional students in this manner, the researcher was able to examine if there were any patterns of involvement levels for nontraditional students who met the institution's primary educational outcome. In addition, since all graduates were sent the survey in order to identify nontraditional students from traditional students, differences of involvement levels among nontraditional students and traditional students were explored. Unlike many studies surrounding student persistence, this study sought to understand the types of involvement levels among students that stay enrolled and graduated as opposed to factors that cause students to leave college.

Instrumentation

The researcher conducted an extensive review of online and university library databases to identify a potential survey instrument that would measure the constructs of this study. Although a number of surveys have been developed through the years to examine the involvement patterns of students, most were developed for use at four-year institutions and included questions that are not applicable to students attending a community college. Some examples of these questions typically associated with four-year institutions include participation in a fraternity or sorority, questions about living on campus, and participating in senior capstone courses or projects. In addition, the majority of the potential survey instruments that were examined focused on currently enrolled students and not on college graduates. After completing a review of available survey instruments, the need for a new survey instrument became apparent that would measure the constructs of this study. This section details the development of the survey instrument and includes a discussion on the instrument reliability and validity.

Development. The "Community College Graduate Involvement Survey" (CCGIS) was developed to identify nontraditional students by their risk factors and to examine the

involvement experiences of community college graduates (See Appendix D). The CCGIS consisted of 48 items based on Astin's (1991) Inputs-Environment-Outcomes (I-E-O) model, as well as other variables selected for this study. The items were divided into three sections covering environmental factors, outputs, and background characteristics.

The first section of the CCGIS was labeled "Environmental Factors" and was used to measure the environmental constructs that include Astin's (1993) involvement factors. This section included 29 questions with a 5 point Likert response scale.

The next section was labeled "Outputs" and was intended to measure a major education outcome of the institution, degree attainment. Since the students in this study already met the graduation requirement, questions in this section were directly related to their degree attainment. There were four questions in this section that included an open ended question about choice of major or majors; a question about overall GPA earned at the institution that included four distinct GPA ranges; a question related to how long it took to complete the degree from one year through six years or more; and five possible options about plans for Fall 2011 that included an open ended question.

The third section was entitled Background Characteristics and consisted of 15 questions related to students' background characteristics and risk factors. These survey items identified the inputs variables and were used to distinguish between traditional and nontraditional students as well as provided basic demographic information about the participants.

Questionnaire design and ease of instrument use are key elements in acquiring data from college students. The CCGIS was designed to be completed in less than 15 minutes and the survey questions were arranged by sections following Astin's (1993) I-E-O model. However, since the Inputs section requested information pertaining to background characteristics and risk

factors, this section of the survey was moved to the end where these types of questions are commonly found on surveys. Effort was taken to ensure that response items included equal size ranges for questions that addressed students' participation with the environmental variables.

Validity. Although this was a new survey instrument, validity was maximized by adapting survey items from the Community College Survey of Student Engagement (CCSSE) and the College Senior Survey (CSS). The CCSSE is a national survey that is used to measure the engagement practices of community colleges and their impact on community college retention. In addition to asking questions that help identify nontraditional at-risk factors, the CCSSE also includes a number of questions related to frequency of involvement in college related activities. A number of these frequency questions related to involvement on a college campus provided a helpful framework to the development of questions used in the survey for this study.

Several of the CCSSE survey questions were adapted to provide a better fit for the community college aspect of this research study. In regards to faculty involvement, one question used on the CCSSE survey instrument states "worked on a paper or project that required integrating ideas or information from various sources". This question was adapted to form question 9 on the CCGIS that states "worked on a research project with a professor. Another set of questions on the CCSSE related to faculty involvement included the following: "asked questions in class or participated in class discussion, used email to communicate with an instructor, and worked with instructors on activities other than coursework". These questions were also adapted and used in the development of this instrument. The questions as adapted for this section of the survey are: "participated in class discussions" (question 4); "communicated

with professors via email" (question 14); and question 12 that states "worked with a professor outside of class (study abroad, community service, geology trip)".

Another group of questions adapted from the CCSSE survey related to peer involvement. These questions included the following: "discussed ideas from your readings or classes with others outside of class, worked with classmates outside of class to prepare class assignments", and "spent time participating in college-sponsored activities". These questions were adapted and became question 20 "discussed course content with students outside of class", question 21 "studied with other students from this college", and question 26 "participated in student organizations at this college".

In regards to academic involvement, questions adapted from the CCSSE survey included "preparing for class (studying, reading, writing, rehearsing or other activities related to your program) and tutored or taught other students". These questions were adapted and became question 6 "spent time doing homework each week" and question 7 "used the campus tutorial services".

The CCSSE survey instrument proved an invaluable resource in the development of questions for this research project in the areas of academic, faculty, and peer involvement. Additional question development related to academic and faculty involvement was based on questions drawn from the College Senior Survey (CSS).

The CSS survey is used by the Higher Education Research Institute (HERI) at University of California at Los Angeles where Alexander Astin is employed. One of the main purposes of this national survey is to determine what happens to students when they attend a four-year college or university. Attempts to contact HERI for permission to adapt their survey instrument for this research were made; however, no response to written or phone requests was received.

Therefore the use of the CSS was limited to four survey statements. The questions developed from referencing the CCS survey instrument were used in the Environmental Factors section of the survey for this study. The first two questions were directly related to their academic involvement and included Question 2, which asked "how often students worked on group projects during class" and Question 3, which asked "how often students worked on group projects outside of class." Questions 8 and question 10 were associated with student interaction with faculty. Question 8 stated "asked a professor for advice after class," and question 10 stated "were asked questions by the professor in class."

Review of instrument. The CCGIS was further improved by going through several reviews. The CCGIS was first reviewed by a panel of experts in the field. Each of these scholars provided valuable feedback that assisted with the development of the survey instrument. Perhaps the most valuable feedback received focused on one of the research questions. One of the original research questions was the following: "What is the relationship among Astin's (1993) involvement factors and degree completion for nontraditional students attending a community college?" One scholar posed whether this question could be addressed with this study. Although this question remained unchanged at the time of the prospectus defense, after a period of reflection the challenges in addressing this question were recognized and the question was adapted the question to read: "What is the relationship among Astin's (1993) involvement factors and risk factors for nontraditional students who have graduated from a community college?" Phrasing the research question in this manner allowed the relationship between the individual risk factors and the various types of involvement to be examined. This examination would help identity any significant relationship that may have existed between individual risk

factors and individual types of involvement and therefore what types of involvement students with certain risk factors should be encouraged to participate in at a community college.

Discussion among the scholars also led to changes in the actual survey instrument. Three questions that did not address the constructs of this study were removed from the survey, additional explanations were added to three questions, and the Likert scale was changed from a three-point scale to a five-point scale.

Survey Critique. After these changes were made, the survey was uploaded to SurveyMonkey, a fully functional, web-based survey instrument, for further scrutiny. After being placed on SurveyMonkey, the survey link was emailed to four 2009 community colleges graduates for review. The purpose of this student review was to ensure the items and phrasing were easily understandable and to determine if any of the questions needed additional explanation (Spector, 1992). Based on student feedback, two questions were modified for additional clarity. After these changes were made to the online survey, a pilot test and test of reliability were conducted.

Pilot test. A pilot study was conducted on SurveyMonkey to ensure the format of the instrument, the instructions, and phrasings of items were clear, unambiguous and relevant to this study. Permission for the pilot study was requested through the Academic Affairs Office of the participating institution. Participants were provided with the *Community College Graduate Survey Pilot Instruction Sheet* (see Appendix B) that explained why the survey was being conducted and instructed participants to be aware of the clarity of wording and relevance of each survey item. Participants were also given the option to suggest additional survey items or recommendations to remove any survey questions. The CCGIS Pilot Survey was emailed to 30 randomly selected 2010 graduates. Participants were randomly selected from the master list of

students who had been approved for graduation by choosing every fifteenth file until a total of 30 participants had been identified. The students selected were emailed both the survey link and instructions and were given two weeks to respond. One email reminder to complete the survey was sent during week two. Of the 30 students invited to participate, 11 students (36.6%) responded. The researcher and methodologist reviewed the responses and the following issues were identified and corrected:

1. In section 3, labeled Outputs, the response options for the statement "please indicate your overall grade point average (GPA) earned from this college*"* were updated. A half a year was added to each response choice indicating how long a student had been enrolled in college.
2. A typographical error was identified and corrected in the instructions.
3. A question asking about day or evening classes was removed since the question did not support any of the constructs of this study.
4. The environmental factors section was modified to include one leading statement at the top of the page instead of repeating the statement 29 times.
5. The responses on the Likert scale received additional spacing to provide greater visual separation between each response.

Once the changes described above were completed, the survey instrument was approved by the methodologist for this research study.

Reliability. In addition to the pilot test, Cronbach's alpha was used to determine if the environmental questions in the survey instrument consistently reflected the environmental construct. The environmental construct in this study consisted of the following factors: academic involvement, extracurricular involvement, faculty involvement, peer involvement, and

staff involvement and these factors are directly associated with the following research question: What is the relationship among Astin's (1993) involvement factors and risk factors for nontraditional students who have graduated from a community college? Each of these factors were measured using the 29 items from Section 2 – Environmental Factors of the CCGIS instrument and may be viewed in Appendix F. For each of the 29 items related to the environmental construct Cronbach's alpha ranged from .936 to .945 for an overall Cronbach's alpha of .943. Field (2000) notes that a score of .7 or above for Cronbach's alpha indicates good reliability.

The remaining questions in this study were related to the input and output constructs and were descriptive in nature. According to Shuttleworth (2009), descriptive questions do not require a reliability test since they are not measuring a theorized psychological construct. Therefore, the descriptive questions were not tested using Cronbach's alpha.

Participating Institution

A mid-sized community college with six campuses serving approximately ten counties in the Southeast was selected as the site for this study. Like many community colleges across the country, this community college has been experiencing record enrollment growth and grew from approximately 2,500 students in 2004 to just over 5,500 in 2010. Approximately 80% of the student body is white, 62% are female, 56% are enrolled full-time, and the average age is 24 years old. This institution has graduated approximately 400 to 500 students each year within the last three years (Fact Book, 2009).

The primary mission of the institution is to offer an Associate degree in the Arts or an Associate degree in Science. In addition, three programs leading directly into careers are offered: Nursing, Dental Hygiene, and Human Services (social work). An important fact to note

is that the State of Georgia (at the time of this report) had two different systems of higher education. The University System of Georgia had 35 four-year and two-year institutions and the Technical College System of Georgia has 25 institutions. The main mission of the University System is bachelor degree attainment and the main mission of the Technical College system is workforce development. The primary mission of the institution in this study is providing access to four-year institutions.

Over the last five years, the retention rate of first time freshmen at this institution has fluctuated from 53% to 60%. Perhaps most disheartening are the poor graduation rates of first time freshmen. According to the institution's *Fact Book* (2006), out of 550 new freshmen that enrolled in 2002, only 46 students or 8.36% of freshmen graduated within three years. This low graduation percentage provides further emphasis on the challenges two-year institutions face and why additional research is needed on retention of nontraditional students at two-year community colleges.

A fair amount is known about the factors that cause students to leave the institution such as academic dismissal, transfer to another institution, and financial reasons; however little is known about the factors that influence students' decisions to stay and persist to graduation. Therefore, the students selected for this study were those students that have met the main educational outcome of the institution – earned an associate degree. Since the purpose of this study was to examine the involvement factors that may contribute to the degree completion of nontraditional students, all students that met the requirements for graduation were surveyed.

Data Collection

This section will outline the steps taken to complete the data collection as well as the permission needed to complete the study, administration of the survey instrument, and the preparation for the data analysis.

Permission. Before beginning the research, approval to conduct the research involving human subjects was sought both at the institution where the research was conducted and with the researcher's University Institutional Review Board (IRB). The approval letter from the college president to conduct the research may be found in Appendix A and the IRB approval is located in Appendix G.

Administration of survey. Once approval was received from both institutions, all students who graduated during the 2009-2010 academic year were emailed a link to the survey. According to the Office of the Registrar, 496 students applied for graduation for the 2010 academic year. The President of the college where the research was being conducted agreed to have the Registrar send the survey to their graduates to ensure the researcher did not gain access to student email addresses. Further, the participants received the survey invitation from an officially recognized source in an effort to increase the response rate. Unfortunately the IRB approval was received just prior to the 2010 graduation date and by the time the survey was emailed from the Registrar's Office, most graduates were no longer checking their college accounts. The survey was sent from the Registrar's Office on five different occasions during the month of May and the first part of June 2010. Only 13 (2.6%) graduates responded to the survey invitation.

After consultation with the major professor and the methodologist, the decision was made to wait and conduct the research with the 2011 graduating class instead of mixing survey

delivery methods by sending the 2010 graduates who did not respond electronically a mailed copy of survey. This delay allowed the Registrar at the community college to send the survey link to students as they applied for graduation. The Registrar began sending the survey link to 2011 graduates in December 2010 and continued sending the survey link every two weeks through April 6, 2011. After a few students complained about receiving the email multiple times, the Registrar began isolating the emails to ensure the survey link was sent no more than three times for each graduate.

Table 3.1

Demographics of Participants (N = 124)

Descriptive Variable	Frequency	%
Race/Ethnicity		
White	106	85.48
Other	18	14.51
Age		
20 – 24	41	33.06
25 – 30	27	21.88
31 – 34	21	16.94
35 – 40	11	8.87
41 – 44	11	8.87
45 – 50	9	7.26
51+	5	4.03
Gender		
Female	96	77.41
Male	27	21.77
Student Type		
Traditional (<24 yrs. old)	26	20.97
Nontraditional (>24 yrs. old)	98	79.03

Participants. The Registrar's Office reported the survey link had been sent to a total of 372 individual graduates for 2011. Out of the 372 graduates data was collected from 125 respondents or 33.87% of the graduates. Out of the 125 respondents, one respondent was removed due to a lack of responses. Of the 124 respondents, 79.03% were female, the average

age of participants was 31 and the largest ethnic group was white at 85.48%. In regards to student type, 79.03% were designated as nontraditional students based on their responses to the at-risk questions. Table 3.1 shows the basic demographic data for the participants in this study.

Student type was determined based on responses to survey questions addressing risk factors. According to Horn's (1996) national research on risk factors, the more risk factors students exhibit the greater the likelihood they will not persist to graduation. There were a total of 75 participants or 60.48% that reported having two or more nontraditional risk factors, with the largest group reporting being moderately at-risk with 47.58% having two or three risk factors and 12.90% considered as highly at-risk with more than three risk factors.

Data Analysis

Data collected from this survey were analyzed by the Statistical Consulting Center at the University of Georgia with SAS 9.2. SAS 9.2 is an advanced analytical tool used by corporations to integrate and analyze data. The data collected was reorganized so statistical analysis could address the following research questions:

1. What are the predominant nontraditional risk factors of this student population?
2. What risk factors of nontraditional graduates are related to their levels of involvement?
3. What are the differences in involvement levels of nontraditional and traditional student graduates?
4. What types of involvement levels are found to be significant for nontraditional students?

