The Relationship Between Student Demographics on Persistence at a Rural Community College

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Abstract

The purpose of this quantitative research study was to determine if student background variables ([age, race, gender, and socioeconomic status, (SES)] are predictors of student persistence semester-to-semester (2009-2010). The sample population included 298 students, consisting of first-time, first-semester, full and part-time students working toward achieving a degree or credential at a rural community college in northeastern North Carolina. Community colleges enroll almost half of the nation's college learners, fewer than half of the learners who begin at community colleges earn a degree or credential within six years of initial enrollment. The semester-to-semester persistence rate from the sample in the study was 75%, much higher than national averages. Although student persistence has been researched extensively in the past decades, only recently has persistence research been conducted on the most diverse populations in two-year institutions where attrition is the highest. The lack of persistence leads to loss of college revenue, fewer graduates entering the workforce, and fewer students achieving their personal goals. Using associated research and archived records this study analyzed the effect of age, race, gender, and SES on persistence. Logistic regression, including descriptive statistics, was used, and determined varying relationships between independent variables and the dependent variable, persistence. No significant relationships were found between persistence and age, race, and SES. While some literature and empirical research with these variables previously found significant relationships, the current study did not and this may be due to; few studies conducted at rural community colleges, the use of rural sample size, and the reliance on financial aid by students. The strongest relationship was found between the independent variable and

gender. The sample population consisted of 48% male and 51.7% female. The results showed that the level of the relationship between gender and persistence was p=.005, which was less than the alpha level of .05. Also, literature reviewed for the study showed that students' SES is significantly linked to persistence once the variables of gender and race are controlled. Future research could incorporate a qualitative analysis to provide useful information regarding these same independent variables in the context of the individual student.

Acknowledgements

I give thanks to God for his season of Grace and Favor. Through his mercy, I have reached my goal. This journey has been a long one for me. Over the past 7 years, I lost my mother, three sisters, and my oldest brother, and a sister-in-law. I transitioned from a senior-level position at a local community college, to a senior-level position at a four-year institution. I had to take two leaves of absence for financial reasons; and a medical leave of absence to undergo major surgery, but I stayed the course. I say all of this as an encouragement to others who are on this journey and may be weary and don't believe they will reach completion.

I acknowledge Northcentral University for providing access to higher education opportunities for all who would dare to pursue a terminal degree. My committee chair, Dr. Dippold was responsive, professional and encouraging as she guided me through the last courses of the dissertation process. I thank her and the committee members for their expertise and professionalism.

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Chapter 1: Introduction

Community colleges currently enroll 43% of students in the United States, but only one in five of those who enroll graduates in three years (Marcus, 2011). There have been an increasing number of research studies directed at examining both demographic and psychological factors and their effects on college learner persistence (Bailey & Alfonso 2005; Barnett, 2010; Chaves, 2006; Deli-Amen, 2011; Sorey & Duggan, 2008). Emerging from these studies are factors hypothesized to influence whether learners continue in college to the point of degree attainment or to the point of receiving their terminal certificates (Ziskin, Gross, & Hossler, 2000). The major factors often used to measure community college learner persistence are age, race, gender, and socioeconomic status (SES) (Craig, 2008; Fike & Fike, 2008; Horn & Nevill, 2006; McClenney, 2004; Scoggin & Styron, 2006).

Persistence is important because a number of occupational and educational choices are contingent upon successful completion of relevant degree types (Horn, Berger, & Carroll, 2004). Attrition impacts economic and social well-being on a public and private basis; affecting individuals, institutions, and society (Merisotis, 2005). An uneducated or unskilled workforce leads to higher unemployment rates, thus affecting America's competitiveness in its shift from an industrial to an information economy (Carnevale & Desrochers, 2004; Merisotis, 2005). The negative effects of attrition may be intergenerational, as children of non-college graduates are less likely to finish high school or college and more likely to live in poverty than are children of college graduates (Carnevale & Desrochers, 2004; Choy, 2001). The focus of this research study was to

investigate the effects of age, race, gender, and SES on community college learners' persistence versus attrition in a rural northeastern North Carolina community college.

Background

Access to higher education has systematically increased over the past 60 years to accommodate the need for equal opportunity and the increased complexity of work (American Association of Community Colleges, 2010). The 1948 Truman Report explicitly supported equal opportunity in education and initiated the momentum for expansion in higher education. Momentum of increased access established by the Truman Report was expanded by the civil rights movement which was instrumental in eventually attaining complete access to higher education by formerly underrepresented groups (AACC, 2010).

Community colleges, constructed as neighborhood institutions, increased access to higher education for those who did not previously have access because of inequitable admission policies or physical distance from the campus (Cohen & Brawer, 2008). While community colleges have played a crucial role in opening access to higher education, access alone is not sufficient. In recent years policy makers, educators, accreditation agencies, and scholars have increasingly turned their attention to student persistence and completion, but most of the research has been focused on the educational outcomes of baccalaureate students and not those who begin at a community college attempting to earn an associate's degree (Bailey, Jenkins, and Leinbach, 2005).

The downturn in the nation's economy continues to serve as an impetus for Americans over the age of 25 to enroll into postsecondary education institutions. This enrollment trend is projected to continue as the global, knowledge-based economy

requires education and training beyond the current levels (Soares, 2009). Rural communities throughout the United States are facing significant issues and problems exacerbated by the economic recession (Smith, 2010). Consequently, rural community colleges are experiencing increased enrollments; and student affairs administrators and policymakers must fully support and address the needs of this increasing student population so that they can persist toward college completion and become competitive.

Statement of the Problem

The persistence rate of first-year, first-semester students in higher education, especially in community colleges where attrition rates are higher than four-year institutions, has become a national, state, and local problem (Palmer, Davis, Moore, & Hilton, 2009). Lack of persistence leads to lost revenue to the college, fewer graduates entering the workforce, and even fewer students completing their personal goals (Kotamraju & Blackman, 2010; Liu, Gomez, & Yen, 2009). Community colleges enroll almost half of the nation's college learners (National Center for Education Statistics, 2005), and fewer than half of the learners who begin at community colleges earn a degree or credential within six years of initial enrollment (Achieving the Dream, 2011). State and local governments allocate approximately 3 billion dollars a year to community colleges to help pay for the education of students who drop out, and the federal government appropriates 5.2 billion per year (Schneider & Yin, 2011). Research studies (Goldin, Katz, & Kuziembo, 2006; Karp, Hughes, & O'Gara, 2008; Paulsen & St. John, 2002) have empirically demonstrated that age, race, gender, and SES have a strong impact on learner retention versus attrition.

There are over 950 rural community colleges in the United States (Smith, 2008). However, few studies have been conducted on rural learners' demographics and the learners' attendance and persistence at rural community colleges (Smith, 2008). There is increased emphasis on persistence and rural community colleges are expected to respond to local/regional workforce training needs (Ralls, 2008; Smith 2008). Conducting this study will allow the researcher to address how these seemingly important (i.e. age, race, gender, and SES) factors influence persistence and attrition of rural, community college learners. This information may point to what specialized support services are needed to increase learner persistence and success.

Purpose of the Study

The purpose of this quantitative correlation study was to contribute empirical research findings regarding the relationship of the independent variables; age, race, gender, and SES on learner persistence in a rural community college in northeastern North Carolina. Current research on persistence does not address the relationship of multiple factors on rural community college students. The goal was to analyze the relationship of the four independent variables on the dependent variable (persistence) as indicated by the research questions.

The study used a correlational explanatory research design. All participants were from the same community college and were full and part-time, first-time students working toward achieving a degree or credential. The institution's student enrollment data system was used to identify the participants.

Research Questions

The purpose of this quantitative research study was to contribute empirical research findings to an area of research where virtually little is known about the effects of age, race, gender, and SES on learner persistence and attainment of a certificate, or associates degrees in a rural northeastern North Carolina community college. More than half of all rural students in the United States attend school in just 11 states and North Carolina leads in rural enrollment size. Furthermore, the four states with the largest rural enrollment, North Carolina, Texas, Georgia, and Ohio serve one in four of all rural students, more than 27 other states combined (Johnson & Strange, 2009).

The rural community college is often the entry point to higher education for rural citizens. Consequently, rural community colleges are experiencing increasing enrollment of non-traditional students whether first-generation or older students. In order to be able to educate America's work force, the rural community college must be accessible to the most remote and disadvantaged populations (Hardy & Katsinas, 2007).

Consistent with earlier research studies, approximately one-half of the learners who depart institutions of higher education do so within the first year (Bers & Smith, 1991; McClenney, 2004; Tinto, 1993), and attrition rates during the first year are even higher for community college learners as compared to traditional four-year institutions (Choy, 2001; Kolesnikova, 2009; McClenney, 2004). Tinto's theory of student retention (1993) found that all institutions must identify high risk learners and improve academic and social integration of learners. The increase in postsecondary student enrollment and open admission policies offered by many institutions has led to an increase in student diversity (Provasnik & Planty, 2008). Theoretical models of student retention tend to be

longitudinal, complex and contain several categories of variables that reflect both student and institutional characteristics (Bailey, Calcagno, Jenkins, Kienzl, & Leinbach, 2004; Fike & Fike, 2008; Karp et al. 2008; Reason, 2009; Tinto, 1993). Based upon this information, this quantitative research study examined the relationship of age, race, gender, and SES on learner persistence and answered the following research questions:

Q1. What is the relationship between students' ages and persistence from first semester to second semester in a community college in rural northeastern North Carolina?