The initial data set contained information on 125 subjects, including a 29-question involvement survey that could be used to determine scores for each of the involvement factors

found within in the environmental construct, questions related to seven risk factors, and demographic information such as gender, age, race, whether parents attended college, and the campus the student attended. One individual was missing a large number of answers and was removed from the data set, leaving 124 individuals for analysis. Seventeen of the remaining individuals were missing answers to at least one question; however, only one of those was missing more than three answers. These missing answers were accounted for by averaging only the questions the individuals did answer in order to calculate the factor scores. Factors were labeled InterFaculty (interaction with faculty), InterStaff (interaction with staff), InterPeers (interaction with peers), AcaInvol (academic involvement), and ExtInvol (extracurricular involvement).

For Research Question 1, basic descriptive statistics including frequency and percentages were performed to determine the most common risk factors for participants in this study. Risk factors were all reorganized as "yes" or "no" variables from the information provided in the original spreadsheet ("yes" responses were coded as a "1" and "no" responses were recorded as a "0"). The variables created were Delayed Enrollment (1 if there was more than one calendar year difference between high school graduation and college enrollment), Part-Time Enrolled (1 if the individual had ever been enrolled in college on a part-time basis), Work (1 if the individual worked more than 35 hours per week), Financially Independent (1 if the individual applied for financial aid and was considered financially independent), a Single Parent (1 if the individual was a single parent), No High School Diploma (1 if the individual graduated from high school with a GED) and a War Veteran (1 if the individual was a veteran of any war).

For Research Questions 2 and 3, the data were first organized into distribution tables by overall responses, traditional and nontraditional status, and finally by their at-risk indicators as

related to various involvement levels. Participants were considered “traditional” if they had no risk factors and "nontraditional" if they had at least one risk factor. Further, a nontraditional student was considered to be Risk Category 1 if they had only one risk factor, Risk Category 2 if they had two to three risk factors, and Risk Category 3 if they indicated they had four or more than risk factors.

Once the distribution levels were determined, analysis was expanded to include *Analysis o*f *Variance* or *ANOVA*. *ANOVA* provides much greater flexibility in designing experiments and interpreting results when working with two or more treatments (Gravetter & Wallnau, 2007), which is particularly helpful to researchers.

To further assist the analysis of this study, the distribution of involvement factor scores according to the students' various demographic characteristics were calculated to help determine what relationships exist between the demographic characteristics of the students and the different involvement factors. The variables created were Gender ("Male" and "Female"), Age (divided into "Traditional" for those 24 or younger, and "Nontraditional" for those older than 24), Race (divided into "White" and "Other"; this division was due to the vast majority of individuals identifying as "White" or "Caucasian" as well as some hard-to-classify answers resulting from the open-ended question), Parents College Enrollment to identify first generation college students ("Yes" for those who had at least one parent or guarding who had attended college and "No" for those whose parents had not attended college), and Campus.

For four of the demographic factors (Gender, Age, Race, and Parents College Enrollment), there are only two levels of the demographic characteristic (for example, possible Gender values are Male and Female). According to Gravetter and Wallnau (2007), the appropriate test to use when determining whether an average score is different between just two

types of individuals is a *t-test*. The t-test was used to compare the mean scores of the two groups on each involvement factor, and based on the variability of the scores within each group, determine whether the difference was large enough to likely exist in a population of similar students rather than being a result of the particular sample chosen for this study. When the difference is large enough compared to the variability, the difference is statistically significant. Results with a P-value of 0.05 or less, indicate the difference between the two groups is significant.

For the fifth demographic factor, campus location, there were six possible campuses to which a student could belong; therefore, a *one-way ANOVA* was employed. As with the t-test, if the overall P-value is found to indicate a significant difference, further pairwise tests are conducted to determine which groups in particular are significantly different from which other group(s). Initially all six campuses were used, but for the final analyses three of the six were combined into an "Other" category because of the small number of respondents from each of these campuses individually.

After this analysis was completed, additional statistical tests were conducted to help determine how the risk levels of students were related to their scores for each of the involvement factors. Primarily, one-way ANOVAs were calculated in order to analyze the relationships of the risk levels to the involvement factors. However, in order to take into account the demographic characteristics in the analyses of involvement factors where they were found to be significant, two-way ANOVAs were conducted to analyze the simultaneous relationships of the risk levels and appropriate demographic characteristic with the involvement factor. This analysis helped ensure any significant relationships found between risk levels and involvement factors

were due to actual relationships between the two, rather than a coincidental relationship between the risk levels and demographic characteristics.

For the fourth research question, a randomized block design was employed in order to determine if there were any significant involvement levels found among nontraditional graduates in this study. Using ANOVA, involvement data were analyzed as a block (each involvement factor was measured for each respondent, and analyzing it this way accounted for individual differences between respondents), and type of involvement factor as the independent variable predicting the involvement score. This analysis helped determine if there were any significant differences among the various levels of involvement used in this study.

Limitations of the Study

This study utilized a convenience, non-random sample of students from a two-year community college in the Southeast and as a result, no statistical inference was assumed. Any generalizations made by the researcher were based on the data collected from this sample. This study was limited to students that met the requirements for an associate degree at this institution during one academic year. This timeline limits the external validity and transferability of the study since the data were collected at a single point in time. Additional research with a much larger sample is needed in order to extend the results of involvement factors and risk factors to other two-year institutions in the Southeast and throughout the country.

Another limitation to this study was that it was conducted at one multi-campus institution in the southeast. Two-year institutions are unique and continue to go through transformation in both student demographics and changes in course offerings (many are now offering limited four-year degrees).

Assumption of the Study

The institution selected for this study was a multi-campus community college and as such opportunities for certain types of involvement may vary depending on location, size, and availability of resources at each campus location. Involvement factors that may vary by campus location could include staff support and extra-curricular activities.

Another assumption included the possibility of a low response rate from community college graduates. Few studies have focused on community college graduates and one of the reasons for this could be difficulty in getting responses from this population of students that are transitioning in many cases to another college or a new career.

A final assumption was that students would answer the survey honestly. To help ensure that students would answer the questions honestly, the survey was designed to remove any questions that would require participants to respond negatively about their behavior.

Summary

This chapter reviewed the conceptual framework employed in this quantitative study. The conceptual framework for this study was Astin's (1991, 1993) student involvement theory and his I-E-O theoretical model. The "I" stands for inputs, the "E" for environment and the "O" for outputs. The inputs selected for this study included Horn's (1996) risk factors to identify nontraditional students and several background characteristics that consisted of age, gender and ethnicity. The environmental variables were Astin's (1991, 1993) involvement factors which included faculty involvement, staff involvement, academic involvement, peer involvement, and extracurricular involvement. The output was predetermined to be college graduation rates since each participant in this study was limited to students that had met the requirements for an associate's degree.

After the review of the conceptual framework and the variables used in this study, a detailed description was provided on the development of the survey instrument and the various processes implemented in the administration of the survey. This was followed by a review of the institution and the participants selected for this study which consisted of a public multi-campus community college and 124 graduates. Finally, the data analysis employed in this study was examined along with a brief discussion on the limitations and assumptions of this study.

CHAPTER 4

Research Findings

Using Alexander Astin's Student Involvement Theory as the conceptual framework, the purpose of this quantitative study was to examine the relationship between involvement types and risk factors that may have contributed to degree completion for a group of community college graduates. This research study was guided by Astin's (1993) I-E-O model. For the purposes of this study, the model was modified to include Horn's (1996) risk factors to identify nontraditional students. This chapter details the results of the statistical analyses described in the previous chapter. The results of the analyses are reviewed in relation to each of the research questions guiding this study. The research questions in this study are as follows:

1. What are the predominant nontraditional risk factors of this student population?
2. What risk factors of nontraditional graduates are related to their levels of involvement?
3. What are the differences in involvement levels of nontraditional and traditional student graduates?
4. What types of involvement levels are found to be significant for nontraditional students?

The Predominant Nontraditional Risk Factors. Research Question 1 was: "What are the predominant nontraditional risk factors of this student population?" Nontraditional students were identified in this study based on their responses to seven risk questions. Students that indicated they had at least one risk factor used in this study were considered to be nontraditional.

A total of 26 respondents were identified as traditional students and 98 respondents were identified as nontraditional students.

The majority of respondents (79%) have at least one risk factor, indicating that many of the students enrolled at this community college may be considered nontraditional students. Once identified as being nontraditional, participants were classified into Risk Categories according to the number of risk factors associated with the participant. If a student did not have any risk factors, the student was considered a traditional student. Students with one risk factor were considered minimally nontraditional, students with two or three risk factors were considered moderately nontraditional and students with four or more risk factors were considered highly nontraditional. Student risk categories and frequencies are displayed in the table below.

Table 4.1

Risk Category Frequency Summary (N =124)

Risk Category	Frequency	%
Traditional	26	20.97
Minimally Nontraditional	23	18.55
Moderately Nontraditional	59	47.58
Highly Nontraditional	16	12.90

The majority of participants in this study were considered to be moderately nontraditional (47.58%) since they exhibited two or three risk factors. The Risk Category with the lowest amount of responses was highly nontraditional student's at12.90%. This category requires three or more risk factors associated with a student. Only 26 of participants (20.97%) were considered to be traditional students in this study.

The distributions of individual risk factors were also of interest. Table 4.2 below indicates, for each risk factor, how many participants did and did not have that risk factor. "Yes Frequency" and "Yes Percent" indicate the number and percentage of Nontraditional (at risk) students who did have each particular risk factor, whereas "No Frequency" and "No Percent" indicate the number and percentage of students who did not have each particular risk factor. The # Missing indicates the number of the 98 nontraditional students who did not have a response recorded for a particular factor.

Table 4.2

Frequency Summary of Seven Risk Factors for Nontraditional Students

Risk Factor	Total N	Yes Freq	Yes %	No Freq	No %	# Missing
Enrolled Part-Time	97	71	73.20	26	26.80	1
Financially Independent	97	63	64.95	34	35.05	1
Delayed Enrollment	92	39	42.39	53	57.61	6
Worked (>35 hours)	98	27	27.55	71	72.45	0
Is a Single Parent	97	15	15.46	82	84.54	1
No HS Diploma (GED)	98	12	12.24	86	87.76	0
War Veteran	98	6	6.12	92	93.88	0

The most common risk factor among the nontraditional students in this study was students enrolled part-time (less than 12 hours) for at least one or more terms at this institution (summer term excluded). Part-time enrollment accounted for 73.20% of the participants that responded to this survey. Approximately 64.95% were considered financially independent, indicating they were classified as independent students based on their federal financial aid information. The third and fourth most common risk factors were delayed enrollment in college

at least one year after completing high school at 42.49% and worked more than thirty five hours per week while enrolled in college at 27.55%. The least common risk factor was being a war veteran, as just over 6% of participants in this sample were considered war veterans. Based upon these results, the most predominant risk factors associated with the participants were students enrolled part-time (73.20%), being considered financially independent (64.95%) and delaying enrollment in college at least one year after graduation high school (42.39 %).

Risk Factors Related to Levels of Involvement and the Differences in Involvement Levels Among Traditional and Nontraditional Graduates. Research Question 2 was: What risk factors of nontraditional graduates are related to their levels of involvement? Question 3 was: What are the differences in involvement levels of nontraditional and traditional student graduates? In order to address these two questions, the first step in the analysis required that the 29 items found within Section 2 of the CCGIS instrument be appropriately grouped and analyzed to the corresponding involvement factor. The results of this analysis are available in Table 4.3 under the section labeled overall distribution.

Table 4.3

Overall Distribution of Involvement Factors and Distribution by Gender for the Five Involvement Factors (N = 124)

	Overall Distribution		Male (N = 26)		Female (N = 98)	
Types of Involvement	Mean	*SD*	Mean	*SD*	Mean	*SD*
Interaction with Faculty	3.05	0.62	3.05	0.57	3.05	0.63
Interaction with Staff	2.08	0.70	2.09	0.61	2.08	0.72
Interaction with Peers	3.29	0.83	3.61	0.70	3.20	0.84
Academic Involvement	3.30	0.51	3.32	0.50	3.29	0.52
Extracurricular Involvement	1.70	0.85	1.88	0.95	1.66	0.83

In this table, "Involvement" refers to each of the five involvement factors. These include: (a) interaction with faculty, (b) staff, and (c) peers; and (d) academic and extracurricular involvement. Once the distribution levels for each of the involvement factors were determined, an analysis was conducted to determine the distribution levels by gender. The distribution of involvement levels by gender are shown in Table 4.3. In Table 4.3, academic involvement (M = 3.30), interaction with peers (M = 3.29) and interaction with faculty (M = 3.05) appear to the most popular types of involvement for the participants in this study. However, additional analysis was needed to determine if any risk factors were related to involvement levels and to determine if any demographic characteristics influenced any relationship.

Table 4.4

Distribution of Involvement Factors by Risk Category

Risk Category	No Risk Factors (N = 26)		One Risk Factor (N = 23)		Two or Three Risk Factors (N = 59)		Four or More Risk Factors (N = 16)	
Types of Involvement	Mean	*SD*	Mean	*SD*	Mean	*SD*	Mean	*SD*
Interaction with Faculty	3.05	0.57	3.17	0.58	3.00	0.63	3.04	0.72
Interaction with Staff	2.09	0.61	1.96	0.79	2.06	0.68	2.32	0.76
Interaction with Peers	3.61	0.7	3.38	0.74	3.14	0.82	3.16	1.07
Academic Involvement	3.32	0.5	3.33	0.62	3.28	0.51	3.28	0.4
Extracurricular Involvement	1.88	0.95	1.8	0.89	1.6	0.79	1.67	0.91

In order to determine if any risk factors were related to involvement levels, the data were then arranged into a distribution table based on the number of risk factors indicated by each respondent. These risk factors were placed along a continuum to determine the number of risk factors students exhibited. Participants that exhibited no risk factors were considered traditional students. Students that exhibited one risk factor were labeled minimally nontraditional, students

with two or three risk factors were labeled moderately nontraditional, and students with four or more risk factors were considered highly nontraditional. Table 4.4 provides the distribution levels for the participants of this study.

As seen in Table 4.4, the majority of the participants (59 or 47.58%) indicated they were moderately nontraditional since they exhibited two or three risk factors. This analysis demonstrates the risk levels associated with the involvement levels of moderately nontraditional students that included academic involvement (M = 3.28), interaction with peers (M = 3.14) and interaction with faculty (M = 3.0). Only 26 participants indicated that they exhibited no risk factors and 16 participants indicated they had four or more of the risk factors. Although this analysis helps identify the risk factors associated with a nontraditional students' level of involvement, additional analysis was needed to determine if any demographic characteristics influenced any relationship.

In order to determine if any demographic characteristics influenced any of the relationships, the distribution of involvement factor scores according to the students' various demographic characteristics were summarized. Once the distribution of involvement factors was determined a T-test was employed to determine if the specific demographic characteristics influenced any of the relations as seen in Table 4.5.

According to results found in Table 4.5, the majority of respondents to this survey were female (96 out of 123) compared to 27 males. Although the means for males and females were similar in most areas, females exhibited higher levels of interaction with peers (M = 3.36 to M = 3.08) and with academic involvement (M = 3.35 to M = 3.13) than males.