Q2. What is the relationship between students' race and persistence from first semester to second semester in a community college in rural northeastern North Carolina?

Q3. What is the relationship between students' gender and persistence from first semester to second semester in a community college in rural northeastern North Carolina?

Q4. What is the relationship between students' SES (income) and persistence from first semester to second semester in a community college in rural northeastern North Carolina?

Hypotheses

H1o Age has no statistically significant relationship with students' persistence from first semester to second semester.

H1a There is a significant relationship between age and college student persistence from first semester to second semester.

H2o Race has no statistically significant relationship with students' persistence from first semester to second semester.

H2a There is a significant relationship between race and college student persistence from first semester to second semester.

H3o Gender has no statistically significant relationship with students' persistence from first semester to second semester.

H3a There is a significant relationship between gender and college student persistence from first semester to second semester.

H4o SES (income) has no statistically significant relationship with students' persistence from first semester to second semester.

H4a There is a significant relationship between SES (income) and college student persistence from first semester to second semester.

Nature of the Study

This quantitative research study was designed to measure the relationship of age, race, gender, and SES, between college learners' persistence in a rural community college in northeastern North Carolina. The quantitative research method is a formal, objective, systematic way of using numerical data to test hypotheses (Creswell, 2009). As this study was quantitative in nature, it used interval scales that showed the quantities of the variables or the frequency of occurrence. Interval level measurements make it possible to assess the size of the difference between variables (Schutt, 2004). The study used a correlational regression design to assess how each of the independent variables (age, race, gender, and SES) related to learner persistence (dependent variable) at a rural community college, thus addressing the proposed research questions and hypotheses.

The correlational design is best suited to research examining relationships between constructs as they exist in the natural setting (Schutt, 2004). More specifically, the correlation design allows for bivariate correlations between each of the variables as well as how the independent variables when combined through multiple correlation and regression related to the dependent variable.

The multiple correlation and regression analysis allowed measurement/assessment of how much of the variance in the dependent variable (i.e. persistence) was accounted for in each of the independent variables; race, age, gender, and SES. The mathematical model used for this study is represented by Y = Persistence (dependent variable): Mathematical equation: $Y_{persistence} = B_{constant}+B_1X_{age}+B_2X_{race}+B_3X_{male}+B_4X_{SES}+\varepsilon$. The model is further defined in chapter three.

Significance of the Study

The significance of this study to the body of literature in higher education is the data acquisition and the location. There needs to be further research on the relationship between student characteristics, such as, age, race, gender, and SES with academic persistence in a rural community college environment. Previous studies focused on four-year institutions, and lately two-year institutions, but very few focused on rural community colleges (Smith, 2010). The persistence rate of first-year, first-semester students in higher education, especially in community colleges where attrition rates are lower than four-year institutions has become a national, state, and local problem (Bailey & Morest, 2006). Lack of persistence leads to lost revenue to the college, fewer graduates entering the workforce, and even fewer students completing their personal

goals. The rural community college is often the entry point to higher education for rural citizens.

The economic stability of the United States depends upon increasing college enrollment and completion (Obama, 2009). Increasing the educational attainment of a local rural population will have a positive economic benefit on the individuals, the community, and our nation (Smith, 2010). Based on Census data that demonstrate trends for educated young people to leave rural areas, it is recommended that rural areas focus on enhancing the skills of workers that are less likely to relocate (U. S. Census Bureau, 2009). Individuals in rural geographical areas tend to form a sense of community from their current local issues through establishing a sense of connectivity.

As more adult learners enroll in community colleges, college administrators are turning to internal institutional research to determine how to encourage adult learners to persist. The research questions in this study addressed the relationship of the constructs at a rural community college in northeastern North Carolina. The study offered insight as to the strength of the relationship between age, race, gender, and SES, with student academic persistence during the first two semesters of enrollment in a rural community college. Internal data and analysis will guide decision making as administrators align college programs and services with student background demographics and the institution's overall environment.

Definition of Key Terms

Cohort. A cohort is a group of people studied during a period of time. The individuals have at least one statistical factor in common such as when the cohort began college (Achieving the Dream, 2006).

Persistence. A student's postsecondary education continuation behavior that leads to graduation, a degree or certificate. A student may "stop-out" during the matriculation towards completion and is said to have persisted. (Arnold, 1999).

Race. Race refers to learners of color such as; African-Americans, Latinos, Asian, or American Indian/Alaska Native, often defined as minorities (Rendon, 2006).

Socio-economic Status. The measurement of a person's social and economic condition within a society is referred to as SES. Based upon a learner's family income, a learner could be ranked as low, medium, or high SES. Other variables are occupation, education, income, wealth, and residence (Young, Johnson, Hawthorne, & Pugh, 2011).

Summary

Even though community colleges enroll almost half of the nation's college learners (National Center for Education Statistics, 2005), fewer than half of the learners who begin at community colleges earn a degree or certificate within six years of initial enrollment (Bailey, Alfonso, Calcagno, Jenkins, Kienzl, & Leinbach, 2004; Bailey & Morest, 2006). Research studies (Goldin et al. 2006; Karp, et al. 2008; Paulsen & St. John, 2002) have empirically demonstrated that age, race, gender, and SES have a strong relationship on learner retention versus attrition. Literature on community college persistence has focused on urban community colleges. In light of this finding, a critical question emerges. As it relates to graduation and persistence rates, are rural community college learners affected by similar factors as urban community college students? The focus of this research study was to investigate the relationship of age, race, gender, and SES on community college learners' persistence in a rural northeastern North Carolina community college.

Chapter 2: Literature Review

Introduction

The purpose of this quantitative method research study was to contribute empirical research findings regarding how the variables of age, race, gender, and SES affect learner persistence in a rural community college in northeastern North Carolina. This chapter will describe the origin and the current state of the community college system in the U.S. A brief historical review of the North Carolina Community College System (the third largest system in the U.S.) will be presented, as well as the status of student persistence in the community college system. The Carnegie Classification of community colleges relative to "rural" designation will be explained. An examination of the literature regarding each independent variable will follow. Finally a summary of the literature including what is known and still unknown will be discussed

The literature search was conducted using multiple resources. Keywords used in the electronic search were: persistence, academic persistence, retention, gender, race, institutional attachment, socioeconomic status, community colleges, and age. The following databases provided the majority of the literature for this study: JSTOR, Sage, ProQuest, and ERIC. The "working papers" found on the website of The Community College Research Center, Teachers College, Columbia University was used extensively.

In addition, copies of the following journals were electronically or manually searched: Research in Higher Education, The Review of Higher Education, College Student Affairs Journal, Journal of Higher Education, and Journal of College Student Development. Additional articles were reviewed using the reference lists of materials found using the electronic and manual searches. The criteria used to select the relevant

articles and books for detailed examination included studies and other materials that explored relationships between the independent variables and dependent variables to be used in the research study.

Theoretical Framework

Student persistence is often measured by the institution's student retention rates. The most widely used conceptual framework of persistence and completion developed by education researchers are based on Tinto's Student Integration Model (1993) and Bean's Student Attrition Model (1985), and was based primarily on four-year college models with emphasis on full-time, traditional aged residential students (Bailey & Alphonso, 2005). The central implication of their models is that institutions should try to foster the academic and social engagement of their students in and with the college to maximize persistence and retention rates. The large majority of the research inspired by these two models has consisted of single institutional studies which do not allow an analysis of the influence of differences in institutional characteristics, and has not shown strong applicability to community colleges (Bailey & Alfonso, 2005).

Tinto's integration framework (1993) is often assumed to be inapplicable to the study of student persistence at community colleges because social integration is considered unlikely to occur for students at these institutions (Karp et al., 2008). Community college students' attendance patterns are different than four-year students. They are not residential students; they often work full-time, and have other family obligations off-campus. These factors often lead to the conclusion that community college students lack the time to participate in activities such as social clubs that would facilitate social integration (Bailey and Alphonso, 2005).

Many studies use longitudinal data to estimate the probability of completing college. However, most of these studies look only at two points in time. First, when students begin their postsecondary education. Researchers collect relevant covariates such as gender, race/ethnicity, socioeconomic status (SES), and institutional characteristics (Bailey et al. 2005). After a given amount of time has passed to allow students to graduate, researchers again collect data to estimate the direct effect of these factors on some combination of policy-relevant educational outcomes such as graduation, dropout, persistence or transfer.

The concept of integration as a means to persistence may have less relevance in a community college, more specifically a rural community college; therefore, efforts to create student support programs to foster integration at a rural community college may be disputable. Research by Deli-Amen, (2011) indicated that Tinto's framework is appropriate. The research used data from the Beginning Postsecondary Students (BPS) Longitudinal Study, and found that measures of social integration were related to persistence for community college students. The research further contended that the academic component may be more important than the social aspect for community college students; however, Tinto (1975) proposed that students need a balance between academic and social domains.