Table 4.5

Distribution of Involvement Factors by Gender and T-test Results for Effect of Gender

Gender	Male (N = 27)		Female (N = 96)				
Types of Involvement	Mean	SD	Mean	SD	DF	t-Value	P-Value
Interaction with Faculty	3.03	.061	3.07	0.61	121	0.25	0.80
Interaction with Staff	2.11	0.77	2.08	.069	121	-0.22	0.82
Interaction with Peers	3.08	0.76	3.36	0.83	121	1.57	0.11
Academic Involvement	3.13	0.56	3.35	0.50	121	1.89	0.06*
Extracurricular Involvement	1.76	0.79	1.69	0.88	121	-0.37	0.71

*p < .05

After the distribution levels of the involvement scores were tabulated according to gender, additional statistical tests were utilized to determine if the involvement scores were *significantly* different among males and females and how the scores related to the five involvement factors. The results of the *t-test* for gender are included in Table 4.5. P-values were placed at the end of Table 4.5 and significant results were indicated with an asterisk (*).

The results to the t-test for gender did indicate a significant difference for the area of academic involvement $F(1, 121) = 1.89$, $p = .06$. Males exhibited higher means in the areas of academic involvement (M = 3.13), interaction with peers (M = 3.08) and interaction with faculty (M = 3.03). Similar to the males, females displayed higher means in their interaction with peers (M = 3.36), academic involvement (M = 3.35) and interaction with faculty (M = 3.07). The lowest means for both males and females were found among their interaction with staff and in extracurricular involvement.

Since age has been previously used to identify nontraditional students (Kasworm et al. 2002; Kasworm, 2003; Spitzer, 2000), this study examined the distribution levels and tested the

significance of age among the involvement factors. In examining students by age, the participants were classified as either being less than 25 years old or more than 25 years old. The results of the distribution levels by age are found in Table 4.6. Students who indicated they were less than 25 years old, displayed higher means among interaction with peers (M = 3.54) than students who were 25 years or older (M = 3.14). Although extracurricular involvement appeared to be low for both age groups, students less than 25 years old exhibited a mean of 1.87 compared to the 1.63 displayed by students 25 years or older.

Table 4.6

Distribution of Involvement Factors by Age and T-test Results for Effect of Age

Age	< 25 Years (N = 45)		>25 Years (N = 70)				
Types of Involvement	Mean	SD	Mean	SD	DF	t-Value	P-Value
Interaction with Faculty	3.04	.058	3.07	0.62	113	0.21	0.83
Interaction with Staff	2.09	0.72	2.09	.069	113	-0.01	0.99
Interaction with Peers	3.54	0.76	3.14	0.81	113	-2.63	0.01*
Academic Involvement	3.27	0.5	3.34	0.54	113	0.64	0.52
Extracurricular Involvement	1.87	0.93	1.63	1.82	113	-1.49	0.11

*p < .05

In the test for significance for effect on age, students who indicated they were less than 25 years old were labeled as traditional and students 25 years or older were marked as nontraditional. Interaction with peers was the only area that demonstrated any significance with a P value of .010. Interaction with peers also exhibited the highest mean (M = 3.54) for students who were less than 25 years old.

Since there were a limited number of minorities that responded to the survey (18), all minorities were analyzed together as one group and noted as “other” in Table 4.7. White

students had higher means than minorities among their interaction with peers (M = 3.31 to M = 3.16), with their academic involvement (M = 3.31 to M = 3.21) and with their interaction with faculty (M = 3.06 to M = 2.96). Minority students exhibited higher means than white students among extracurricular involvement (M = 2.00 to M = 1.65) and interaction with staff (M = 2.16 to M = 2.07). Although these differences exist among the means, Table 4.7 reveals that the order in which students participated in the various types of involvement were almost identical regardless of race.

Table 4.7

Distribution of Involvement Factors by Race and T-test Results for Effect of Race

Race	White (N = 106)		Other (N = 18)				
Types of Involvement	Mean	SD	Mean	SD	DF	t-Value	P-Value
Interaction with Faculty	3.06	.062	2.96	0.58	122	-0.64	0.52
Interaction with Staff	2.07	0.68	2.16	.082	122	0.51	0.60
Interaction with Peers	3.31	0.84	3.16	0.79	122	-0.72	0.47
Academic Involvement	3.31	0.53	3.21	0.45	122	-0.75	0.45
Extracurricular Involvement	1.68	0.81	2.00	1.07	122	1.61	0.11

After the distribution levels for race were determined, a T-test was employed to determine if there were any significant differences for race among the five involvement factors. Although academic involvement and interaction with peers had the highest means for both whites and minorities, there were no significant differences found for race among the various involvement factors. Results of the T-test were included in Table 4.7.

Once the effect of race was examined, analysis was conducted to determine the distribution levels of first generation college students based upon their parents' academic history.

Approximately 54% of the respondents indicated their parent or parents attended college and 46% indicated their parent or parents never attended college. Respondents whose parents did not attend college were considered first generation college students. First generation college students in this study exhibited higher means in all areas of involvement factors compared to students whose parent or parents did attend college. The two areas with the greatest differences in means among first generation students were found with their interaction with peers (M = 3.41 to M = 3.20) and with their academic involvement (M = 3.36 to M = 3.25). These results may be viewed in Table 4.8.

Table 4.8

Distribution of Involvement Factors by Parents College Enrollment and T-test Results for Effect of Parents College Enrollment

Parents Attended College	Yes (N = 67)		No (N = 56)				
Types of Involvement	Mean	SD	Mean	SD	DF	t-Value	P-Value
Interaction with Faculty	3.04	.06	3.08	0.63	121	0.33	0.741
Interaction with Staff	2.03	0.73	2.15	.067	121	1.01	0.313
Interaction with Peers	3.2	0.83	3.41	0.8	121	1.44	0.152
Academic Involvement	3.25	0.46	3.36	0.57	121	1.14	0.257
Extracurricular Involvement	1.68	0.81	1.73	0.92	121	0.35	0.723

After the distribution levels of parents' college enrollment were determined, a T-test was run to determine if there were any significant differences among the involvement factors while accounting for college enrollment of parents. No significant differences were found among the involvement factors when accounting for parent enrollment and may be viewed in Table 4.8.

Table 4.5 through Table 4.8 provided the means of each involvement factor for the demographic characteristics with only two levels, as well as the degrees of freedom of the test,

the T-statistic on which the P-value is based, and the P-value. The two demographic characteristics that were found to potentially have an impact on any of the involvement factors were gender and age. Gender had a borderline significant relationship with academic involvement (P-value = 0.061; females have somewhat higher scores here than males), age, had a significant relationship with Interaction with peers (P-value = 0.010; students of a traditional college age have somewhat higher scores here than those of a non-traditional age).

Since this study took place at a multi-campus institution, the distribution of involvement factors by campus location was examined to determine if there were any significant effect associated with campus location and involvement factors. There were six physical campus locations and one virtual campus for online students. The campus locations were labeled as Campus 1; Campus 2; Campus 3; Campus 4; Campus 5; Campus 6; and online. Online was added as an additional campus to account for the growing number of online students with limited time and interaction with others on campus. The distribution levels of the involvement factors associated with campus locations are found in Table 4.9.

The largest number of participants in this study indicated Campus 2 as their home campus with 52 responses or 41.93%. The next largest number of participants indicated Campus 1 as their primary campus with 38 students and Campus 3 with 24 students. The fewest responses came from the Campus 4 (6), online (3) and Campus 5 with one student. Academic involvement, interaction with peers and interaction with faculty had the highest means for each of the campus locations. Interaction with staff and interaction with peers displayed the lowest means for all locations. The results are found in Table 4.9.

Table 4.9

Distribution of Involvement Factors by Campus

Campus	Campus 1 (N = 38)		Campus 2 (N = 52)		Campus 3 (N = 24)		Campus 4 (N = 6)		Online (N = 3)		Campus 5 (N = 1)	
Types of Involvement	Mean	*SD*	Mean	*SD*	Mean	*SD*	Mean	*SD*	Mean	*SD*	Mean	*SD*
Interaction with Faculty	3.11	0.61	3.08	0.63	2.91	0.67	2.92	0.4	2.95	0.72	3.13	.
Interaction with Staff	2.09	0.67	2.18	0.79	1.87	0.47	2.02	0.79	2.27	0.81	1.4	.
Interaction with Peers	3.21	0.87	3.23	0.86	3.61	0.72	2.93	0.63	3.1	0.78	3.8	.
Academic Involvement	3.24	0.48	3.35	0.55	3.34	0.4	3.14	0.49	3.17	1.3	2.83	.
Extracurricular Involvement	1.41	0.59	2.13	1.03	1.35	0.43	1.53	0.68	1.47	0.46	1.0	.

With regards to the campus attended by participants, there were four possible campuses to which a student could belong, so instead of a T-test a *one-way ANOVA* was employed. Three of the campus locations included Campus 2, Campus 1, and Campus 3 locations. Since there were few responses from the other locations, they were pulled together and categorized as other.

Table 4.10 provides the ANOVA results for the effect of campus on each of the five involvement factors, including the F-statistics from which the P-value is calculated for each involvement factor. The only involvement factor that was found to have a significant relationship with Campus was Extracurricular Involvement with a P-value of .0001.

Table 4.10

ANOVA Results for Effect of Campus on Involvement Factors

Involvement Factors	Source	*DF*	Sum of Squares	Mean Square	F Value	P-Value
Interaction with Faculty	Model	3	0.79	0.26	0.69	0.55
	Error	120	45.82	0.38		
	Corrected Total	123	46.62			
Interaction with Staff	Model	3	1.64	0.54	1.13	0.34
	Error	120	58.43	0.48		
	Corrected Total	123	60.08			
Interaction with Peers	Model	3	3.32	1.10	1.65	0.18
	Error	120	80.94	0.67		
	Corrected Total	123	84.27			
Academic Involvement	Model	3	0.65	0.21	0.82	0.48
	Error	120	31.96	0.26		
	Corrected Total	123	32.61			
Extracurricular Involvement	Model	3	16.13	5.37	8.77	<.0001*****
	Error	120	73.57	0.61		
	Corrected Total	123	89.71			

*p <.05

The relationship between extracurricular activities and campus was explored further in the pairwise comparisons found in Table 4.11. Results indicated that Campus 2 had a higher average Extracurricular Involvement score (P-value < 0.0001; the score is 2.13, referring back to Table 4.9) than each of the other campus locations. The other campuses were not shown to be significantly different from one another.

Table 4.11

Pairwise Comparisons for Extracurricular Involvement by Campus

Campus Comparison	Difference Between Means	95% Confidence Limits	
		Lower	Upper
Campus 2 – Campus 1	0.71	0.38	1.04*
Campus 2 - Campus 3	0.77	0.39	1.15*
Campus 2 - Other	0.66	0.13	1.20*
Campus 1 - Campus 3	0.06	-0.34	0.46
Campus 1 - Other	-0.04	-0.60	0.50
Campus 3 - Other	-0.11	-0.69	0.47

*p <.05

Since there was evidence that academic involvement may be related to gender, interaction with peers may be related to age, and extracurricular involvement may be related to campus, these demographic characteristics were controlled for when determining whether the involvement factors were significantly related to the various risk levels of the students. Various analyses were conducted to determine how the risk levels of students were related to their scores for each of the involvement factors.

In the next section, a series of one-way ANOVAs were used in order to analyze the relationships of the risk levels to the involvement factors and to determine if there were any significant differences among the involvement factors based upon traditional or nontraditional

student type. In these tables, values which were not previously explained include the R-square, which can be thought of as the percentage of variation in the involvement factor score that is related to risk status; Root MSE, which can be thought of as the "typical" error in prediction when predicting the involvement factor score from the risk status; and the Mean of the involvement factor, which is the average of the involvement factor score over all observations. All test for significance used a significant level of .05 and significant levels were emphasized in with an asterisk (*).

In table 4.12, a one-way ANOVA was calculated to determine the relationship of participant risk status (Traditional versus Nontraditional) to the participant scores on the Interaction with the Faculty and Staff Involvement factors. The results of the analysis showed there were no significant differences found between traditional and nontraditional students in their interaction with faculty involvement factors, $F(1, 124) = .000$, $p > .05$ or with staff involvement factors, $F(1, 123) = .01$, $p > .05$.

Table 4.12

ANOVA Results for Effect of Traditional/Nontraditional Status on Interaction with Faculty and Staff

Interaction With	DF	SS	MS	F	P
Faculty	1	.0001	.0001	0	0.98
Total	124	46.62			
Staff	1	.003	.003	.01	0.09
Total	123	60.08			

The next step in the analysis was to examine the effect by student type with interaction with peers as seen in Table 4.13. A one-way ANOVA was conducted that examined the effect of involvement with peers on traditional and nontraditional student types. The analysis revealed

that interaction among peers was significant for traditional students, F (1, 123) = 5.15, p = .025, but not for nontraditional students. Taken together, the results revealed that traditional students exhibited higher levels of interaction among their peers than nontraditional students. The last part of the table indicates the mean interaction with peers score for traditional students was 3.61, and the mean interaction with peers score for nontraditional students is 3.20. While this relationship was significant, note that the R-Square was approximately 0.04, which indicates that only 4% of the variation in interaction with peers was related to risk status.

Table 4.13

ANOVA Results for Effect of Traditional/Nontraditional Status on Interaction with Peers

Source	*DF*	SS	MS	F	*p*
NT Indicator	1	3.41	3.41	5.15	0.025*
Total	123	84.27			

Number of observations	R-Square	Root MSE	InterPeers Mean
124	0.04	0.81	3.28

NTIndicator	InterPeers LSMEAN	H0:LSMean1=LSMean2
		P-Value
Traditional	3.61	0.025*
NonTraditional	3.20	

*p < .05

In order to take account of the demographic characteristics in the analyses of involvement factors where they were shown to be significant in previously discussed analysis, two-way ANOVAs were used to analyze the simultaneous relationships of the risk levels and appropriate demographic characteristic with the involvement factor. This helped to ensure that any

significant relationships found between risk levels and involvement factors were due to actual relationships between the two, rather than a coincidental relationship between the risk levels and demographic characteristics.

Table 4.14

Two-way ANOVA Results for Effect of Traditional/Nontraditional Status on Academic Involvement, accounting for Gender

Source	*DF*	Sum of Squares	Mean Square	F Value	P-Value
Model	2	1.04	0.52	1.98	0.14
Error	120	31.48	0.26		
Corrected Total	122	32.52			

Number of observations	R-Square	Root MSE	AcaInvol Mean
124	0.03	0.51	3.29

Source	*DF*	Type III SS	Mean Square	F Value	P-Value
NTIndicator	1	0.10	0.10	0.4	0.53
Gender	1	1.02	1.02	3.92	0.05

For Table 4.14, a two-way ANOVA was conducted that examined the effect of traditional and nontraditional status on academic involvement while accounting for gender. There was no significant interaction between the effects of student status and academic involvement, F (2, 122) = 1.98, p = .0142. The results indicate that the significant relationships originally found between risk levels and gender may have been caused by a coincidental relationship between the risk status and gender.

Once the relationship between risk status and academic involvement accounting for gender was completed, the next step in the analysis compared the effect of risk status on extra-curricular activities while accounting for campus location. The results revealed a significant relationship between risk status and extracurricular activities while accounting for campus with a P- value of .0001. The results of this analysis are found in Table 4.15.