Over the past 40 years, researchers have attempted to identify and analyze variables that may influence students' decisions to persist or dropout. Areas of focus have included student background characteristics (Grossett, 1989; Leppel, 2005; Zhai & Monzon, 2001), socioeconomic status (Rendon, 1994), racial differences (Cubeta, Travers, & Scheckley, 2001; Hu & St. John, 2001), and institutional attachment (Hawley

& Harris, 2005; Volkwein & Strauss, 2004). This research study explored the ways that integration does and does not occur in the rural community college.

Community Colleges in America

Community colleges offer an open door opportunity to all who choose to enter (American Association of Community Colleges, 2007a). They enroll 44% of all undergraduates, 49% of first-time enrolled students, many minority students, students with low socioeconomic status, and nontraditional age students who frequently enter college less academically prepared than traditional students (Bailey, Leinbach, and Jenkins, 2006). Compared to four-year institutions, community colleges serve a more diverse population and provide a wider variety of educational opportunities (Clotfelter, Ladd, Muschkin, and Vigdor (2012).

Although the actual origin of the community college in America has been dated by some to have started in the late nineteenth century, it appears that a number of historians consider the opening of the Joliet Junior College near Chicago, Illinois to be the actual beginning of the community college movement in America (Boggs, 2010). Joliet Junior College opened its doors in 1901. This seminal institution was reported to have been the work of William Rainey Harper, president of the University of Chicago, and J. Stanley Brown, principal of Joliet High Senior School. Their goal was to expand educational opportunities to students who otherwise would not have had the chance to attend college as a direct result of economic, social, and mobility roadblocks (Boggs, 2010).

According to the President's Commission of 1947, a major change occurred in the American Educational System when education was deemed not to be the special privilege

of America's educational elite. Education was to be an opportunity for every person in America to pursue higher education – despite their educational background and their financial resources (Boggs, 2010). In fact, it was the President's Commission (1947) that was said to have first used the term "community college."

The community college system was developed in stark contrast to the students who traveled distances from home to go to college and who resided on campuses (Boggs, 2010). In the case of community college students, they traveled to school but often lived at home. This had a significant economic impact on students who no longer had to pay room and board. Again, according to both the President's Commission (1947), and the National Commission on Community Colleges (2008) almost 90% of community college students commute just a short distance from home.

Researchers propose that community colleges provide an insurgence of life and viability into hundreds of small, rural communities (National Commission on Community Colleges, 2008). This literature review will present a clear and concise operational definition of rural community college. However, keeping with some of the important historical facts being made in the dissertation proposal, it is important to know that the model of community colleges presented in the United States of America is now being emulated around the world (Boggs, 2010).

For example, in 2009, Jill Biden presented an address on the role community colleges could play in countries like Saudi Arabia, New Zealand, China, Thailand, and the Republic of Georgia. Basically, the address urged these foreign representatives to try and develop their community college programs on a model based upon what is occurring in the United States (Boggs, 2010). It is not the goal of this dissertation proposal to

provide a complete essay on the history of community colleges. Instead, the goal is to highlight some of the important historical characteristics of community colleges.

Current State of Community Colleges

Community colleges have shown great strides since their beginnings in 1901. There are approximately 1200 community and junior colleges in the United States (US) (AACC, 2009). Under the original model of junior colleges, community colleges have evolved into degree awarding, regionally and nationally accredited institutions of higher education. Between 1997 and 2007, community colleges' enrollment grew by 18% and the number of certificates and associate awarded increased more than 25%. While community colleges tend to restrict their degree awards to the associate degree, there are two year community colleges that are either preparing to or presently awarding baccalaureate degrees in applied fields such as nursing and teacher education (AACC, 2009).

Consistent with what they are doing now, community colleges have become the portal of entry for nontraditional and traditional students who may want to upgrade their work skills and for other workers who may have been displaced and now want to reenter the workforce (College Board, 2009). Community colleges now enroll approximately 45% of all undergraduates within the United States, at an average cost of 2,544 dollars per year (College Board, 2009). The National Commission on Community Colleges (2008) reports that community colleges educate over half of the nation's registered nurses and that they educate a majority of health care workers. Importantly, the commission also points out that community colleges educate over 80% of the first responders such as paramedics, firefighters, police officers and emergency medical technicians.

It is also important to recognize that community colleges help to develop curricula that are specifically designed to respond to the economic needs and changes for a community (Boggs, 2010). An example of this occurrence can be found in Napa Valley College and their viticulture program; the Gulf Coast Community College has a petrochemical technicians' program; and, Alabama Southern Community College has a paper technology program due to the importance of wood/pulp in that part of the country (Boggs, 2010). While there are positive signs in the community college research literature, it is critically important to recognize the completion rates are low (National Commission on Community Colleges 2008).

Community colleges were designed to provide open door and low-cost access at convenient locations (Clotfelter, et al., 2012). These factors have led to relatively low persistence and completion rates compared to other more selective institutions (Jenkins, 2011). There are a number of hypotheses as to why the community college students fail to persist. For example, community colleges often serve students who have the fewest options and the greatest challenges of U.S. community college students (National Commission on Community Colleges 2008). It is reported by the National Commission on Community Colleges (2008) that 57% of community college students work more than 20 hours per week, 34% spend 11 or more hours per week caring for dependents, and 21% spend between 6 and 20 hours per week commuting to and from class. These factors are contributing factors for the low percentage of students reaching their academic goals (National Commission on Community Colleges 2008).

Among nontraditional community college students nationwide, 46% leave in their first year (48 % in North Carolina) compared with 23% of traditional students (Clotfelter,

et al., 2012). Of those classified as "highly nontraditional," 62% of these students leave within three years without obtaining a degree, compared to 19% of the minority of "traditional" community college students. Overall, non-traditional students with at least two risk factors complete their programs at a rate of less than 15%, compared to 57% of traditional students. Nationwide, community college completion rates improve while North Carolina's worsen, a condition brought on by five primary factors*:* the lack of intent to earn a degree, work recruitment prior to graduation, financial pressures, inability to qualify for financial aid, and a lack of academic preparedness (Clotfelter, et al., 2012).

With regard to financial pressures, data from the American Council on Education indicate that while they are the most likely to benefit, community college students are the least likely to apply for financial aid, with 37% of all students and 22% of the lowest-income students not applying for any form of aid in 2003–04 (Kantrowitz, 2011; King, 2006). Part-time enrollment, low socioeconomic status, nontraditional aged, and are independent, all characteristics of community college students, are the ones most likely not to apply for financial aid, even when they are eligible for Pell grants (Student Financial Aid Services, 2010). Research has shown that filing a FAFSA has a positive relationship with persistence among lower-income students (Novak & McKinney, 2011). The lack of academic preparedness is of great concern in that taxpayers often end up "paying double" for high school graduates to take remedial courses before working on college credits. Since 1999–2000, the percentage of North Carolina community college students requiring remediation has ranged from 48.6% to 54.3% (Ralls, 2008).

North Carolina Community College System

In 1964, the former Chairman of the State's Board of Education reported that the "open door" policy would establish the very foundation for what would become the North Carolina Community College System (NCCCS). On the positive side, very few people could have imagined that the NCCCS one day would become one of the most accessible and comprehensive systems of higher education in the world, reaching one out of every six adult citizens in a state with a population of more than eight million people.

North Carolina has lost more than 100,000 manufacturing jobs. The National Science Foundation (NSF) reported that community colleges are the main source of postsecondary education for technicians (Boggs, 2010). This has led the NSF to improve the Advanced Technological Education (ATE) program that is specifically designed to have community college educators lead programs that utilize universities, secondary schools, and business to prepare and further develop the knowledge base of America's technological workforce. Newly trained technicians are being prepared to work in critical areas such as: information technology, telecommunications, cyber-security, and agriculture, environmental technology, biotechnology and many other technological fields. Because of their convenient location, open access, and low cost, community colleges tend to enroll students who are more socially, economically, and academically disadvantaged than do other postsecondary institutions. For example, nearly 30% of community college students are Black or Hispanic, as compared to 20% of students enrolled in four-year public and private postsecondary institutions (Horn & Nevill, 2006).

Community colleges can help individuals overcome some barriers to success in college, beginning with open enrollment policies. Community colleges have become "an

educational melting pot" due to open admissions and ease of accessibility (Office of Institutional Research of Metropolitan Community College n.d.) In 1997, 46% of all minority students who were enrolled in an institution of higher education were attending two-year colleges. In the same year, women made up 58% of the community college enrollments (Organization for Economic Cooperation and Development, 2010). We need to go beyond just ensuring access and look at retention, persistence, and completion for people to be successful.

Because of open enrollment policies, often coupled with low tuition rates, community colleges also enroll a relatively high level of "at-risk" students, such as students from some minority groups, with disabilities, from low-income families, or first-generation students whose parents never attended college. Students from these groups have above-normal risks of low grade point averages and of not completing college. Community colleges also enroll large numbers of non-traditional students whose retention rates tend to be lower than that of traditional students (Office of Institutional Research of Metropolitan Community College, n.d.).

Persistence

In higher education, retention and persistence are often used interchangeably, but the two terms do not define the same operational functions. Retention is more often used to denote an organizational function that focuses on institutional goals and objects of keeping students enrolled for consecutive semesters (The Community College Survey of Student Engagement, 2010) and assumes a student will graduate. Persistence is an individual phenomenon that focuses on students' reaching self-determined educational

goal attainment (Reason, 2009). Students may persist to a self-determined educational goal without being retained to completion.

College persistence rates at four-year institutions and community colleges are low. Only 57% of students who began college in 2001 had completed a bachelor's degree by 2007, and only 25% of community college students who started in 2005 had completed a degree four years later (National Center for Education Statistics, 2011). Only 36% of community college students obtain a degree 6 years after enrollment (Bailey, Leinbach, & Jenkins, 2006).

A review of the literature shows that the vast majority of research on student retention and persistence theories is based on Tinto's theory of student departure (1975, 1987) and Bean and Metzer (1985) model of student attrition. Both theories overemphasize the four-year institutions; and strongly rely on the importance of demographic characteristics and students' experiences on campus (Bailey, et al., 2005). Tinto's (1993) theory of student departure posits that persistence is a longitudinal process of interactions between students, faculty, staff, and peers in an academic and social setting, and focuses on students as they move from the end of their freshman year to the beginning of their sophomore year at the same institution. While students may enroll for a second or third year of college, students may decide to stop out or transfer at any time (mid-year or mid-semester) and that is a consideration for many community college students (Bailey and Leinbach, 2005). This definition of retention is often used to assess student engagement in four-year postsecondary education institutions (National Survey of Student Engagement, 2011).

Tinto's (1975) research sample was white middle-class residential college students, since the population of college students was much more homogenous than it is today (Bailey, et al., 2005). The research denotes the positive interactions and involvement in academic and social settings that lead to an understanding and assimilation to institutional characteristics. The model does not take into account the background characteristics of low-SES; working, dependent, nontraditional community college students and the effect of the surrounding environment may have on persistence. Students' departure decisions are made based on intentions and commitments that arise from the students' college experience. This interaction leads to the student's commitment to complete college, or persist.

Community college students are considered nontraditional because they are older; nonresidential; delay enrollment into postsecondary education; likely to possess a general education degree; are employed; and have dependents other than a spouse (Voorhees & Zhou, 2000; Zhai & Monzon, 2001). The theory of student departure is based on traditional college students, age 18-24, and thus has little applicability to the nontraditional student population (Horn & Carroll; 1996; Choy, 2002). The emphasis on integration assumes there is a single set of values and attitudes in an institution (Tierney, 1992). The model also excludes environmental pull factors such as, finances, family, etc.

Bean and Metzer (1985) model of student attrition is based on the nontraditional student population at both four and two-year institutions and accounts for external factors that are not controlled by the institution and affect the persistence of students (Bailey & Leinbach, 2005). The student attrition theory proposed that environmental variables not controlled by the institution had more of a significant relationship with academic

persistence than students' interaction or integration. Factors such as family obligations, hours of employment, financial challenges, and the opportunity to transfer directly affect students' intention to dropout or persist. Bean's theory has been validated on nontraditional students attending historically black colleges and universities, distance learners, and community college students (Sandiford & Jackson, 2003).

The two theories provides a comprehensive evaluation of the key factors that shape what students are prepared to do when they enter college and what happens after entry that effect persistence (Kuh et al., 2006). Persistence theories hypothesize that background demographics are important in student persistence because they affect how students engage, interact, and integrate into college environments (Bean, 1980, Tinto, 1987). In brief, persistence literature is based on nine factors, (a) institutional environmental factors, (b) student demographic characteristics, (c) commitment, (d) academic preparedness, (e) psychosocial and study skills, (f) integration and fit, (g) student finances, (h) intentions, and (i) environmental pull (Bean, 2005).

Defining persistence is dependent on institutional or student perspectives. Persistence may vary depending on context and whether intra-institutional movements are taken into consideration (Reason, 2009). From an institutional perspective, persistence can be defined as a student who is continuously enrolled at any institution, or continues enrollment by participating in any form of higher education under the jurisdiction of a state or national system (Tinto, 1982). For students, it may mean continuous enrollment at any institution of higher education, local, national, or international (Bailey, Leinbach, & Jenkins, 2006). Historically, transfer students are counted as non-persisters from an institutional perspective, but can also be considered

persistence if they transfer to another university within a state system (Adelman, 1999). In the sections below, the focus will be on four student demographic characteristics that appear to predict persistence. For the purpose of this study, persistence is defined as students enrolling in subsequent semesters.

Carnegie Classification of Rural Community Colleges

Rural can be defined by administrative boundaries, land-use patterns, economic influence, population density, surrounding areas, connecting areas, or population (Cromartie, 2008). The most prevalent method of defining rural is everything that is not already defined as urban or non-metro (Cromartie, 2008; Hardy & Katsinas, 2007). The Federal Government uses at least two dozen definitions of rural; however, places with populations greater than 50,000 are always considered urban while places with populations less than 2,500 are always considered rural (Cromartie, 2008). There is in fact a rural to urban continuum that allows places to be considered urban for some purposes and rural for others (Cromartie, 2008). Rural areas make up 85% of the land mass but only 15% of the country's population (Miller & Kissinger, 2007). Over 45 million Americans reside in rural areas. The rural population is characterized as underperforming in higher education degree attainment and has a higher poverty rate and fewer opportunities for advancement than their urban Americans (Miller & Kissinger, 2007).

The Carnegie Foundation for the Advancement of Teaching's 2005 Basic Classification provides multiple classifications for colleges offering the associate degree. Prior classification schemas aggregated all two-year colleges into a single category (Hardy & Katsinas, 2007). The 2005 Basic Classification divide associate degree

granting colleges into three major categories: publicly controlled, privately controlled, and special-use institutions. Under the privately controlled category are private, nonprofit junior colleges and proprietary institutions. Specialized two-year colleges such as hospital-based radiography and nursing programs are under the special-use category. The public category includes the subcategories of rural, suburban, and urban-serving colleges, as well as two-year colleges governed by four-year institutions. In the urban and suburban categories the institutions are subdivided into single and multi-campus districts.

In the rural category the institutions are divided by size into small, medium, and large rural colleges (Hardy & Katsinas, 2007). The Carnegie classification uses the suffix serving to its rural, suburban, and urban categories to reflect that many public community colleges are place-based institutions with geographic service delivery areas defined by state statute, regulation, or custom. Institutions are categorized according to the physical address they supply to the U.S. Department of Education and the Census Bureau (Hardy & Katsinas, 2007). Therefore, the physical location of the campus reflects that these institutions primarily serve students from urban, suburban, and rural areas (Carnegie Foundation for the Advancement of Teaching, 2006a), but it is recognized that these institutions also may serve populations in other geographic designations. The majority of rural community colleges are located in the north central and southern accrediting regions (Hardy & Katsinas, 2007). The Carnegie Classification for the community college selected for this research study is classified as a small rural two-year community college.

Small Rural Community Colleges

There is little research on persistence and completion rates of students at rural community colleges, even though there is an increase in the enrollment of nontraditional students, displaced workers, and those seeking to upgrade their work skills in hopes of finding a job in a distressed economy (Katsinas, Alexander, & Opp, 2003). The last comprehensive study of the persistence of rural community college students was conducted by Gibbs (1989). The research study used the National Longitudinal Survey of Youth to compare the college attendance and persistence rates of 12,000 rural and urban students. The findings indicated that rural students were less likely than urban students to attend college, and those that did attend college graduated at the same rate as urban students. The study was conducted at a large university in Iowa, thus does not address the issue of persistence of students attending a small rural community college.

One advantage of a rural community may be the close community relationship on campus and the often simplified organizational structure of the community college that helps students adjust to the college environment (Hardy & Katsinas, 2007). Community colleges serve a more diverse student population than four-year institutions and this is especially true for small rural community colleges (Katsinas, Mensel, Hagedorn, Friedel, & D'Amico, 2012). Small rural community colleges are often geographically isolated from urban centers, lack public transportation and often require students to travel long distances to attend class, and are more likely to experience fiscal strain (Roessler, 2006). The rural location limits social, cultural, and entertainment options, thus making the recruitment and retention of qualified faculty more difficult (Cejda, 2010; Hicks & Jones, 2011). Globalization and agribusiness contraction has caused rural America to adjust to farm closures, decreased labor markets, growing unemployment, outsourcing of

manufacturing jobs, and declining tax bases (Collins & Quark, 2006; Smith, 2008; Wood, 2010).

Policymakers are often unaware of the important role community colleges have in the educational, economic, and civic lives of rural communities. Community colleges' can change their missions in response to political, economic, and social agendas (Obama, 2009). The lack of resources to operate and address needed changes in the expanded roles of community colleges are obstacles in rural communities. Most community colleges are financed by a combination of state and local funding (Education Commission of the States, 2010). Local funding is usually directly dependent on the local tax base, which often equates to an inadequate allocation of funding for small rural areas. Some states, including North Carolina distribute funds based on student enrollment (Education Commission of the States, 2010). Small rural community colleges have smaller mean enrollments than their urban counterparts, and this usually result in decreased funding allocations.

Small rural community colleges are often the local employers' only training source for needed employers. They prepare students for the workforce, can provide on the job training through internships and/or cooperative education and offer transfer programs toward a four-year degree (Miller & Tuttle, 2007). The rural community college tends to maintain relationships with the local public school system(s) by partnering in dual enrollment, online coursework, summer programs, and literacy programs. These partnerships create a pipeline of potential students (Emery, 2008). The rural community college is responsive to the needs of the community and offers an open

access to postsecondary education to a diverse population of students who may not have had the opportunity (Smith, 2008).