Table 4.15

Two-way ANOVA Results for Effect of Traditional/Nontraditional Status on Extracurricular Involvement, accounting for Campus.

Source	*DF*	Sum of Squares	Mean Square	F Value	P-Value
Model	4	16.52	4.13	6.72	<.0001*
Error	119	73.18	0.61		
Corrected Total	123	89.71			

Number of observations	R-Square	Root MSE	ExtInvol Mean
124	0.18	0.78	1.70

Source	*DF*	Type III SS	Mean Square	F Value	P-Value
NTIndicator	1	0.39	0.39	0.64	0.42
Campus	3	15.53	5.17	8.42	<.0001*

*p < .05

Based on the results of these tables, the only involvement factor that indicated significant differences on the traditional/nontraditional risk status was interaction with peers (Table 4.13; P-value = 0.025). The last part of the table indicates that the mean interaction with peers score for traditional students was 3.61, and the mean Interaction with peers score for nontraditional students was 3.20. While this relationship was found to be significant, it is important to note that

the R-Square was approximately 0.04, which means that only 4% of the variation with Interaction with Peers was related to risk status.

To further determine if more variation in involvement factor scores existed to the more specific definition of risk status, additional analysis was conducted. Tables 4.16 and Table 4.17 explored this possibility, again using one- and two-way ANOVAs. Once again, significant results are emphasized with an asterisk (*) and all effects were statistically significant at the .05 significance level.

Table 4.16

ANOVA Results for Effect of Risk Category on Interaction Factors

Factor	*DF*	Type III SS	Mean Square	F Value	P-Value
Interaction with Faculty	3	0.49	0.16	0.43	0.73
Interaction with Staff	3	1.32	0.44	0.91	0.43
Interaction with Peers[a]	3	4.37	1.45	2.19	0.09

[a] Age was initially included in this model, but in the presence of risk status was found to be an insignificant predictor and was removed from this analysis.

In Table 4.16, a one-way between subjects ANOVA was conducted to compare the effect of risk category (traditional and nontraditional student type) on the interaction of faculty, staff and peers. Results revealed that there was no significant effect for interaction with faculty, $F(3, 123) = 0.43$, $p > .05$; interaction with staff, $F(3, 123) = 0.91$, $p > .05$; and interaction with peers, $F(3, 123) = 2.19$, $p > .05$.

In Table 4.17, a two-way analysis of variance was performed to determine the effect of risk categories on academic involvement while accounting for gender and extracurricular activities while accounting for campus. Results to determine the effect of risk categories on academic involvement while accounting for gender revealed no effect associated with traditional

or nontraditional risk categories, $F(3, 122) = 0.2$, $p > .05$. Similar results were found when examining the effect of risk category on extracurricular involvement while accounting for campus, F ratio of $F(3, 123) = 1.47$, $p > .05$.

Table 4.17

Two-way ANOVA Results for Effect of Risk Category on Academic Involvement, accounting for Gender and Extracurricular Involvement, accounting for Campus

Source	*DF*	Type III SS	Mean Square	F Value	P-Value
RiskCategory	3	0.16	0.05	0.2	0.89
Gender/AcaInvol	1	1.05	1.05	3.96	0.04*
RiskCategory	3	2.66	0.88	1.47	0.22
Campus2/ExtInvol	3	17.11	5.70	9.41	<.0001*

*$p < .05$

According to Tables 4.16 to Tables 4.17, Risk Category (traditional and nontraditional student types) did not have a significant relationship with any of the involvement factor scores.

Types of Involvement for Nontraditional Students. Question 4 states: What types of involvement levels are found to be significant for nontraditional students? Although Table 4.5 provided the distribution scores for each of the involvement activities, additional analysis was needed to determine if any of these involvement activities were considered significant for nontraditional students. Therefore, a randomized block design was employed and analyzed using ANOVA.

Using each respondent as a block, each involvement factor was measured on each respondent, and analyzing it this way accounts for individual differences between respondents, and type of involvement factor as the independent variable predicting the involvement score. Results of this analysis are available in Table 4.18.

Table 4.18

Involvement Score Comparisons, Nontraditional Students

Source	*DF*	Sum of Squares	Mean Square	F - Value	P-Value
Model	101	333.06	3.29	9.72	<.0001*
Error	388	131.68	0.33		
Corrected Total	489	464.74			

Number of observations	R-Square	Root MSE	Involvement Score Mean
490 (5 per respondent)	0.71	0.58	2.65

Source	*DF*	Type III SS	Mean Square	F - Value	P-Value
Respondent	97	118.98	1.22	--	--
Involvement Factor	4	214.07	53.51	157.69	<.0001*

T Grouping	Involvement Score Mean	Types of Involvement Factors
A	3.29	Academic Involvement
A B	3.20	Interaction with Peers
B	3.05	Interaction with Faculty
C	2.08	Interaction with Staff
D	1.66	Extra-Curricular Involvement

*Means with the same letter are not significantly different

The results are highly significant, with type of involvement factor showing an F ratio of F(97, 4) = 0.582582, $p < 0.0001$. The last part of the table shows where the differences occur. For nontraditional graduates that responded to this survey, the highest involvement scores were found in areas of academic involvement (M = 3.29), interaction with peers (M = 3.20) and interaction with faculty (M = 3.05). The lowest levels of involvement for nontraditional graduates was found in Interaction with Staff (M = 2.08), and within Extracurricular Involvement (M = 1.66). Table 4.25 displays the results of the involvement score comparisons for the 98 nontraditional students identified in this study.

Summary

This chapter discussed the statistical analysis employed and the findings related to each of the four research questions that guided this study. The first research question sought to determine what the predominant risk factors were for this population of college graduates. Based upon participant responses, the distribution levels revealed that 79% of the participants were considered nontraditional students and that almost 50% were considered moderately nontraditional based upon exhibiting two to three risk factors. The most common risk factors for this population were part-time enrollment (73.20%) followed by financial independence (64.95%).

The second research question sought to determine what risk factors of nontraditional students were related to their levels of involvement. The distribution levels for each of the involvement levels were determined and examined with each of the risk status and demographic data using a variety of T-test's and ANOVA's. According to the findings, risk factors did not have a significant relationship with any of the involvement levels.

The third research question examined the differences in the involvement levels of nontraditional and traditional graduates in this study. Traditional students were shown to have significantly higher levels of interaction with peers than nontraditional students. This significance did not appear when risk status was divided up according to risk category, which may be an indicator that for Interaction with Peers, having even one risk factor associated with a student is similar to having more than one risk factor associated with that student.

The final research question explored the types of involvement levels that were found to be significant for nontraditional students. Using a randomized block design to measure each involvement factor on each respondent, ANOVA results revealed that the highest levels found to be significant for nontraditional students was academic involvement ($M = 3.29$), interaction with peers ($M = 3.20$), and interaction with faculty ($M = 3.05$).

CHAPTER 5

Conclusions and Recommendations

Using Alexander Astin's Student Involvement Theory as the conceptual framework, the purpose of this quantitative study was to examine the involvement factors that may contribute to the degree completion of nontraditional students attending a public community college in the South. This study was guided by the following research questions:

1. What are the predominant nontraditional risk factors of this student population?
2. What risk factors of nontraditional graduates are related to their levels of involvement?
3. What are the differences in involvement levels of nontraditional and traditional student graduates?
4. What types of involvement levels are found to be significant for nontraditional students?

This chapter reviews analyses employed to address these research questions. This chapter will include a review of the findings for each research question as well as conclusions, recommendations and a summary of the chapter.

Findings of the Study

The ultimate aim of this research study was to gain an understanding of the extent of the risk factors displayed by a group of community college graduates and to explore how various types of involvement may have influenced their ability to graduate. This section will include a discussion of the findings and conclusions related to each research question.

Conclusion 1: The predominate nontraditional risk factors. Based on their responses, approximately 79.03% of participants in this study were identified as nontraditional students. These findings suggest that the majority of students enrolled at this institution would be considered nontraditional students based upon exhibiting at least one of Horn's (1996) risk factors. This is not unusual as a 2002 NCES study found that approximately 73% of all undergraduates enrolled at colleges nationwide during 1999-2000 exhibited at least one of Horn's risk factors. The fact that the majority of students enrolled in college today exhibit at least one risk factor does call into question the need to re-examine our framework and understanding of what should be considered a traditional college student.

Once the nontraditional students were classified by their risk factors, the extent to which this population exhibited these risk factors was examined. Horn's (1996) classification ranks students as minimally nontraditional if they had only one risk factor, moderately nontraditional if they had two to three factors and highly nontraditional if they had four or more risk factors. In this study, these classifications were labeled as Risk Category 1 for those who were considered minimally nontraditional, a Risk Category 2 if they exhibited two to three risk factors and a Risk Category 3 was considered highly nontraditional if they exhibited four or more of risk factors. Almost half of the participants in this study (47.58%) were classified as moderately nontraditional since they exhibited two to three risk factors, approximately 21% exhibited no risk factors, and 12% were considered highly nontraditional since they exhibited four or more risk factors.

Although these findings indicate a much smaller percentage of highly nontraditional students than found in other studies, it is important to keep in mind that the participants in this study were all graduates. The majority of other studies that have focused on nontraditional

students have only examined currently enrolled students' percentages in relation to retention and not percentages of nontraditional graduates. According to Horn's (1996) research, the more risk factors exhibited by a student, the less likely they are to graduate. In a national study that examined nontraditional student persistence rates, NCES (2002) found that nontraditional students were more likely to leave four-year institutions without a degree. In fact, this study found that 50% of nontraditional students left their institution after three years compared to only 12% of traditional students (NCES, 2002, p. 17). Therefore, finding such a small percentage of community college graduates that are considered highly nontraditional is understandable but it is troublesome that a larger percentage of these students did not graduate.

After nontraditional students and their risk categories were identified, the next step was to determine what the predominate risk factors were associated with this population of nontraditional students. This was accomplished by placing participant responses to the risk questions into a frequency table. The most predominate risk factors for this population were being enrolled at least part-time (73.20%) during their enrollment at the institution (other than summer), being considered financially independent (63%) and delaying enrollment in college at least one year after graduating from high school (39%).

The fact that part-time enrollment was the predominate risk factor for participants in this study is not surprising on two fronts. First, the NCES (2002) study found that 54% of all students enrolled during 1999-2000 were enrolled part-time and predicted that this trend would continue to increase due to rising tuition costs and increases in the number of students working. Second, contrary to what other studies have found about the improved retention and graduation rates for students being enrolled full-time, institutional data suggest that students enrolled part-time at the participating institution have higher retention and graduation rates than full-time

students (Fact Book, 2009). Recognizing that greater numbers of students are enrolling part-time, additional attention is needed to examine their retention and graduation rates at other institutions. If other two-year institutions find that their students are more likely to graduate if they enroll part-time, college personnel may want to encourage more nontraditional students to enroll part-time.

Conclusion 2: Relationship of risk factors to involvement factors. The second question in this research project was addressed by examining the distribution levels of the risk factors and then running a variety of significance tests to determine the relationship of the risk factors to the involvement factors. First the distribution levels were examined for the entire population and separated out by traditional and nontraditional students, then each risk factor was examined, and finally the student demographics were explored. After the distribution levels for each of these areas were collected, a variety of statistical analyses were performed to determine whether the involvement scores were statistically significantly different for each of these groups.

For the student demographics test of significance, a *t-test* was used for age, race, gender, and whether their parents attended college since each of these demographics only had two levels of a demographic characteristic. For the fifth demographic characteristic known as campus location, there were three possible campus locations utilized in the research so a *one-way ANOVA* was employed. The P-value was then examined for each of these groups to determine if there were any significance between student demographics and involvement factors.

There were three student demographic characteristics that were found to be potentially associated with involvement factors. These included gender, which had a significant relationship with academic involvement (P-value = 0.061; females have somewhat higher scores here than males), and age, which had a significant relationship with interaction with peers (P-value =

0.010; students under the age of twenty-four have somewhat higher scores here than those older than twenty-five); and campus was highly significantly associated with extracurricular involvement (P-value < 0.0001), so that the main campus was shown to have a higher level of involvement in this area.

Gender and Academic Involvement. The findings in this study are consistent with other studies that have examined the relationship between academic involvement and gender. In research conducted by Hagedorn et al. (2000), females were found to be more involved in academic related activities than males. Hossler, Kuh, and Olsen (2001) found at a study at a large state university that at-risk students were more likely to use academic support services than students than traditional students. Smith (2008) examined the integration of 573 community college students (80% were considered nontraditional) and found that being female was a strong predictor of institutional integration.

The fact that women are the new majority on college campuses may help explain in part their comfort level with activities associated with academic involvement such as study groups, group projects, and seeking assistance from an advisor (NCES, 2011). In a longitudinal of male and female college students, Magolda (1992) noted the developmental change that occurred between men and women in how students reasoned and in what they valued from the learning experience. Women were more inclined towards an interpersonal learning style whereas men were associated with an impersonal style. In other words, women preferred a relationship style of learning and therefore were more likely to perform better in an academic environment that promotes opportunities associated with a relationship style.

Age and Interaction with Peers. In addition to the differences found in the learning styles of men and women, scholars have identified differences among traditional-aged and

nontraditional-aged students. In his theory of Power-Load-Margin, McClusky (1974) explained that key factors impacting the lives of nontraditional-aged individuals are the load (self and social demands) they carry in living, and the power (resources, abilities, and allies) that an adult has to carry the load. According to McClusky (1974), a crucial element for meeting any learning demands was the ability for a nontraditional-aged student to maintain this ratio between load and power. In relation to Astin's (1996) student involvement theory, an increase in the load or a shift in the power has a direct impact on the amount of energy a student has to devote to the college experience and therefore may negatively impact their ability to remain enrolled.

Since nontraditional-aged students are often confronted with this balance of load and power that competes with the time and energy that they are able to devote to the learning experience, the research surrounding peer involvement has continued to yield mixed results. A number of studies have found similar results to this study in that nontraditional-aged students were less likely to interact with peers than their traditionally-aged peers (Broschard, 2005; Lundberg, 2004; & Whitt, et al., 1999). However, other studies have found that nontraditional-aged students report being more involved with their peers than traditional students (Smith, 2008; Graham & Gisi, 2000). One possible explanation why the differences between these studies exist could be the environmental and cultural differences that differ between institutions. After all, one of Astin's (1996) main premises is that institutions have the ability to directly impact the retention and graduation rates based upon the environment they create for their students.

Campus and Extracurricular Involvement. Numerous studies have found that extracurricular activities can have a positive impact on student development and retention (Astin, 1996, 1999; Graham & Gisi, 2000; House, 2000). Research conducted by Graham and Gisi (2000) discovered that although adult students dedicate only 1 to 5 hours a week on

extracurricular activities, this type of involvement still had a positive effect on student development.

The data from this study indicated that extracurricular involvement had less of an impact for both traditional and nontraditional students than other types of involvement. However, when analysis was conducted to explore extracurricular involvement by campus, Campus 2 was found to display higher levels of extracurricular involvement than the other locations. The fact that the Campus 2 was the main campus for the institution is important to note. In a study that examined the transfer-readiness of community college students, Johnson (2006) noted that community colleges presented varying degrees of extracurricular opportunities for students. As a multi-campus institution, the fact that the main campus demonstrated higher levels of extracurricular activity was understandable since the main campus had greater resources and provided more opportunities for extracurricular activities than the other locations.