Institutional Attachment

The classroom environment is essential for encouraging student interaction (Cundell & Pierce, 2009). One of the most important factors for the classroom environment is to have a small class size which will facilitate student interaction with each other. It is also important that students like and understand the instructor. In a survey of undergraduate science students at Philadelphia University conducted by Cundell and Pierce (2009), it was found that students' motivations for interaction differed according to gender and grade level. The study also indicated that seniors were more likely to interact with freshmen, while sophomores were least likely to interact within the classroom (Cundell & Pierce, 2009). The more academically and socially involved students are with an institution, the more likely they will persist with their academic studies (Office of Institutional Research of Metropolitan Community College, n.d.). Overall, the report indicated that academic integration is more important than social integration for students enrolled at two-year community colleges.

This may be because classrooms are typically the only place for social integration at community colleges. Academic integration should be strong in the classroom because students do not have access to as many social activities and groups as do students at four-year institutions. The report theorized that academic integration was exemplified in the analysis conducted at NVCC. First-time students who were program placed had higher retention rates than non-program placed students. Over 60% of the program placed

students returned to NVCC as compared to approximately 50% of the non-program placed students.

Among the students who were program placed, students enrolled in a program leading to an Associate in Science degree had the highest retention rate (65%). It can be seen that NVCC students who were academically integrated within a curriculum had higher retention rates than other students. As more researchers study learner persistence, more factors emerge that are thought to influence this most pertinent topic. For example, Tinto (1993) is one of the most recognized researchers in the area of learner persistence, and his research found that positive interaction with faculty members has a direct bearing on whether learners persist to earn a degree (Fike & Fike, 2008). Most of the research used as a framework investigating persistence and adult learners is commonly used to examine learner persistence in four-year institutions and, it is assumed to be unsuitable to two-year and commuter institutions (Karp et al., 2008).

In an effort to examine persistence of community college learners, research by Karp et al. (2008) and Deli-Amen (2011) contest the idea that Tinto's (1993) integration framework is not inapplicable to the study of persistence at community colleges. The researchers conducted interviews of first year learners at community colleges and found that academic and social integration are critical for community college learners. This research study will analyze how these three factors plus learner age relates to academic persistence. Based upon a systematic review of the literature, the learners' attachment/involvement will be analyzed as a mediating variable.

Students who possess certain precollege characteristics such as middle to high socioeconomic status, positive secondary school achievement, and strong family support

were more likely to persist and graduate (Tinto, 1997). The greater the amount of time a student participates in co-curricular and other activities in and out of the classroom, the more likely the student will persist in school (Astin, 1996). Frequent interaction with faculty was more strongly related to satisfaction than any other involvement (Astin, 1996); yet developmental, culturally and ethnically diverse students have rarely been shown to develop close relationships with their professors (Nora, Cabrera, Hagedorn, & Pascarella, 1996).

Because learning communities are believed to facilitate a students' integration to the campus community and directly involve students in their learning, this study is designed to investigate how social systems (such as peers, family, community groups) might influence students' experiences. Institutional attachment or loyalty to an institution is determined by the extent to which students are involved in social activities and groups on campus and the existence of interpersonal relationships (Tinto, 1993). The role of learner involvement in promoting positive educational outcomes for college learners is further discussed in Tinto's Student Integration Model (1993). The study emphasized the need to better understand the relationship between learner involvement/institutional attachment and the impact that involvement has on learner persistence.

Most researchers agree that Tinto's (1993) revision of his initial conceptual model includes a more detailed discussion of the interaction between behavior and perception by learners as they move toward greater involvement with their social and academic environments. The Interactionist Model of Student Behavior (Tinto, 1993) supports the role of learner involvement in promoting positive educational outcomes for college learners. Moreover, Tinto (1993) emphasizes the need to better understand the

relationship between learner involvement and persistence. Tinto's revision of his initial conceptual model developed in 1975 includes a more detailed discussion of the interaction between behavior and perception by learners as they move toward greater integration with their social and academic environments.

There is growing empirical literature on student pathways into and through higher education that uses both Tinto's and Bean's models as theoretical frameworks. Some studies have examined the movement of students across educational sectors such as high school to college, or community college to baccalaureate institution (Calcagno, Crosta, Bailey, & Jenkins, 2006). Others have looked at retention within particular levels of higher education, and still others have studied both (Adelman, 2006; Choy, 2002b).

All of these studies track cohorts of students over time and examine the point of disengagement where students drop out and seek to understand the determinants of success both for students and for particular groups. Most studies look only at two points in time. Researchers collect a set of relevant covariates associated with completion rates, such as gender, race/ethnicity, socioeconomic status, and institutional characteristics. After a given point in time to allow students to graduate, researchers again collect data to estimate the direct effect of these factors on some combination of relevant educational outcomes such as graduation, dropout, or persistence of college students (Calcagno et al., 2006).

Research shows that older students are more affected than traditional-age students by the need to balance work and family with school. The external pressures of everyday life outweigh the effects of social integration (Calcagno at el., 2006). Research has been conducted to identify the institutional characteristics that affect the success of community

college learners (Bailey et al., 2005). The characteristics identified were: (a) institution size, (b) the percentage of minority learners enrolled, (c) the percentage of part-time learners enrolled; (d) the percentage of part-time faculty; (e) the allocation of resources for instruction and learner services, and (f) the state in which the college is located. The findings showed that different community colleges enrolling similar types of learners may have significantly different completion and graduation rates.

The research also found that individual learner characteristics appear to have more impact on learner persistence and graduation than the institutional variables (Bailey et al., 2005). Student success at these institutions remains low. After six years of enrollment, only 45% of community college students earn a certificate or degree or transfer to a four-year institution (Bailey, Jenkins, & Leinbach, 2006). While 8% of students remain enrolled, 47% leave school without earning a credential.

Although these statistics include students who enter the community college with goals other than degree attainment or transfer, it is clear that many community college students do not persist toward an educational credential, despite considerable efforts by the institutions to support student progress. Demographic factors alone may not adequately explain the persistence rates of learners in community colleges. The measurement of institutional characteristics that affect learner persistence may be another factor worth investigating in the future.

It is impossible to give full attention to the number of theories related to learner persistence, but there are several steps that organizations must take in order to develop an effective retention program (Pascarella & Terenzini, 2005). First, any retention efforts by the organization should be institutionalized. Retention should be a priority at all levels.

Second, the office of institutional effectiveness should conduct ongoing research pertaining to student enrollment and persistence behavior. Third, the institution must research and determine the factors that correlate to student persistence, retention or withdrawal. Fourth, as retention efforts are developed, the implementation of the retention program must be verified. Fifth, the institution should evaluate the retention program and use the data to direct future efforts toward enhancing improvement. Lastly, the report emphasizes that it is important for organizations to realize that not all attrition is negative. Many students who enroll at community colleges intend to transfer to other institutions, in which case attrition is considered positive (Pascarella & Terenzini, 2005; Carter, 2006).

There are many factors that have been found to influence retention and to be strongly associated with student persistence (Office of Institutional Research of Metropolitan Community College, n.d.). These factors include initial student commitments, peer support, involvement in the institution's academic life, and frequency and quality of faculty-student interaction. A closer examination of these variables shows that their influence on student retention varies substantially among institutions. Practices that have increased student persistence at one institution cannot be automatically applied at other institutions. Higher education organizations need to analyze the specific qualities and characteristics of their own students. The most beneficial and effective retention programs are those that are developed over time and are based on coordinated activities of continuous research, evaluation, and policy development (Office of Institutional Research of Metropolitan Community College, n.d.; Pascarella & Terenzini, 2005).

There are three general levels of retention efforts that both institutions and students can employ: the student level, the institutional level, and the community level (Office of Institutional Research of Metropolitan Community College, n.d.). At the student level, students develop both academic and non-academic skills that they need for college. At the institutional level, teachers and administrators participate and incorporate behaviors that facilitate persistence and program completion. The community level incorporates businesses, which form partnerships with colleges in order to assist at-risk students. These partnerships can be internships, mentoring opportunities or on the job training programs.

Students attend community colleges for various reasons, not just to receive degrees (Bailey et al., 2005; Hernandez, 2010). Colleges should learn as much as possible about students so that programs can be created or modified to meet their needs. College application forms should be designed to collect data on the goals of students and their academic, social, economic, and family backgrounds. High schools should also provide information to community colleges. Obtaining information early can help students find the proper support systems and programs.

Many institutions have developed and integrated different tools to help improve student retention (Office of Institutional Research of Metropolitan Community College, n.d.). Orientation classes and programs are common retention devices. Orientation programs can provide students with vital information important for their academic socialization. A study conducted by Glass and Garrett (as reported in Office of Institutional Research of Metropolitan Community College, n.d.) found that at four community colleges in North Carolina, completing an orientation course (during the first

semester of enrollment) improved retention rates regardless of the gender, race, major, age, or employment status of the students. Peer and faculty mentoring programs have also been found to be effective retention strategies. Many mentoring programs focus on providing social and academic support.