Conclusion 3: Differences in involvement levels. The only involvement factor that demonstrated significant differences based on at risk status (traditional versus nontraditional) was interaction with peers with a P-value of 0.025. The interaction with peers score for traditional students was 3.61, and the mean interaction with peers score for nontraditional students was 3.20. While this relationship is significant, note that the R-Square was approximately .04, and this indicates that only 4% of the variation in interaction with peers was related to risk status.

In previous research conducted on the interaction with peers, Astin (1993) noted that peers were "the single most potent source of influence" on student learning and persistence (p.398). However, his research primarily focused on traditional students attending residential campuses and more recent research continues to demonstrate varying results. Lundberg (2004)

examined students that worked part-time compared to those that did not work and found that students who worked more 20 hours per week were less likely to engage their peers. Other scholars have found differences among gender where females tend to exhibit higher levels and greater gains through peer involvement than males regardless of their traditional or nontraditional status (Spitzer, 2000; Ullah & Wilson 2007). Broschard (2005) found that traditional students were more engaged with their peers than nontraditional students but in contrast Smith (2008) found that nontraditional students exhibited higher levels of peer involvement than traditional students.

Due to the limited and conflicting research on traditional and nontraditional students in relation to peer involvement, being able to ascertain why these differences exist in literature is difficult. Regardless of the differences found in literature on this topic, interaction with peers remains a leading involvement factor that continues to contribute to academic success of both traditional and nontraditional students.

Conclusion 4: Significant levels of involvement. In order to determine if there were any significant differences among the types of involvement levels displayed by nontraditional graduates in this study, a randomized block design was employed and analyzed with ANOVA. Findings indicated that nontraditional students who complete their degrees have significantly higher levels of academic involvement and interaction with peers than they have other types of involvement but the differences between these two variables is not significant. Interaction with faculty was found to be statistically similar to interaction with peers but still different from academic involvement. The lowest scores were found among interaction with staff and extracurricular involvement.

Academic Involvement for Nontraditional Students. This study and others continue to demonstrate that there is a significant relationship between academic involvement and the academic success of nontraditional students. In his study that examined the transfer readiness of large group of community college students, Johnson (2006) found that transfer ready students reported spending the majority of the involvement on academic related activities. Kasworm (2003) found that the classroom and other academic related activities appeared to be the epicenter of learning for nontraditional students. Broschard (2005) found that nontraditional students rated their academic involvement as the most influential involvement factor impacting their student development and learning.

Interaction with Peers for Nontraditional Students. Perhaps one of the most interesting findings with this study was that participants in this study reported similar levels of interaction with peers as with academic involvement. As noted previously, the limited research on nontraditional students and the influence of peers is mixed. There are some scholars who have found that peer involvement plays a significant role in the student development and retention of nontraditional students (Graham & Gisi, 2000; Kasworm, 2003; Johnson, 2006; Smith, 2008). Other scholars have found the influence of peers to be among the least significant of the involvement factors (Broschard, 2005; Lundberg, 2004; & Whitt, et al., 1999). No doubt the environment created by institutions and the opportunities they provide in and out of the class-room for interaction with student peers plays a major role in the variety of these findings. This may help to explain the differences found regarding this research topic at various institutions.

Implications for Theory

In this study, nontraditional students were defined by Horn's (1996) risk factors that have been found to negatively impact college completion rates. These risk factors have been used to

identify nontraditional students in national research for the last sixteen years and this research has noted gradual increases in the number of students exhibiting one or more of these risk factors. According to national statistics, the percentage of students twenty-four and older has increased from 22% in 1975 to 32% in 2010 (NCES, 2011) and students that exhibit at least one risk factor now account for approximately 70% of all college enrollments nationwide (NCES, 2008). If the majority of students enrolled in colleges today exhibit at least one risk factor, are they not the new traditional student? This startling statistic has major implications on theory as scholars must now reevaluate their understanding of what it means to be a traditional student in today's college environment and how this change impacts previous retention theories.

Since there has been such a dramatic shift in the type of students enrolling in college, scholars must consider the implications this change in student population has on retention research. Many of the retention theories were originally developed at a time when the student enrollment consisted of a very homogeneous population and researchers must continue to test these theories while accounting for the continued shifts in student populations. This is especially true of long standing theories that were originally developed at a time when the student population was of similar age, gender, and ethnicity.

Alexander Astin's (1975) student involvement theory is one of those theories that need to be re-examined since the research supporting this theory was based upon a very different student population. Astin (1984) defined student involvement as "the amount of physical and psychological energy that the student devotes to the academic experience" (p. 134). Based upon additional research conducted by Astin and other scholars, Astin (1993) further refined his theory to include the I-E-O model. The "I" stood for inputs, or the background characteristics that a student had at the time of enrollment. The "E" was for environment and included the various

programs, services, policies, college personnel, peers, and educational experiences students would encounter on a college campus. The "O" referred to the student outcomes that were intended from participating in an educational experience.

The fact that Astin (1993) adapted his theory to allow for considerable flexibility in selecting the input variables allowed scholars to select variables that were more relative to an ever changing student population. This change allowed scholars to adapt their inputs to accommodate changes in student background characteristics. Despite this change in Astin's (1993) theoretical framework, much of the research surrounding the student involvement theory has been conducted on traditional students attending four-year institutions and two-year private institutions. As mentioned previously, there has been a dramatic shift in what is considered the traditional or typical college student today and Astin's (1993) I-E-O model needs additional research at two-year public institutions.

In regard to the research conducted at two-year public institutions, researchers must take into account the changes in student background characteristics and current research before determining the inputs in future research. This study expanded the work of Astin (1993) by selecting inputs associated with today's college student and found that Astin's (1993) student involvement theory still holds relevance today in identifying environmental factors that continue to influence the graduation rates of students despite the differences found in today's student population.

Implications for Future Research and Practice

The findings of these quantitative analyses have implications for future research and practice. This study emphasized the dramatic shift in today's student population and the fact that the majority of students enrolling in a community college are already identified as having one or

more risk factors impacting their ability to earn a college degree. Approximately 79% of the participants in this study exhibited at least one risk factor and over half exhibited two or more risk factors. This supports findings of the NCES (2002) and the U.S. Department of Education (2009) where studies have shown that the majority of enrollment at community colleges consists of nontraditional students who exhibit one or more risk factors impacting their ability to graduate. However, these studies have primarily used the risk factors as a way to identify at-risk students and there remains a dearth of research examining these risk factors in conjunction with retention studies at community colleges. Further, the limited research that has been conducted at public two-year institutions has focused on currently enrolled students and why students leave college and not on community college graduates and factors that may have influenced their graduation rates. This study draws attention to the need expand the research surrounding community college graduates.

Part-time enrollment was the leading risk factor for the participants in this study at 73.20%. This is an intriguing finding since much of the research surrounding part-time enrollment has found students enrolled part-time graduate at a significantly lower rate than full-time students (Berkner, He, & Cataldi 2002; O'Toole, Stratton, & Wetzel 2003). However, the majority of these studies have been conducted at four-year institutions and additional research is needed to determine if part-time enrollment contributes positively to the graduation rates of community colleges. In one of the few studies that examined the transfer rates of community college students, Johnson (2006) found that students who were enrolled part-time were more likely to be prepared to transfer to another college than full-time students. This study and Johnson's (2006) findings reveal the need to conduct further research on the influence of part-

time enrollment at two-year institutions and those results may change the current practice of encouraging the majority of new freshmen to enroll as full-time students.

Academic involvement was found to be a significant influence on the community college graduates in this study. These findings support what other studies found in relation to academic involvement (Astin, 1993, 1996, 1999; Broschard, 2005; & Johnson, 2006). However, additional research is needed to understand not only what academic activities have the most influence on graduation rates but also why certain activities are found to be most beneficial to this student population. This is especially true with the continued shift in student demographics and other changes that continue to occur within the academic environment. For example, the learning environment continues to be transformed by the use of new technologies and many courses are now taught in a hybrid format and/or virtual format further challenging the ability to incorporate traditional academic involvement opportunities and strategies.

In addition to significance of academic involvement, additional research is needed to understand the influence of peer to peer involvement on graduation rates of community college students since this was found to be a significant influence for both traditional and nontraditional students. However, traditional students in this study exhibited significantly higher levels of peer involvement than nontraditional students. A number of studies have confirmed that traditional students tend to be more involved with their peers and demonstrate higher gains in student development (Broschard, 2005; Lundberg, 2004; & Whitt, et al., 1999). However, other studies have found that peer interaction can be detrimental to traditional student's academic achievement (Spitzer, 2000) and transfer readiness (Johnson, 2006). Since the results of research surrounding peer involvement remains mixed, additional research is needed to understand these differences and to what extent the college environment influences peer involvement. In addition, college

faculty and administrators would benefit from knowing what types of peer involvement are most influential for community college students and how to best implement these types of peer interaction within their college environment.

Another significant finding that has implications for future research and practice was the finding that demonstrated that women had significantly higher levels of academic involvement than males. This is not too surprising considering that females accounted for almost 78% of the participants in this study and are enrolling and earning degrees in college at rates higher than men (NCES, 2011). Further, other studies that have examined student involvement factors have found higher levels of academic involvement in females compared to their male counterparts (Broschard, 2005; Hagedorn et al. 2000; Smith, 2008). Understanding why women continue to demonstrate significantly levels of academic involvement than then men bears further investigation.

One possibility to consider is that academic involvement is often associated with activities that are more relationship based. This may help explain to some extent why females have consistently been found to participate more significantly in these types of activities than their male counterparts. According to research on a group of college men and women, Magolda (1992) found that women were more inclined towards an interpersonal learning style whereas men preferred an impersonal style. The obvious concern is that if academic involvement is a leading factor that contributes to college success, then practitioners must thoroughly examine their institutional practices to include strategies to help increase the participation of males in academic related activities.

A final implication for research and practice was the unintentional discovery that one campus was found to be significantly associated with extracurricular activities. As a multi-

campus institution, the fact that the main campus demonstrated higher levels of extracurricular activity was understandable since the main campus had greater resources and provided more opportunities for extracurricular activities than the other locations. In another study that examined the transfer-readiness of community college students enrolled in a multi-campus institution, Johnson (2006) noted that community colleges presented varying degrees of extracurricular opportunities for students. During a time of limited or reduced budget allocations, community colleges remain further challenged to provide the necessary educational resources across multiple campus locations. Therefore, additional research is needed to understand the impact of multi-campus institutions and the differences that may exist between locations and the role these differences play on college persistence and graduation rates.

Summary

Although there has been extensive research surrounding the impact of student involvement on the retention and success rates of college students for over forty years, this study emphasizes the need for additional research at two-year institutions and their large nontraditional student populations. The findings and conclusions of this study revealed that the majority of the graduates were found to be moderately nontraditional due to exhibiting two or three risk factors. This finding was supported in national studies and emphasized the need for scholars to reconsider their current definition of the traditional student now that the majority of today's students exhibit at least one risk factor (NCES, 2008).

The most frequent risk factors exhibited by this population were part-time enrollment and being considered financially independent. Whether the success of part-time enrolled students is a product of this institution or signifies a change in the success rate of part-time students bears further research and may have a direct impact on current practices that encourage new freshmen

to enroll as full-time students. The lack of participants who were considered highly nontraditional is of concern since this population is largely found at two-year institutions (CCSSE, 2006). The fact that so many highly nontraditional enroll at two-year institutions may explain why community college graduation rates remain among the lowest in the country.

Academic involvement and interaction with peers had the most significant levels of involvement for this population of nontraditional graduates. Therefore, community colleges should continue to develop strategies to increase academic involvement opportunities as well as interaction with peers. As federal and state governments continue to call for increased retention and graduation rates at colleges nationwide, two-year institutions must continue to examine the various risk factors exhibited by their students and how their institution's environment can be shaped to positively impact the completion rates of community college students.

References

Adelman, C. (2005). *Moving into town and moving on: The community college in the lives of traditional-age students*. Washington, DC: U.S. Department of Education.

Amelink, C. (2005). *Predicting academic success among first-year, first generation students*. (Ph.D dissertation, Virginia Polytechnic Institute and State University, 2005). Blacksburg, Virginia.

American Association of Community Colleges. (2007). *American association of community colleges facts 2007.*Washington, DC: Author.

American Association of Community Colleges. (2008). *Community college stats*. Washington, DC: Author.

American Association of Community Colleges. (2009). *2009 fact sheet*. Washington, DC: Author.

Apling, R. (1991). *Nontraditional students attending postsecondary institutions.* CRS Report for Congress, Washington, DC: Library of Congress.

Astin, A. (1975). *Preventing students from dropping out.* San Francisco, CA: Jossey-Bass.

Astin, A. (1984). Student involvement: a developmental theory for higher education. *Journal of College Student Personnel, 25*, 297-308.

Astin, A. (1991). *Assessment for excellence: The philosophy and practice of assessment and evaluation in higher education*. Santa Barbara, CA: Oryx Press.

Astin, A. (1993). *What matters in college: Four critical years revisited*. San Francisco, CA: Jossey-Bass.

Astin, A. (1996). Involvement in learning revisited: Lessons we have learned. *Journal of College Student Development, 37,* 123-134.

Astin, A. (1999). Student involvement: A development theory for higher education. *Journal of College Student Development, 40,* 518-532.

Bailey, T., Jenkins, D. & Leinbach, T. (2005). Graduation rates, student goals and measuring community college effectiveness. *Community College Research Center, 23,* 1-4.

Baumann, M. (2009). *The military mobilization of undergraduates.* (Ph.D dissertation, The Pennsylvania State University, 2009). University Park, Pennsylvania.

Bean, J. (1980). Dropouts and turnover: The synthesis and test of a casual model of student attrition. *Journal of Research in Higher Education, 12*(2), 155-187.

Bean, J. (1981). Student attrition, intentions, and confidence: Interaction effects in a path model. *Research in Higher Education, 17*(4), 291-320.

Bean, J. & Metzner, B. (1985). A conceptual model of nontraditional undergraduate student attrition. *Review of Educational Research, 55*(4), 485–540.

Bean, J. & Metzner, B. (1996). A conceptual model of nontraditional undergraduate student attrition. In F. Stage, G. Anaya, J. Bean, D. Hossler, & G. Kuh, (Vol. Eds.) *ASHE reader series: College students: The evolving nature of research* (pp.54-65). Needham Heights, MA: Simon & Schuster Custom Publishing.

Berkner, L., He, S. & Cataldi, E. (2002). *Descriptive summary of 1995-96 beginning postsecondary students. Six years later.* (NCES 2003-151). U.S. Department of Education. Washington, DC: National Center for Education Statistics.

Bishop-Clark, C., & Lynch, J. (1992). The mixed-aged college classroom. *College Teaching, 40*, 114-117.

Boudett, K., Richard, J., & Willet, J. (2000). "Second chance" strategies for women who drop out of school. *Monthly Labor Review, 123*(12), 19-31.

Broschard, D. (2005). Quality of student involvement and college contribution to the development of traditional and nontraditional undergraduate students. (*ETD Collection, Florida International University, 2005). Dissertation Abstract International*, *66*(3-A), 3169451.

Bureau of Labor Statistics. (2003). *Current population survey, 2005, and labor force, employment, and unemployment from the current population survey*. In: BLS handbook of methods. Washington, DC: US Department of Labor, Bureau of Labor Statistics.

Bureau of Labor Statistics. (2009, August 7). *The employment situation – July 2009.* News release. Washington, DC: US Department of Labor, Bureau of Labor Statistics.

Bureau of Labor Statistics. (2008, September). *The employment cost index-September 2008.* News release. Washington, DC: US Department of Labor, Bureau of Labor Statistics.

Cabrera, A., La Nasa, S. & Burkum, K. (June, 2001). *Pathways to a four-year degree: Lessons from a generation.* AIR forum 2001. Long Beach, California.

Carlan, P. (2001). Adult students and community college beginnings: Examining the efficacy of performance stereotypes on a university campus. *College Student Journal*, *35*(2) 169-181.

Carey, K & Aldeman, C. (2008). *Ready to assemble: A model state higher education accountability system.* Education Sector. Washington, D.C.

Chen, X. (2005). *First generation students in postsecondary education: A look at their college transcripts* (NCES 2005-171). U.S. Department of Education. Washington, DC: U.S. Government Printing Office.

Choy, S. (2001). *Students whose parents did not go to college: Postsecondary access, persistence and attainment.* (NCES 2001-126). U.S. Department of Education. Washington, DC: National Center for Education Statistics.

Choy, S. (2002). Findings from the condition of education. Washington, DC: U.S. Department of Education, National Center for Education Statistics, NCES 2002-12. Retrieved from http://nces.ed.gov/pubs2002/2002012.pdf.

Clark, M. & Cafferella, R. (1999). An update on adult learning theory: New ways of thinking about the life course. Francisco, CA: Jossey-Bass.

Cohen, A. (2003). *The Community Colleges and the Path to the Baccalaureate.* Center for Studies in Higher Education. ERIC Document 476338. Retrieved from http://www.eric.ed.gov/PDFS/ED476338.pdf.

Cohen, A. & Brawer, F. (2003). *The American community college* (4th ed). San Francisco, CA: Jossey-Bass.

Community College Survey of Student Engagement (2004). *Engagement by design: 2004 findings.* Austin, TX: Author.

Community College Survey of Student Engagement (2005). *Engaging students, challenging the odds: 2005 findings.* Austin, TX: Author.

Community College Survey of Student Engagement (2006). *Act on fact: Using data to improve student success*. Austin, TX: Author.

Community College Survey of Student Engagement (2008). *Essential elements of engagement: High expectations and high support.* Austin, TX: Author.

Cooley, R. (2000). *The American community college turns 100: A look at its students, programs, and prospects*. Princeton, NJ: Educational Testing Service.

Cooper, D., Healy, M., & Simpson, J. (1994). Student development through involvement: Specific changes over time. *Journal of College Student Development, 35*, 98-102.

Dayton, B., Gonzalez-Vasquez, N., Martinez, C., & Plum, C. (2004). Hispanic-serving institutions through the eyes of students and administrators. In *Addressing the Unique Needs of Latino American Students*, *New Directions for Student Services,* (105), edited by A. Ortiz, 29-39.

Durkheim, E. (1953). *Sociology and philosophy.* New York, NY: The Free Press.

Durkheim, E. (1954). *The elementary forms or religious life*. New York, NY: The Free Press.

Engle, J. & Lynch, M. (2009). *Charting a necessary path: The baseline report of public higher education systems in the access to success initiative*. The Education Trust. ERIC Document 507873. Retrieved from http://www.eric.ed.gov/PDFS/ED507873.pdf.

Fact Book. (2006). *Georgia highlands college fact book.* Rome, GA: Georgia Highlands College.

Fact Book. (2009). *Georgia highlands college fact book.* Rome, GA: Georgia Highlands College.

Fischer, M. (2007). Settling into campus life: Differences by race/ethnicity in college involvement and outcomes. *The Journal of Higher Education, 78*(2), 125-156.

Foubert, J. & Grainger, L. (2006). Effects of involvement in clubs and organizations on the psychosocial development of first-year and senior college students. *NASPA Journal, 43*, 1-17.

Fries-Britt, S. & Turner, B. (2002). Uneven stories: Successful black collegians at a black and a white campus. *The Review of Higher Education, 25*(3): 315-330.

Gilligan, C. (1982). *In a different voice.* Cambridge, MA: Harvard University Press.

Graham, S. & Gisi, S. (2000). Adult undergraduate students: What role does college involvement play. *NASPA Journal, 38*, 99-121.

Gravetter, F. & Wallnau, L. (2007). *Statics for the behavioral sciences*. Belmont, CA: Thomson & Wadsworth.

Hagedorn, L., Maxwell, W., Rodrigues, P., Hocevar, D. & Fillpot, J. (2000). Peer and student-faculty relations in community colleges. *Community College Journal of Research and Practice, 24*(7), 587-598.

Hagedorn, L., Moon, H., Cypers, S., Maxwell, W. & Lester, J. (2004). *Transfer between community colleges and four-year colleges*: *The all-American game*. Los Angeles, CA: University of Southern California.

Headden, S. (2009, Fall). Adult ed grows up. *Lumina Foundation Focus*, 3-21. *Nontraditional undergraduates, trends in enrollment from 1986 to 1992 and persistence and attainment among 1989-90 beginning postsecondary students* (NCES 97-578). United States Department of Education, National Center for Education Statistics, Washington, D.C: U.S. Government Printing Office.

Hinton, P. (2004). *Statistics explained*. New York, NY: Theatre Arts Books.

Horn, L. (1996). *Nontraditional undergraduates, trends in enrollment from 1986 to 1992 and persistence and attainment among 1989-90 beginning postsecondary students* (NCES 97-578). United States Department of Education, National Center for Education Statistics, Washington, D.C: U.S. Government Printing Office.

Hossler, D., Kuh, G. & Olsen, D. (2001). Finding fruit on the vines: Using higher educational research and institutional research to guide institutional policies and strategies. Part II. *Research in Higher Education, 42*(2): 223-235.

House, J. (2000). The effect of student involvement on the development of academic self-concept. *Journal of Social Psychology, 140,* 261-264.

Howell, C. (2001). *Facilitating responsibility for learning in adult community college students*. ERIC Clearinghouse for Community Colleges. (ERIC Document Reproduction No. ED 451 841).

H.R. 4872 (2010). Health Care and Education Reconciliation Act of 2010.

Johnson, S. (2006). *Crossing the bridge to successful transfer: The role of student involvement.* (Ed.D. dissertation, University of California, 2006). *Dissertations Abstract International*, 68(4-A), 3257201.

Joint Task Force on Student Learning (1998). *Powerful partnerships: A shared responsibility for learning*. Washington, DC: American Association for Higher Education, American College Personnel Association, National Association for Student Personnel Administrators.

Josselson, R. (1987). Finding herself: Pathways to identity formation in college women. *Journal of Youth and Adolescence*, *2*(1), 3-51.

Kasworm, C., Polson, C. & Fishback, S. (2002). *Responding to adult learners in higher education*. Malabar, FL: Krieger Publishing Company.

Kasworm, C. (2003). Adult meaning making in the undergraduate classroom. *Adult Education, 53*, 81-98.

Katsinas, S., Palmer, J. & Tollefson, T. (2004). Funding and Access Issues in Public Higher Education: A Community College Perspective. A survey of the members of the National Council of State Directors of Community Colleges. Retrieved October 6, 2009, from http://www.insidehighered.com/news/2009/09/24/survey.

Kelly, L. (1996, May 5-8). *Implementing Astin's I-E-O model in the study of student retention: A multivariate time dependent approach*. Paper presented at the 36th Annual Form of the Association for Institutional Research, Albuquerque, NM. (ERIC Document Reproduction Service No. ED 397 732).

King, J. (2002). *Crucial choices: How students' financial decisions affect their academic success*. Washington, DC: American Council on Education.

Kirby, P., Biever, J., Martinez, I. & Gomez, J. (2004). Adults returning to school: The impact on family and work. *Journal of Psychology*, *138*(1), 65-76.

Kuh, G. (2003). What we're learning about student engagement from NSSE: Benchmarks for effective educational practices. *Change, 35*(2): 24-32.

Kuh, G. (2004). The contributions of the research university to assessment and innovation in undergraduate education. In *the scholarship of teaching and learning in higher education: The contributions of research universities*, edited by W. Becker and M. Andrews, 81-98. Bloomington, IN: Indiana University Press.

Kuh, G., Gonyea, R. & Williams, J. (2005). What students expect from college and what they get. In *Promoting reasonable expectations: Aligning student and institutional thinking about the college experience*, edited by T. Miller, B. Bender, J. Schuh and Associates, 34-64. San Francisco, CA: Jossey-Bass/National Association of Student Personnel Administrators.

Kuh, G., Kinzie, J., Buckley, J., Bridges, B. & Hayek, J. (2006, June). *What matters to student success: A review of the literature.* National Postsecondary Education Cooperative (NPEC) Commissioned Paper.

Lundberg, C. (2004). Working and learning: The role of involvement for employed students. *NASPA Journal, 41,* 201-215.

Magolda, B. (1992). *Knowing and reasoning in college*. San Francisco, CA: Jossey-Bass.

McClenney, K. (2002). *Engaging community colleges: A first look.* Austin, TX: Community College Survey of Student Engagement.

McClenney, K. (2011). *A matter of degrees: Promising practices for community college student success*. Austin, TX: Community College Survey of Student Engagement.

McClusky, H. (1974). Education for aging: The scope of the field and perspectives for the future. In S. Grabowski & W. Mason (Eds.), *Learning for aging* (pp. 324-355). Washington, DC: Adult Education Association of the USA.

Metzner, B. & Bean, J. (1987). The estimation of a conceptual model of nontraditional undergraduate student attrition. *Research in Higher Education, 27*, 15-38.

Miller, M., Pope, M. & Steinmann, T. (2005). A Profile of contemporary community college student involvement, technology use, and reliance on selected college life skills. *College Student Journal*, *39*(3), 596.

Muraskin, L. & Wilner, A. (2004). *What we know about institutional influences on retention*. Washington, DC: JBL Associates.

Muraskin, L., Lee, J., Wilner, A. & Swail, W.S. (2004). *Raising the graduation rates of low-income college students*. Washington, DC: The Pell Institute for the Study of Opportunity in Higher Education.

National Center for Education Statistics (1999). *Teacher quality: A report on the preparation and qualifications of public school teachers. (No.* NCES 1999–080). Washington, DC: U.S. Department of Education.

National Center for Education Statistics (2002). *The condition of education 2002.* (No. NCES 2002–025). Washington, DC: U.S. Department of Education.

National Center for Education Statistics (2005). *Short-term enrollment in postsecondary education: Student background and institutional differences in reasons for early departure, 1996-1998.* Washington, DC: U.S. Department of Education.

National Center for Education Statistics (2006). *Higher Education General Information Survey (HEGIS), Fall enrollment in institutions of higher education surveys, 1970 through 1985; 1986-87 through 2005-06 integrated postsecondary education data system, "Fall Enrollment Survey" (IPEDS-EF:86-99), and Spring 2001 through Spring 2006; and Projections of Education Statistics to 2016.* Washington, DC: U.S. Department of Education.

National Center for Education Statistics (2008). *Community colleges: Special supplement to the 2008 condition of education.* Washington, DC: U.S. Department of Education, 2008.

National Center for Education Statistics (2009). *Issues tables: A profile of military service members and veterans enrolled in postsecondary education in 2007-2008*. NCES 2009-182. Washington, DC: U.S. Department of Education.

National Center for Education Statistics (2011). *The condition of education 2011*. NCES 2011-033. Washington, DC: U.S. Department of Education, 2011.

National Center for Public Policy and Higher Education (2006). *Measuring up 2006: The national report card on higher education.* San Jose, CA: Author.

National Survey of Student Engagement (2005). *NSSE annual report: Exploring different dimensions of student engagement.* Bloomington, IN: Author.

Nora, A. (1990). Campus-based aid programs as determinates of retention among hispanic community college students. *Journal of Higher Education, 61* (3), 312-327.

Nora, A., Attinasi, L., Jr. & Matonak, A. (1990). Testing qualitative indicators of precollege factors in Tinto's attrition model: A community college student population. *Review of Higher Education, 13*, 337-356.

Nora, A., Barlow, L. & Crisp, G. (2005). Student persistence and degree attainment beyond the first year in college. In A. Seidman (Ed.), *College student retention: Formula for success* (pp. 129–153). Westport, CT: Praeger.

Obama, B. (2009a, February 24). Remarks of President Barack Obama – As Prepared for Delivery Address to Joint Session of Congress. Washington, DC: Office of the Press Secretary.

Obama, B. (2009b, July 14). Remarks by the President on the American Graduation Initiative at Macomb Community College, Warren Michigan. Washington, DC: Office of the Press Secretary.

Organisation for Economic Co-operation and Development. (2007). *Education at a Glance 2007.* Paris, France.

Orozco, V. & Cauthen, N. (2009). *Work less, study more & succeed: How financial supports can improve postsecondary success*. New York, NY: Demos.

O'Toole, D., Stratton, L. & Wetzel, J. (2003). A Longitudinal Analysis of the Frequency of Part-Time Enrollment and the Persistence of Students Who Enrolled Part Time. *Research in Higher Education, 44*(5): 519–537.

Pascarella, E. (1986). *Long-term persistence of two-year college students*. Paper presented at the annual meeting of the Association for the Study of Higher Education, San Antonio, TX.

Pascarella, E. (2001). Cognitive growth in college: Surprising and reassuring findings. *Change, 33*(6): 20-27.

Pascarella, E. & Terenzini, P. (1979). Interaction effects in Spady and Tinto's conceptual models of college attrition. *Sociology of Education*, *52*(4), 197-210.

Pascarella, E. & Terenzini, P. (1980). Predicting freshman persistence and voluntary dropout decisions from a theoretical model. *Journal of Higher Education, 51*(1), 60-75.

Pascarella, E. & Terenzini, P. (1998). *How college affects students: Findings and insights from twenty years of research.* San Francisco, CA: Jossey-Bass.

Pascarella, E. & Terenzini, P. (2005). *How college affects students: A third decade of research.* San Francisco, CA: Jossey-Bass.

Pusser, B., Breneman, D., Gansneder, B., Kohl, K., Levin, J., Milam, J. & Turner, S. (2007). *Returning to learning: adults' success in college is key to America's future*. Indianapolis, IN: Lumina Foundation for Education.

Rendón, L. (1994, August). *Beyond involvement: Creating validating academic and social communities in the community college*. University Park, PA: National Center on Postsecondary Teaching, Learning, and Assessment. (ERIC Document Reproduction Service No. ED374728).

Rendón, L. (2000). Fulfilling the promise of access and opportunity: Collaborative community colleges for the 21st century. *New expeditions: Charting the second century of community colleges*, (Issues Paper No. 3). Washington, D.C.: American Association of Community Colleges. (Eric Document Reproduction Service No. ED440670).

Rendón, L. & Nora, A. (1994). Improving opportunities for minorities to transfer. In M. Justiz (Ed.), *Minorities in Higher Education*, 120-138. Washington, DC: Oryx/American Council on Education.