Many higher education institutions use multiple strategies to increase student retention rates. Multiple strategies might include combining orientation programs, mentoring programs, and faculty training. Allegheny Community College proposed a multiple strategy to improve retention. Activities included establishing a women's center, conducting freshman seminars to promote relationships among students and faculty, creating college funded work-study programs for on-campus employment, beginning faculty development programs, and creating additional student organizations (Office of Institutional Research of Metropolitan Community College, n.d.)

Many colleges try to get freshman students involved in campus activities with the expectation that involving students in campus activities will increase persistence rates. Southwest Texas State University began a leadership program for Hispanic students (Office of Institutional Research of Metropolitan Community College, n. d.). The program targeted Hispanic students because they were leaving the university in higher proportions than other freshmen. The program consisted of Hispanic upperclassmen and Hispanic faculty members helping incoming freshmen adjust to college life. Since the program began, retention of Hispanic freshmen (from freshman to sophomore) increased from 58% in 1995 to 68% in 1997. Attrition is believed to be caused by an extremely complex interaction of a multitude of variables, not just academics (Bailey et. al., 2005).

When colleges try to attribute low retention rates to one variable, the effort usually fails (Bailey et al., 2004; Bailey & Alfonso, 2005; Bailey et al., 2005) The literature reveals that students at community colleges are four times more likely to leave school due to non-academic reasons than for academic reasons (Bailey & Alfonso, 2005). The challenge for community colleges is to increase the number of first-time students and returning students (re-enrollment) without establishing costly, labor-intensive programs.

Learning communities construct a shared, coherent educational experience and involve students both socially and intellectually in ways that promote intellectual development (Tinto, 1998). There is extensive research on learning communities, although much of that research is focused on four-year colleges (Bailey & Alfonso, 2005). In a study by Tinto (1997) it was found that students participating in a learning community increased persistence. Of all the retention and persistence practices studied by Bailey and Alfonso (2005), learning communities had the most empirical support for program effectiveness. The supportive atmosphere created by peer groups encouraged learning and gave students the opportunity to actively participate in their own learning.

The study by Cundell & Pierce, (2009) found that male students preferred for the instructors to ask leading questions, assign analytical homework, and require class participation; while female students were concerned with being made fun of by teachers and being asked to interact. Interaction and student involvement within the classroom are essential for academic stimulation (Bailey & Alfonso, 2005). Learning communities usually involve coordination of several classes. The typical community college student who works part-time may have difficulty participating. Community colleges are usually commuter institutions, thus making learning communities a mechanism for engaging with

students in a more intensive manner in the classroom (Braxton, Hirschy & McClendon, 2004). Nevertheless, research on community college learning community programs has generally been favorable and has a strong positive effect on educational outcomes (Pascarella & Terenzini, 2005).

Colleges need to recognize that simply having retention programs in place does not automatically increase student persistence levels. Programs must be delivered in a timely manner and with appropriate attitudes if retention programs are to succeed. Situational factors that affect persistence include role conflict, time management, family and work problems, economics, and logistics. Adults facing such circumstantial barriers need services that will enhance their academic adjustment by allowing them to concentrate on the student role, such as assistance with transportation and child care (Katsinas, Alexander, & Opps, 2003). Psychological influences include coping skills, self-confidence and self-image, anxiety about schooling based on prior experience, and beliefs or expectations about outcomes. Solutions might be communication of accurate, timely information stressing anticipated benefits and realistic expectations; special attention to advising and counseling; training advisors to deal with adults; basic skills assessment; developmental assessment (setting long- and short-term goals and reality testing); learning and study skills; placement testing; mentoring by successful adult students; peer support groups; and prioritizing life roles.

Age

A major research study conducted at Northern Virginia Community College (NVCC) reported that retention and persistence patterns vary according to the age of the student (Northern Virginia community College, A.H., 2001). Compared to younger

students, adult students differ in their primary goals of attending a college or university. Retention definitions should reflect the various goals of students according to their age and purpose of enrollment. Research findings have shown that adult student persistence is affected by factors such as time management, family and work needs, and logistics (Northern Virginia Community College, A. H., 2001). These factors may have less influence on retention rates for younger students.

Students in community colleges are usually older or nontraditional (Bailey, et al., 2005). Studies have found a negative relationship between age and community college persistence, indicating increases in age were associated with significantly reduced persistence rates (Brooks-Leonard, 1991; Hagedorn, Maxwell, & Hampton, 2002; Lanni, 1997; Windham, 1995). However, (Porchea, Allen, Robbins, & Phelps, 2010) conducted a study with 21 community colleges and found that older students were more likely to obtain a two-year degree than younger students.

Retention for adult students should be defined as achieving their stated objectives, which may or may not include obtaining a degree (Office of Institutional Research of Metropolitan Community College, n.d.). Data gathered from the NVCC Non-Returning Student Survey reflected differences in retention according to student age. For respondents between 18 to 24 years of age, the most important reason for not returning was directly attributable to finances. However, older nontraditional students (between 25 to 44 years of age), may have conflicts with employment and family/personal circumstances which limits time allocated to their educational pursuits and may lead to non-persistence (Jacobs & Berkowitz-King, 2002). It appears that as the student's age

increased, financial issues decreased, but family or personal barriers increased (Office of Institutional Research of Metropolitan Community College, n.d.).

Programmatic activities and efforts to improve retention and persistence rates should consider that obstacles in attending college could differ based upon the age of the student (Northern Virginia Community College., A. H., 2001). When retention rates were analyzed for three cohorts of NVCC first-time students, differences also emerged according to age. Students 21 years of age and younger had retention rates of approximately 66% (Northern Virginia Community College., A. H., 2001). This compares to students 45 years of age and older who had retention rates of 40%. Again, older students may have had barriers to their education that did not exist for younger students.

No longer is the financially dependent, 18-year-old high school graduate who enrolls full time the "typical college student." More than half of postsecondary students are financially independent; more than half attend school part time; almost 40% work full time; 27% have children (NCES 2005). More adults are considering ways to upgrade and expand their skills in an effort to improve or protect their economic position. Adults are choosing credential or degree-granting programs in colleges and universities. However, higher education institutions—two and four-year, public and private—are not adequately serving adult learners. The traditional structure and organization of higher education pose significant barriers to access and, particularly, to persistence and success.

This research study analyzed relationships for more information regarding the state of the rural community college. Traditional higher education institutions can do a better job of serving adults. Large numbers of adults—over seven million individuals

over 25 years of age—are enrolling in both two- and four-year institutions (Office of Institutional Research of Metropolitan Community College, n.d.). However, there is a mismatch between adult learners' needs and the organization, funding, and accountability systems in higher education. This situation must be addressed if adult learners are to routinely find higher education institutions responsive and effective.

There is growing national concern about the effectiveness of community colleges that enroll the majority of learners seeking opportunities to upgrade their skills or change careers (Horn & Nevill, 2006). Women are more likely than men to enroll in college later in life, and success in higher education is affected by the age at which a learner enters college (Goldrick-Rab, 2007). Learners who delay enrolling in college are more likely to attend a public two-year institution and focus on vocational training and short-term programs. A study by Horn, Cataldi, and Sikora (2005) found that over 50% of learners who delay enrollment wait at least five years or more before enrolling in college. Older learners are more likely to arrange work and family with their educational goals and are more likely to enroll in school on a part-time basis (Goldrick-Rab, 2007). It has been found that for older learners, supportive family environment appeared to be critical for persistence (Kuh, Kinzie, Buckley, Bridges & Hayek, 2006).

Most community college learners are age 24 or older and are considered to be nontraditional. A learner is defined as highly nontraditional if they have four or more of the following characteristics: (a) delayed enrollment into college, (b) enrolled part-time in less than 12 credit hours, (c) financially independent, (d) work more than 35 hours per week, (e) have dependents other than a spouse, (f) single parent, and (g) did not graduate from high school (Jinkens, 2009). Many community college learners may not be

interested in earning a degree. Learners in their 30s or older are usually enrolled in associate degree programs and are the majority in certificate programs (Spellman, 2007).

Numerous studies conducted on community college learners have demonstrated that persistence may vary by age, but it is also important to acknowledge additional variables that may interact with age and confound the results (Owens, 2003, St. John, Hu, Simmons, & Musoba, 2001). Further findings by Owens (2003) indicated a significant relationship between age and grade point average (GPA). A learner's age may also have significant influence on academic goal achievement and coping styles (Brooks, May, & Morris, 2003). The study found that as age increased, the use of learning goals increased compared to the use of performance goals, and the coping style of the learner also changed.

Nontraditional learners tend to have more competing priorities than traditional learners (Jinkens, 2009). They may be employed, married, or have dependent children. Because of these competing roles, nontraditional learners are more likely to enroll part-time, take longer to complete their educational goals, and therefore have a higher rate of attrition than traditional learners (Goldrick-Rab, 2007). In a study by Jacobs and King (2002) it was found that women over the age of 25 who experienced life changing events such as marriage, divorce, or childbirth did not persist because of the life changing event, not because of age (Jacobs & King, 2002). Research conducted by Blecher, Michael, and Hagedorn (2002) concluded that age did not affect academic persistence.

Retention theories may be relevant for all postsecondary learners, but it is important to recognize that community college learners possess different characteristics than the four-year institution learner. These characteristics are unique and impact the

performance measures of community colleges. Because community colleges enroll large numbers of nontraditional learners, age is a variable that will be studied in the research study.

Race

The United States was initially established based upon diversity and the right to be different, but by 2050 Caucasians will no longer represent the majority of Americans (Lovett, Jones, Hollier & Blankenship, 2010). This shift in demographics will require colleges and universities to address the needs of diverse students. Community colleges provide access to higher education to the most diversified student body populations in history (Boggs, 2010). Diversity demographics are featured prominently in this study for empirical examination. Diversity falls along the lines of age, ethnicity/race, and socioeconomic status (Boggs, 2010). The critical variable impacting learner persistence reported by Wells (2008) was race of the learner. Even though there has been an increase in the number of minorities enrolling in higher education institutions, African Americans continue to enroll in lower numbers (Aud, Fox, & Kewal, Ramani, 2010).

A study conducted by Bailey et al. (2005), found that a larger percentage of minority learners (African American, Hispanic, and Native American) enrolled at an institution is associated with lower graduation rates. The low graduation rates at those institutions is lower, not because minorities are less likely to graduate and therefore lower the graduation rates, but because all learners tend to graduate at lower rates when they attend high minority colleges (Bailey et al., 2005). Underrepresented populations have lower odds of completing high school and enrolling in college (Arum, Roksa, & Cho, 2005). Underrepresented learners usually choose to attend community colleges because

of the open door policy of admittance. Nationally, 47% of African Americans, 56% of Hispanics, and 57% of Native Americans enroll in community colleges as their choice of access to higher education (Spellman, 2007).

The low success rate among community college learners is due to many factors. One factor gaining attention is the high ratio of minority learners requiring developmental coursework and community colleges' struggles of providing remedial education. Only 21% of African American high school graduates, 33% of Hispanics, and 33% of learners from families with annual incomes below $30,000 have college-level reading skills (ACT 2006). The high school completion rates of African Americans (77%) and Latinos (57%) trailed Whites (82%). Latino and African American college participation rates were equal at 35%; whereas, the White participation rate was 43%. The educational attainment in the United States could actually decline over the next 15 years if institutions of higher education are unable to close the gap between education levels of Whites and other racial and ethnic populations (Arum, et al., 2005).

Gender, race, and ethnicity differences in college participation and completion are more pronounced when examined by SES. Difficulty in persisting due to financial strain was found to be an effect of financial independence of nontraditional minority students ((Kantrowitz, 2011). White upper and middleclass men achieved similar academic attainment as women of similar race and SES (King, 2000). Also, all low SES high school graduating men regardless of race were less likely to immediately enroll in postsecondary education (White males 25% vs. females 35%, African American males 32% vs. females 51%, Hispanic males 45% vs. females 51%, and Asian American males 59% vs. females 75%) (Kuh, et al., 2006).

There is a real gap between ethnic minorities and ethnic majorities in the attainment of higher education. Racial or ethnic minorities have a stronger probability of leaving postsecondary education than ethnic majority students (Carter, 2006). The gap between underrepresented minority students and other groups is particularly detrimental because of its impact on the long term social mobility of these students. There was a strong relationship between SES and student persistence in college (Carter, 2006). The report found that attending state universities, private colleges, and research universities was consistently and positively associated with persistence as compared to their enrollment in two year community or junior colleges. Nationally, only 20% of undergraduate students conform to the traditional stereotype of a recent high school graduate enrolled as a full-time residential student. More "nontraditional" students are the norm including students who are older, work full-time, take classes part-time, or have children.

The 72% national increase in undergraduate students over the past 35 years has been caused primarily by an influx of nontraditional students, with community colleges chosen as their most common educational path (Carter, 2006). The more nontraditional a student, the more likely they are to attend a community college, with 64% of highly nontraditional students attending a community college (Carter, 2006). At the same time that nontraditional community college undergraduates are filtering into postsecondary ranks, African American males are vanishing. In the 2006–2007 academic year, there were only 16,885 African American male community college degree students in North Carolina (Ainsworth-Darnell & Downey, 1998; Kao & Tienda, 1998; Tyson, Darity, & Castellino, 2005).

Seminal work by Fordham and Ogbu (1986) posited that African Americans have formed an oppositional culture, stemming from the oppression, enslavement, and discrimination they have experienced in America. This culture provokes some African Americans to persuade their peers to devalue academic success because of the association of "acting white." Research by Lundy (2003) reports that African Americans indoctrinated with this ideology of "acting White" view academically inclined African Americans as abandoning their Black cultural identity, and rejecting the norms of their peers as well as the peer group itself. The job ceiling which may discourage some African Americans from working hard to excel in school precludes minorities from attaining employment and financial status compared to their White counterparts with comparable academic credentials (Fordham & Ogbu, 1986).

Research also asserts that this assumption is more applicable to African American males than their female counterparts (Fordham & Ogbu, 1986; Lundy, 2003, 2005; Major & Billson, 1992; Noguera, 2003). Davis (2003) reports that African American males tend to perform poorly academically because they perceive schooling as contradictory to their masculinity (Davis, 2003). Other researchers explained that discrimination is another factor hindering Black males from advancing through the educational pipeline (Robinson, 2000; West, 2001). Specifically, Hale (2001) noted that by sending Blacks to inferior schools, resulting in inferior skills, White America maintains the oppression of Blacks. Hale (2001) believed that under the appearance of freedom and opportunity, Blacks are blamed for their own plight. Racism is actually the foundation preventing Blacks from achieving educational parity with their White counterparts (Palmer, Davis, & Hilton, 2009).

The media contributes to the problems that African American males experience in education, and contributes to their inability to receive a high school diploma (Jackson & Moore, 2006). At an early age, African American males are exposed to negative images through the mass media. This exposure has attributed to their academic disengagement (Jackson & Moore, 2006; Palmer & Hilton, 2008). Mass media rarely focuses on positive accomplishments of African American males. Instead, they commonly use their public platform to perpetuate and instigate negative stereotypical depictions of African Americans (Madison-Colmore & Moore, 2002; Moore, 2000). Consequently, African American males are victimized by these images (Jackson & Moore, 2006).

The effects of African American males' reluctance to finish school can be seen in high rates of illiteracy and unemployment (Hale, 2001; Majors & Billson, 1992). Educational systems fail to impart or inspire learning in African American males of all ages. Many African American males graduate from high schools reading and writing on a third or fourth grade level and it is estimated that approximately 44% of African American males are functionally illiterate (Organization for Economic Cooperation and Development, 2010).

African American males with lower educational attainment are predisposed to inferior employment prospects, low wages, poor health, and are more likely to be in the criminal justice system (Harvey, 2008; Levin, Belfield, Muennig & Rouse, 2007). This loss of human capital further decreases the competitiveness of America in the global and knowledge-based economy.

The educational problems and issues that African American males experience in elementary and secondary schools are not endemic to those educational settings. Similar

trends can be noted in postsecondary education. Although the number of African American males entering higher education (e.g., 2-year or 4-year institutions) increased substantially during the late 1960s and again during the 1980s and 1990s; African American males continue to lag behind their female and White male counterparts with respect to college participation, retention, and degree completion rates (Noguera, 2003; Polite & Davis, 1999). In 2000, Levin et al. (2007) noted that African American males between the ages of 26-30 on average had 0.72 fewer years of education than their White male counterparts.

African American men account for 4.3% of the total enrollment at four-year higher education institutions in the U.S., the same rate as it was in 1976 (Harper, 2006; Strayhorn, 2010). Of the African American men enrolling in college, many encounter significant challenges attaining their degrees (Harper, 2006). Research has shown that more than two thirds (67%) of Black men who start college do not graduate within six years (Harper, 2006, p. vii). The issues of college enrollment and completion for African Americans have caused major concern among stakeholders in higher education, particularly after the turn of the twenty-first century (Jackson & Moore, 2006).

While research has shown a relationship between educational attainment and income (Bush & Bush, 2005; Jackson & Moore, 2006), African American males enrollment and persistence rates in higher education are dismal compared to other groups, most notably their female counterparts (Cross & Slater, 2000; Jackson & Moore, 2006). Out of the 73% of African American males who graduated from high school in 2000 compared to 79.7% for African American females, only 33.8% of African American males enrolled in college compared to 43.9% of their female counterparts (Harvey,

2008). Data from the Journal of Blacks in Higher Education (2008), reiterated this gender disparity by noting that in 2006, African American females earned 94,341 bachelor's degrees compared to 48,079 awarded to African American males. This gender disparity is not endemic to African Americans. Surprisingly, gender disparities are most pronounced among Blacks (Cuyjet, 2006; Jackson et al., in press; Strayhorn, 2010).

African American males are beset by problems in education, which emerge in elementary school and continue to deepen through higher education. Consequently, African American females outnumber their male counterparts in higher education with respect to college attendance and graduation. There have been various theories attempting to provide an understanding regarding African American males' intellectual disengagement. High rates of unemployment, illiteracy, and lack of preparedness are some of the manifestations of the educational disengagement of African American males found within the research that indicate low participation within the global economy (Levin et al, 2007). This is human capital that the U.S. can no longer afford to disregard.