Rumann, C. (2010). *Student veterans returning to the community college: Understanding their transitions.* (Ph.D. dissertation, Iowa State University, 2010). Ames, Iowa.

Schell, B., Unsworth, C. & Schell, J. (2008). Theory and practice: New directions for research in professional reasoning. In B. Schell and J. Schell (Eds.), Clinical and professional reasoning in occupational therapy (pp. 401- 431). Philadelphia, PA: Lippincott Williams & Wilkins.

Schmidt, L. (2007, October). *Integrating development education and acculturation skills: Positive learning for underrepresented students*. Poster session presented at the annual meeting of the National Council on Student Development. Savannah, GA.

Shaw, K. (1999). Defining the self: Constructions of identify in community college students. In Shaw, K., Rhoads, R. & Valadex, J. (Eds), *Community colleges as cultural texts: Qualitative explorations of organizational and student culture* (1-13). Albany, NY: State University of New York Press.

Shuttleworth, M. (2009). *How to write a research paper: An introduction to academic writing.* Bergen: Oskar Blakstad.

Snyder, T., Dillow, S. & Hoffman, C. (2007). *Digest of Education Statistics*. Washington, DC: U.S. Department of Education National Center for Education Statistics. Retrieved March 5, 2009, from http://nces.ed.gov/programs/digest/d07/ch_3.asp.

Spady, W. (1970). Dropouts from higher education: An interdisciplinary review and synthesis. *Interchange, 1*, 64-85.

Spellings, M. (2006). *A test of leadership: Charting the future of U.S. higher education (pp. ii-55).* Washington, DC: U.S. Department of Education.

Spitzer, T. (2000). Predictors of college success: A comparison of traditional and nontraditional age students. *NASPA Journal, 38*, 82-98.

Strong American Schools. (2008). *Diploma to Nowhere*. Washington, DC: Author.

Stringer, E. (2007). No solider left behind: Veterans seek college education. *Association of College Unions International*. Retrieved May 15, 2011 from http://www.acui.org/publications/bulletin/article.aspx?issue=452&id=3494.

Swail, W. (2002, October). *Closing the gap: Progress toward accessibility.* A presentation at the Coalition of Urban and Metropolitan Universities, Vancouver, BC.

Swail, W., Redd, K. & Perna, L. (2003). *Retaining minority students in higher education: A framework for success.* ASHE-ERIC Higher Education Report No. 2 Washington, DC: The George Washington University, School of Education and Human Development.

Swail, W., Cabrera, A., Lee, C. & Williams, A. (2005). *Latino students and the educational pipelines: A three-part Series. Part III: Pathways to the bachelor's degree for latino students.* Stafford, VA: Education Policy Institute.

Tierney, W. (1992). An anthropological analysis of student participation in college. *Journal of Higher Education, 63*(6), 603-618.

Tinto, V. (1973). *Dropout in higher education: A review of recent research*. Washington, D.C: U.S. Department of Education.

Tinto, V. (1975). Dropout from Higher Education: A Theoretical Synthesis of Recent Research", *Review of Educational Research, 65*(12), 89-125.

Tinto, V. (1987). *Leaving college: Rethinking the causes and cures of student attrition*. Chicago, IL: Chicago University Press.

Tinto, V. (1993). *Leaving college: Rethinking the causes and cures of student attrition. (2nd ed.).* Chicago, IL: Chicago University Press.

Tinto, V. (1998). Colleges as communities: Taking research on student persistence seriously. *The Review of Higher Education, 21*(2), 167-177.

Tinto, V. (2002). Promoting student retention: Lessons learned for the United States. Presentation at the 11th Annual Conference of the European Access Network, Prato, Italy, June 19, 2002.

Tinto. V. (2004). Student retention and graduation: Facing the truth, living with the consequences. (Occasional Paper, 1). Washington, DC: Pell Institute for the study of opportunity in Higher Education.

Tyler, J. (2003). Economic benefits of the GED: Lessons from recent research. *Review of Educational Research*. *73*(3), 369-403.

Ullah, H. & Wilson, M. (2007). Students' academic success and its association to student involvement with learning and relationships with faculty and peers. *College Student Journal, 41,* 1192-1202.

Umbach, P. & Wawrzynski, M. (2005). Faculty do matter: The role of college faculty in student learning and engagement. *Research in Higher Education, 46*(2), 153-184.

U.S. Department of Education, National Center for Education Statistics, Higher Education General Information Survey (2006). "Fall Enrollment in Institutions of Higher Education" surveys, 1970 through 1985; 1986-87 through 2005-06 Integrated

Postsecondary Education Data System, "Fall Enrollment Survey" (IPEDS-EF:86-99), and Spring 2001 through Spring 2006; and Projections of Education Statistics to 2016.

U.S. Department of Education (2009). *Trends in non-traditional student enrollment.* Retrieved December 27, 2010, from http://nces.ed.gov/pubs/web/97578f.asp.

U.S. Department of Labor (2011). Bureau of Labor Statistics. *Labor force statistics for the current population*. Washington, DC: Government Printing Office.

Upcraft, M., Gardner, J. & Barefoot, B. (2005). *Challenging and supporting the first-year student: A handbook for improving the first year of college.* San Francisco, CA: Jossey-Bass.

Van Gennep, A. (1960). *Rites of passage*. Chicago, IL: University of Chicago Press.

Volkwein, J., Valle, S., Parmley, K., Blose, G. & Zhou, Y. (2000, May). *A multi-campus study of academic performance and cognitive growth among native freshman, two-year transfers, and four-year transfers.* Paper presented at the annual meeting of the Association for Institutional Research, Cincinnati, OH.

Whitt, E., Edison, M., Pascarella, E., Nora, A. & Terenzini, P. (1999). Interactions with peers and objective and self-reported cognitive outcomes across 3 years of college. *Journal of College Student Development*, *40*, 61-78.

Wirt, J., Rooney, P, Choy, S. Provasnik, S., Sen., A. & Tobin, R. (2004). *The condition of education 2004 (NCES 2004-077)*. Washington, DC: U.S. Government Printing Office.

Wlodkowski, R., Mauldin, J. & Gahn, S. (2001). *Learning in the fast lane: Adult learners' persistence and success in accelerated college programs.* Indianapolis, IN: Lumina Foundation for Education.

APPENDIX A

Permission Letter from Participating Institution

GEORGIA HIGHLANDS COLLEGE

Georgia Highlands College
3175 Cedartown Highway
Rome, GA 30161

May 11, 2010

University of Georgia Institutional Review Board
c/o Human Subjects Office
612 Boyd GSRC
Athens, GA 30602-7411

Please note that Mr. Todd G. Jones, UGA Graduate Student, has the permission of Georgia Highlands College to conduct research at this institution for his study, "The Relationship Between Student Involvement Factors and Graduation Rates of Nontraditional Students Attending a Public Community College in the Southeast".

Mr. Jones will provide our Registrar with the introduction letter to participate in his survey and the survey link. To help maintain the confidentiality of our graduates, the Registrar will be asked to send the introduction letter and the survey link via the institutions email system in mid to late June. Depending on the response rate, Mr. Jones may provide additional email contacts to our graduates through the Registrar but will conclude his study and contact with our graduates by the end of July.

Mr. Jones has agreed to provide to my office a copy of the University of Georgia IRB-approved form, before he begins his study at Georgia Highlands College.

Signed,

Dr. J. Randy Pierce, President

APPENDIX B

Pilot Study Instructions

I am conducting a study as part of my doctoral requirements at UGA. This survey will be administered to a population of community college graduates from this institution. It is designed to measure how student involvement in a variety of activities relates to meeting the degree requirements from a community college.

Please take a moment and reflect on your involvement experiences at this institution and respond to each item according to the instructions. Pay close attention to the clarity of wording or the instructions and the questions when completing this survey. Note anything that is unclear or ambiguous, and feel free to about include any comments you have about the survey.

When you have finished the survey, complete the rating sheet that asks for your opinion about the survey and indicate any changes that you think should be made. Feel free to include other involvement factors that were important to your degree completion that may have been omitted. **When you have finished the survey and the rating sheet, please hit submit.**

This information will remain confidential and will only be used to determine the survey instruments relevance and the extent to which your responses coincide with the other students selected in the pilot test.

Thank you very much with assisting me in completing my degree requirements. Should you have any questions about this survey, please feel free to contact me at 706-368-7738.

Sincerely,
Todd Jones
Graduate Student
University of Georgia

APPENDIX C

Community College Graduation Involvement Pilot Survey

1. Community College Graduate Involvement Pilot Survey

Please take a moment to reflect on your involvement experiences at this institution and respond to each item according to the instructions. Pay close attention to the clarity of wording or the instructions and the questions when completing this survey. Note anything that is unclear or ambiguous, and feel free to include any comments you have about the survey.

When you have finished the survey, complete the rating sheet that asks for your opinion about the survey and indicate any changes that you think should be made. Feel free to include other involvement factors that were important to your degree completion that may have been omitted. When you have finished the survey and the rating sheet, please hit submit.

2. ENVIRONMENTAL FACTORS

Students' interaction in the college environment can impact their ability to earn a college degree. We are attempting to understand how different environmental factors at this institution influenced your degree completion. Please read each statement and indicate your response by marking the appropriate option.

1. Since enrolling in this institution, indicate how often you were involved in the following activity:

	Never	Rarely	Sometimes	Often	Always
Met with an Academic Adviser:	◯	◯	◯	◯	◯

2. Since enrolling in this institution, indicate how often you were involved in the following activity:

	Never	Rarely	Sometimes	Often	Always
Worked on group projects during class:	◯	◯	◯	◯	◯

3. Since enrolling in this institution, indicate how often you were involved in the following activity:

	Never	Rarely	Sometimes	Often	Always
Worked on group projects outside of class:	◯	◯	◯	◯	◯

4. Since enrolling in this institution, indicate how often you were involved in the following activity:

	Never	Rarely	Sometimes	Often	Always
Participated in class discussions:	◯	◯	◯	◯	◯

5. Since enrolling in this institution, indicate how often you were involved in the following activity:

	Never	Rarely	Sometimes	Often	Always
Took notes during class:	◯	◯	◯	◯	◯

6. Since enrolling in this institution, indicate how often you were involved in the following activity:

	Never	Rarely	Sometimes	Often	Always
Spent time doing homework each week:	◯	◯	◯	◯	◯

7. Since enrolling in this institution, indicate how often you were involved in the following activity:

	Never	Rarely	Sometimes	Often	Always
Used the campus tutorial services:	◯	◯	◯	◯	◯

8. Since enrolling in this institution, indicate how often you were involved in the following activity:

	Never	Rarely	Sometimes	Often	Always
Asked a professor for advice after class:	◯	◯	◯	◯	◯

9. Since enrolling in this institution, indicate how often you were involved in the following activity:

	Never	Rarely	Sometimes	Often	Always
Worked on a research project with a professor:	◯	◯	◯	◯	◯

10. Since enrolling in this institution, indicate how often you were involved in the following activity:

	Never	Rarely	Sometimes	Often	Always
Were asked questions by the professor in class:	◯	◯	◯	◯	◯

11. Since enrolling in this institution, indicate how often you were involved in the following activity:

	Never	Rarely	Sometimes	Often	Always
Met with a professor during their office hours:	◯	◯	◯	◯	◯

12. Since enrolling in this institution, indicate how often you were involved in the following activity:

	Never	Rarely	Sometimes	Often	Always
Worked with a professor outside of class(study aboard, community service, geology trip):	◯	◯	◯	◯	◯

13. Since enrolling in this institution, indicate how often you were involved in the following activity:

	Never	Rarely	Sometimes	Often	Always
Felt that the professors made course content relative to my life:	◯	◯	◯	◯	◯

14. Since enrolling in this institution, indicate how often you were involved in the following activity:

	Never	Rarely	Sometimes	Often	Always
Communicated with professors via email:	◯	◯	◯	◯	◯

15. Since enrolling in this institution, indicate how often you were involved in the following activity:

	Never	Rarely	Sometimes	Often	Always
Asked for assistance from front desk support:	◯	◯	◯	◯	◯

16. Since enrolling in this institution, indicate how often you were involved in the following activity:

	Never	Rarely	Sometimes	Often	Always
Met with staff in Career and Counseling Office:	◯	◯	◯	◯	◯

17. Since enrolling in this institution, indicate how often you were involved in the following activity:

	Never	Rarely	Sometimes	Often	Always
Discussed your financial aid with a staff member	◯	◯	◯	◯	◯

18. Since enrolling in this institution, indicate how often you were involved in the following activity:

	Never	Rarely	Sometimes	Often	Always
Spent time with a staff member in-between classes:	◯	◯	◯	◯	◯

19. Since enrolling in this institution, indicate how often you were involved in the following activity:

	Never	Rarely	Sometimes	Often	Always
Sought advice from a staff member (not faculty):	◯	◯	◯	◯	◯

20. Since enrolling in this institution, indicate how often you were involved in the following activity:

	Never	Rarely	Sometimes	Often	Always
Discussed course content with students outside of class:	◯	◯	◯	◯	◯

21. Since enrolling in this institution, indicate how often you were involved in the following activity:

	Never	Rarely	Sometimes	Often	Always
Studied with other students from this college:	◯	◯	◯	◯	◯

22. Since enrolling in this institution, indicate how often you were involved in the following activity:

	Never	Rarely	Sometimes	Often	Always
Socialized with other students on campus from this college:	◯	◯	◯	◯	◯

23. Since enrolling in this institution, indicate how often you were involved in the following activity:

	Never	Rarely	Sometimes	Often	Always
Socialized with other students off campus:	◯	◯	◯	◯	◯

24. Since enrolling in this institution, indicate how often you were involved in the following activity:

	Never	Rarely	Sometimes	Often	Always
Spent time in social networks (such as Facebook, Twitter, MySpace):	◯	◯	◯	◯	◯

25. Since enrolling in this institution, indicate how often you were involved in the following activity:

	Never	Rarely	Sometimes	Often	Always
Participated in intramural sports at this college	◯	◯	◯	◯	◯

26. Since enrolling in this institution, indicate how often you were involved in the following activity:

	Never	Rarely	Sometimes	Often	Always
Participated in student organizations at this college:	◯	◯	◯	◯	◯

27. Since enrolling in this institution, indicate how often you were involved in the following activity:

	Never	Rarely	Sometimes	Often	Always
Went on a trips sponsored by Student Life:	◯	◯	◯	◯	◯

28. Since enrolling in this institution, indicate how often you were involved in the following activity:

	Never	Rarely	Sometimes	Often	Always
Attended special events on campus:	◯	◯	◯	◯	◯

29. Since enrolling in this institution, indicate how often you were involved in the following activity:

	Never	Rarely	Sometimes	Often	Always
Studied with other students from this college:	◯	◯	◯	◯	◯

3. OUTPUTS

Please read each question carefully and indicate your response below.

1. What was your major or majors?

2. Please indicate your overall grade point average (GPA) earned from this college?

- ◯ 2.0 - 2.4
- ◯ 2.5 - 2.9
- ◯ 3.0 - 3.4
- ◯ 3.5 - 4.0

3. Approximately how long did it take you to earn your degree from this college?

- ◯ 1 to 2 years
- ◯ 3 years
- ◯ 4 years
- ◯ 5 years
- ◯ 6 years or more

4. What are your plans for this fall? (mark all that apply)

- ☐ Attending a four-year institution
- ☐ Working part-time
- ☐ Working full-time
- ☐ Serving in the military

Other (please specify)

4. BACKGROUND CHARACTERISTICS

Students who enroll in community colleges often exhibit background characteristics that can influence their ability to earn a college degree. Please read each statement and indicate your response.

1. Gender:

- ◯ Female
- ◯ Male

2. Year of Birth:

3. What is your marital status?

- ◯ Single (never married)
- ◯ Married
- ◯ Separated
- ◯ Divorced
- ◯ Widowed

4. Other than a spouse, do you have any other dependents?

- ◯ Yes
- ◯ No

If yes, how many dependents?

5. Please indicate your race/ethnicity:

6. How did you complete high school?

- ☐ High school diploma
- ☐ Home school diploma
- ☐ GED

7. In what year, did you complete the high school requirements listed above?

8. In what year did you first enroll in college?

9. Did any of your parents or guardians attend college?

- ◯ Yes
- ◯ No

10. Are you a U.S. Veteran?

- ◯ Yes
- ◯ No

11. During your last academic year at this college, were you considered financially independent for purposes of being eligible for financial aid?

- ◯ Yes
- ◯ No
- ◯ Did not apply for Financial Aid

12. During your final academic year at this college, where did you take the majority of your classes?

- ◯ Cartersville
- ◯ Douglasville
- ◯ Floyd
- ◯ Heritage Hall
- ◯ Marietta
- ◯ Paulding
- ◯ Online

13. During your last academic year at this college, how many hours per week did you work for pay? (on or off campus)

- ◯ Did not work for pay
- ◯ 1 to 9 hours
- ◯ 10 to 19 hours
- ◯ 20 to 34 hours
- ◯ More than 35 hours

14. Have you ever been a part-time student other than during the summer? (less than 12 hours or by requirements set by your program - for example Nursing 9 hours)

- ◯ Yes
- ◯ No

15. Did you attend a New Student Orientation Session prior to enrolling at this college?

◯ Yes

◯ No

16. Would you like to be considered for a chance to win one of four $50 Walmart Gift Certificates?

◯ Yes, please contact me at the email below if I win

◯ No

Email address

5. Community College Graduating Involvement Survey Rating Sheet

You are almost done. Please take a few moments and provide your feedback to this survey. Note anything that is unclear or ambiguous, or any issues you encountered with the online format. Thank you again for your assistance and valuable insight. Be sure to hit submit when done.

1. Are the instructions clear and concise?

◯ Yes

◯ No

Are there any changes that you would suggest

2. Are the survey questions clear?

◯ Yes

◯ No

Are there any changes that you would suggest

APPENDIX D

Community College Graduate Involvement Survey Instructions

Month, XX 2010

Dear Community College Graduate:

Congratulations on your recent graduation. I am a doctoral student at the University of Georgia and I'm asking for your help in assisting me in meeting my degree requirements.

You and 400 other recent community college graduates have been selected to participate in a study designed to assess how student involvement while enrolled in a community college related to your ability to earn an associate's degree. This study is completely voluntary and your responses will be kept confidential. You will receive no direct benefit from participating in this study but it may help in improving the quality of services at your alma mater. Of course, you will also be helping me in completing my degree requirements.

In order to participate, simply complete the survey below. There are no risks or financial costs to you and the survey is designed to be completed in less than 15 minutes. The survey is divided into three sections and asks about environmental factors, outputs, and background characteristics. All data collected will be stored online and be kept completely confidential.

I thank you in advance for your participation. Should you have any questions, please feel free to contact me at 706-368-7738 or by email at tjones@highlands.edu or Dr. Desna Wallin at 706-583-8098 or by email at dwallin@uga.edu.

Please take a few moments of your time to provide thoughtful responses to each question. Once you have completed the survey, be sure to hit the submit button at the bottom of the page.

Much appreciated,

Todd Jones
Graduate Student
University of Georgia

APPENDIX E

Community College Graduate Involvement Survey

1. Community College Graduate Involvement Survey

Please take a moment to reflect on your involvement experiences from your alma mater and respond to each item according to the instructions. Your input is greatly appreciated.

By completing this survey you are agreeing to participate in the research. Participants must be 18 years or older.

2. ENVIRONMENTAL FACTORS

Students' interaction in the college environment can impact their ability to earn a college degree. We are attempting to understand how different environmental factors at this institution influenced your degree completion. Please indicate you response to each statement below by marking the appropriate option to the following statement:

Since enrolling at this institution, how often were you involved in the following activity?

1. Met with an Academic Advisor.

	Never	Rarely	Sometimes	Often	Always
1.	◯	◯	◯	◯	◯

2. Worked on group projects during class.

	Never	Rarely	Sometimes	Often	Always
2.	◯	◯	◯	◯	◯

3. Worked on group projects outside of class.

	Never	Rarely	Sometimes	Often	Always
3.	◯	◯	◯	◯	◯

4. Participated in class dicussions.

	Never	Rarely	Sometimes	Often	Always
4.	◯	◯	◯	◯	◯

5. Took notes during class.

	Never	Rarely	Sometimes	Often	Always
5.	◯	◯	◯	◯	◯

6. Spent time doing homework each week.

	Never	Rarely	Sometimes	Often	Always
6.	◯	◯	◯	◯	◯

7. Used the campus tutorial services.

	Never	Rarely	Sometimes	Often	Always
7.	◯	◯	◯	◯	◯

8. Asked a professor for advice after class.

	Never	Rarely	Sometimes	Often	Always
8.	◯	◯	◯	◯	◯

9. Worked on a research project with a professor.

	Never	Rarely	Sometimes	Often	Always
9.	◯	◯	◯	◯	◯

10. Were asked questions by the professor in class.

	Never	Rarely	Sometimes	Often	Always
10.	◯	◯	◯	◯	◯

11. Met with a professor during their office hours.

	Never	Rarely	Sometimes	Often	Always
11.	◯	◯	◯	◯	◯

12. Worked with a professor outside of class(research project, study aboard, community service project, geology trip).

	Never	Rarely	Sometimes	Often	Always
12.	◯	◯	◯	◯	◯

13. Felt that the professors made course content relative to my life.

	Never	Rarely	Sometimes	Often	Always
13.	◯	◯	◯	◯	◯

14. Communicated with professors via email.

	Never	Rarely	Sometimes	Often	Always
14.	◯	◯	◯	◯	◯

15. Asked for assistance from front desk support.

	Never	Rarely	Sometimes	Often	Always
15.	◯	◯	◯	◯	◯

16. Met with staff in Career and Counseling Office.

	Never	Rarely	Sometimes	Often	Always
16.	◯	◯	◯	◯	◯

17. Discussed your financial aid with a staff member.

	Never	Rarely	Sometimes	Often	Always
17.	◯	◯	◯	◯	◯

18. Spent time with a staff member in-between classes.

	Never	Rarely	Sometimes	Often	Always
18.	◯	◯	◯	◯	◯

19. Sought advice from a staff member (not faculty).

	Never	Rarely	Sometimes	Often	Always
19.	◯	◯	◯	◯	◯

20. Discussed course content with students outside of class.

	Never	Rarely	Sometimes	Often	Always
20.	◯	◯	◯	◯	◯

21. Studied with other students from this college.

	Never	Rarely	Sometimes	Often	Always
21.	◯	◯	◯	◯	◯

22. Socialized with other students on campus from this college.

	Never	Rarely	Sometimes	Often	Always
22.	◯	◯	◯	◯	◯

23. Socialized with other students off campus.

	Never	Rarely	Sometimes	Often	Always
23.	◯	◯	◯	◯	◯

24. Spent time in social networks (such as Facebook, Twitter, MySpace).

	Never	Rarely	Sometimes	Often	Always
24.	◯	◯	◯	◯	◯

25. Participated in intramural sports at this college.

	Never	Rarely	Sometimes	Often	Always
25.	◯	◯	◯	◯	◯

26. Participated in student organizations at this college.

	Never	Rarely	Sometimes	Often	Always
26.	◯	◯	◯	◯	◯

27. Went on a trip sponsored by Student Life.

	Never	Rarely	Sometimes	Often	Always
27.	◯	◯	◯	◯	◯

28. Attended special events on campus.

	Never	Rarely	Sometimes	Often	Always
28.	◯	◯	◯	◯	◯

29. Served as a leader in a student organization on campus.

	Never	Rarely	Sometimes	Often	Always
29.	◯	◯	◯	◯	◯

3. OUTPUTS

Please read each question carefully and indicate your response below.

1. What was your major or majors?

2. Please indicate your overall grade point average (GPA) earned from this college?

- ◯ 2.0 – 2.4
- ◯ 2.5 – 2.9
- ◯ 3.0 – 3.4
- ◯ 3.5 – 4.0

3. Approximately how long did it take you to earn your degree from this college?

- ◯ 1 to 1.5 years
- ◯ 2 to 2.5 years
- ◯ 3 to 3.5 years
- ◯ 4 to 4.5 years
- ◯ 5 or more years

4. What are your plans fall 2011? (mark all that apply)

- ☐ Attending a four-year institution
- ☐ Working part-time
- ☐ Working full-time
- ☐ Serving in the military

Other (please specify)

4. BACKGROUND CHARACTERISTICS

Students who enroll in community colleges often exhibit background characteristics that can influence their ability to earn a college degree. Please read each statement and indicate your response.

1. Gender:

- ◯ Female
- ◯ Male

2. Year of Birth:

3. What is your marital status?

- ◯ Single (never married)
- ◯ Married
- ◯ Separated
- ◯ Divorced
- ◯ Widowed

4. Other than a spouse, do you have any other dependents?

- ◯ Yes
- ◯ No

If yes, how many dependents?

5. Please indicate your race/ethnicity:

6. How did you complete high school?

- ☐ High school diploma
- ☐ Home school diploma
- ☐ GED

7. In what year, did you complete the high school requirements listed above?

8. In what year did you first enroll in college?

9. Did any of your parents or guardians attend college?

- ◯ Yes
- ◯ No

10. Are you a U.S. Veteran?

- ◯ Yes
- ◯ No

11. During your last academic year at this college, were you considered financially independent for purposes of being eligible for financial aid? (financial independence may include one or more of the following: being married, having a child you support, being 24 years or older, or having served in the military)

- ◯ Yes
- ◯ No
- ◯ Did not apply for Financial Aid

12. During your final academic year at this college, where did you take the majority of your classes?

- ◯ Cartersville
- ◯ Douglasville
- ◯ Floyd
- ◯ Heritage Hall
- ◯ Marietta
- ◯ Paulding
- ◯ Online

13. During your last academic year at this college, how many hours per week did you work for pay? (on or off campus)

- ◯ Did not work for pay
- ◯ 1 to 9 hours
- ◯ 10 to 19 hours
- ◯ 20 to 34 hours
- ◯ More than 35 hours

14. Have you ever been a part-time student other than during the summer? (less than 12 hours or by requirements set by your program - for example Nursing 9 hours)

◯ Yes

◯ No

15. Did you attend a New Student Orientation Session prior to enrolling at this college?

◯ Yes

◯ No

APPENDIX F

Environmental Factors for the CCGIS Instrument

Environmental Factors	Item Description/Variable Label
Academic Involvement	
AcadInv 1	Asked for assistance from front desk support
AcadInv 2	Met with an academic advisor
AcadInv 3	Worked on group projects during class
AcadInv 5	Took notes during class
AcadInv 6	Spent time doing homework each week
AcadInv 7	Used the campus tutorial services
Extracurricular Involvement	
ExtrInv 25	Participated in intramural sports at this college
ExtrInv 26	Participated in student organizations at this college
ExtrInv 27	Went on trip sponsored by student life
ExtrInv 28	Attended special events on campus
ExtrInv 29	Served as a leader in a student organization
Faculty Involvement	
FacInv 4	Participated in class discussions
FacInv 8	Asked a professor for advice after class
FacInv 9	Worked on a research project with a professor
FacInv 10	Were asked questions by the professor in class
FacInv 11	Met with a professor during their office hours
FacInv 12	Worked with a professor outside of class (study aboard, community service, geology trip)
FacInv 13	Felt that professors made course content relative to my life
FacInv 14	Communicated with a professor via email
Staff Involvement	
StaffInv 15	Asked for assistance from front desk support
StaffInv 16	Met with a staff member in counseling and career services
StaffInv 17	Discussed your financial aid with a staff member
StaffInv 18	Spent time with a staff member in-between classes
StaffInv 19	Sought advice from a staff member (not a faculty member)

Peer Involvement	
PeerInv 20	Discussed course content with students outside of class
PeerInv 21	Studied with other students from this college
PeerInv 22	Socialized with other students on campus from this college
PeerInv 23	Socialized with other students from off campus
PeerInv 24	Spent time in social networks (such as Facebook, Twitter, MySpace)
Extracurricular Involvement	
ExtraInv 25	Participated in intramural sports at this college
ExtraInv 26	Participated in student organizations at this college
ExtraInv 27	Went on trips sponsored by student life
ExtraInv 28	Attended special events on campus
ExtraInv 29	Served as a leader of a student organization

APPENDIX G

IRB Approval Form

The University of Georgia

Office of The Vice President for Research
DHHS Assurance ID No. : FWA00000901

Institutional Review Board
Human Subjects Office
612 Boyd GSRC
Athens, Georgia 30602-7411
(706) 542-3199
Fax: (706) 542-3360
www.ovpr.uga.edu/hso

APPROVAL FORM

Date Proposal Received: 2010-05-28 **Project Number:** 2010-10879-0

Name	Title	Dept/Phone	Address	Email
Dr. Desta Wallin	PI	LEAP 417 River's Crossing 583-8098		dwallin@uga.edu
Mr. Todd Glen Jones	CO	LEAP 706-368-7738	[redacted] [redacted], GA [redacted]	gbc2aga@uga.edu

Title of Study: The Relationship Between Student Involvement Factors and Graduation Rates of Nontraditional Students Attending a Public Community College in the Southeast

45 CFR 46 Category: Administrative 2
Parameters:
Approved for Institutions with Authorization Letters on File;

Change(s) Required for Approval:
Revised Application;
Revised Consent Document(s);

Approved : 2010-07-02 **Begin date : 2010-07-02** **Expiration date : 2015-07-01**

NOTE: Any research conducted before the approval date or after the end data collection date shown above is not covered by IRB approval, and cannot be retroactively approved.

Number Assigned by Sponsored Programs:

Funding Agency:

Your human subjects study has been approved.

Please be aware that it is your responsibility to inform the IRB:
. . . of any adverse events or unanticipated risks to the subjects or others within 24 to 72 hours;
. . . of any significant changes or additions to your study and obtain approval of them before they are put into effect;
. . . that you need to extend the approval period beyond the expiration date shown above;
. . . that you have completed your data collection as approved, within the approval period shown above, so that your file may be closed.

For additional information regarding your responsibilities as an investigator refer to the IRB Guidelines.
Use the attached Researcher Request Form for requesting renewals, changes, or closures.
Keep this original approval form for your records.

Chairperson or Designee,
Institutional Review Board