Gender

Gender inequities exist in the college pipeline. Women are enrolling in college at higher rates than men, but men are more likely to begin at a community college (Goldrick-Rab, 2007). Females are more likely to enroll in college immediately after graduating high school than males (Carbonaro, Ellison, and Covay, 2011). Admittance rates to college are almost identical for females and males, but females are more likely to plan to attend college than males (Carbonaro, et al., 2011). Women persist at a greater rate than males, but males are more likely than females to transfer to a four-year

institution. Women who transfer to a four-year institution are more likely to complete a degree than men (Carbonaro, et al., 2011).

The number of male and female undergraduates was roughly equal from 1900 to 1930. As a result of the GI Bill, male enrollments jumped dramatically following World War II so that by 1947, men outnumbered women 2.3 to 1 (Goldin et al., 2006). The increase in women enrolling and persisting in higher education has not been equal between high-income women and low-income women. Low-income women encounter additional challenges to academic success in community colleges (Goldrick-Rab, 2007).

Until the 1970s, there was not a strong expectation that women would attend college or seek employment in the professional world. Women are usually more associated with childcare and household duties; whereas men are expected to provide financial support for the family (World Health Organization, 2011). Since then, most women have chosen to enter, or been forced by circumstances into a workforce in which some type of postsecondary education is increasingly necessary.

Under the Aid to Families with Dependent Children Program (AFDC), many welfare recipients receive free tuition or tuition assistance and child care benefits so they can attend college. The 1996 Personal Responsibility Work Opportunity and Reconciliation Act (PRWORA) placed low-income women and men directly into the workforce, thus declining the number of low-income women allowed access to college (Shaw, Goldrick-Rab, Mazzeo, & Jacobs, 2006). The Workforce Investment Act (WIA) also decreased access to job training. Federal welfare reform and WIA reduced the incentives for community colleges to develop programs for low-income adults, thus making it harder for the poorest adults to afford a college education (Goldrick-Rab,

2007). The number one factor for withdrawing from college as cited by both males and females were personal reasons (Scoggin & Styron, 2006).

A major factor contributing to more women than men enrolling in college is the determinants of college-going high school grades, test scores, and college preparatory coursework (Goldin, et al., 2006). Women made especially remarkable gains since 1972 in terms of achievement test scores (widening their advantage in reading and narrowing the gap in mathematics) and in taking high school mathematics and science courses. A research study to ascertain the relationships to college degrees in science classes was conducted at a public college in New York by DiBenedetto and Bembenutty (2013), indicated that the interaction between female students and mothers' level of education were significant; and there were some correlations that indicated that both fathers' and mothers' educational level were highly significant. These factors, coupled with changing societal attitudes toward the role of women in the workplace and marriage and relatively greater economic benefits of college for females, appear to contribute to the larger number of women attending college.

Women have earned the majority of associate degrees since the mid-1970s (King, 2000). This can be attributed to the fact that 58% of community college students are women. The gender gap is shaped by the large number of older women attending community colleges and the disproportionate enrollment and academic achievement of African-American and Hispanic women (King, 2000). A study by Lohfink and Paulsen (2005) found that female students, as well as Hispanic students, were at a greater risk of failing to persist, particularly between the first and second years of college.

Across all racial/ethnic groups, there has been more progress made by women obtaining postsecondary degrees as compared to men (Palmer, Davis, and Hilton, 2009). This difference is greatly pronounced in the African-American community. In 2004, black females received twice as many associates, bachelors, and master degrees than did black males (Palmer, et al., 2009). One of the reason stated for this occurrence is that black males view being educated or obtaining academic excellence to be associated with being soft and acting White (Wood & Turner, 2011). In contrast, black males reported to associate manhood with the opposite portrayal of not caring about education – but instead about getting money. Here, education as a means toward financial success is seen as the White man way of obtaining financial independence (Wood & Turner, 2011). The greater high school dropout/non-completion rates among African American and Hispanic males as compared with their similar race female counterparts may also contribute to this phenomenon (O'Connor, Hammack, & Scott, 2010).

There is a similar gender disparity when investigating college predisposition among ethnically and racially similar eighth graders who attended high-minority, low-income schools. African American females were significantly more likely to earn higher grades, which affected parental expectations for college and directly influenced students' college predisposition (Hamrick & Stage, 2004). Likewise, white females were more likely to have parents who expected their child to attend college, which was the strongest predictor among white eighth graders' predisposition to college (Hamrick & Stage, 2004).

Not all researchers agree with the notion of fear of "acting white" as being the prominent state of affairs for black boys and men. Black males are no less involved with

school than their white peers. Instead, it can be argued that black men have a desire to go to college and that they do spend time on their homework. Low-income students are entering postsecondary education at record-high rates (Goldrick-Rab & Roksa 2008). In 2008, low-income young adults accounted for 44% of all U.S. young adults. Of young adults in poverty, one in four had earned a high school diploma or its equivalent while 18% left high school without attaining a credential. Yet, despite being in poverty, a substantial proportion of young adults, more than half sought some form of postsecondary education.

Young women and those from racial/ethnic minorities are disproportionately more likely to experience deep poverty (Cawthorne, 2010). In 2008, blacks and Native Americans were more likely to be from families living in deep poverty (35% and 34%, respectively) than their counterparts from other race/ethnicities (Cawthorne, 2010). One quarter of the remaining racial/ethnic groups lived in deep poverty. The percentage of young adults living in near poverty was markedly lower for Asians and Whites (14% and 15%, respectively) compared to blacks, Hispanics, and Native americans (between 23% and 26%). Lastly, among young adults, females were more likely to be living in poverty and, in particular, deep poverty than their male counterparts. White students from low-income backgrounds were twice as likely as their Black, Hispanic, and Native American counterparts to attain a postsecondary credential but remain poor (Cawthorne, 2010). Most strikingly, the percentage of low-income young adults earning postsecondary degrees has stayed the same over the decade.

Financial Aid

There are many barriers to college success, but a major obstacle is cost. The community college mission to serve rural and poor residents with a quality education was recognized by the United States Department of Education and Senator Claiborne Pell from Rhode Island (U. S. Department of Education, 2011). The Basic Educational Opportunity Grant was created with governance and regulation by the Higher Education Act of 1965, and was named the "Pell Grant" Senator Pell's honor. To promote access to postsecondary education the Federal Pell Grant Program provides need-based grants to low-income undergraduate students (U. S. Department of Education, 2011).

The financial aid process begins with the Free Application for Federal Student Aid (FAFSA). The U. S. Department of Education determines financial need from information gathered from the FAFSA, and the determination for aid can then be calculated from the expected family contribution (EFC) to the student's education costs. As a student's EFC increases, (the more a family can contribute toward the cost of education) the award amount decreases. For the academic year 2010-2011 the maximum Pell Grant for an EFC of zero was $5,500 for the year, or equivalent of two full-time semesters. Full-time is considered 12 credit hours (U. S. Department of Education, 2011). Other factors used to determine the amount of aid to be distributed are income, family size, cost of enrollment, and the number of credits a student anticipates taking, which determines full-time or part-time status (U. S. Department of Education, 2011)

Students must also have earned a high school diploma or GED, be a U. S. citizen or an eligible non-citizen, and show the skills needed to succeed within one of the approved colleges or vocational schools (U. S. Department of Education, 2011). The Pell

Grant is available to students seeking their first bachelor's or professional degree. In addition, many states, including North Carolina, use the FAFSA information to award scholarships and school-related financial aid (Student Financial Aid Services, 2010). Students' financial eligibility for Pell Grants, determined by Federal Financial Aid guidelines and other eligibility requirements under Title IV in the Higher Education Act are:

- The student is officially seeking a degree, has declared a major or stated that a major is "undeclared" or is in a degree program
- The eligible program must be for college credit
- The student has a high school diploma or a GED certificate or passes an alternatively defined ability-to-benefit test
- The student is making satisfactory academic progress, earning appropriate grades or progressing through the program at a rate of at least 150% of the program's length

The financial aid system was designed with the idea of determining the need of recent high school graduates who are dependent on their parents and attend college full-time (Bettinger, Long, Oreopoulos & Sanbonmatsu, 2009). However, there is often a difference between how the financial aid system was designed and the characteristics of a typical community college student (Bettinger et al., 2009). Community college students are much more diverse and most are considered nontraditional. A student is nontraditional if they fit at least one of the following; delays enrollment after high school, does not have a regular high school diploma (GED, or other certificate), attends part-time, works full-time while enrolled, is a

displaced worker, or unemployed, considered financially independent, is a welfare recipient, or has dependents other than a spouse, or is an immigrant (Bettinger et al., 2009).

The criteria used to qualify students for financial aid can also penalize many community college students. There are many college programs that require students to be enrolled at least part-time or full-time. Community college students often attend less than half-time and therefore will be disqualified for aid (Bettinger et al., 2009). They are also less likely to be enrolled in a degree program and more likely to pursue a particular skill (to gain employment) without the goal of completing a degree, certificate, or credential (Bettinger et al., 2009).

The type of the financial aid package, race, and student SES (income) may have an impact on the persistence rates of college students (Chen, 2008). In a study of four- year and community college students who received financial aid, there was a statistically significant relationship with persistence (Pascarella & Terenzini, 2005). A study by Dowd and Coury (2006) found that when community college students were granted student loans, in conjunction with need-based grants and work study, there was a negative effect on persistence. The findings continued to postulate that minority students and underprepared students were opposed to student borrowing. Middle-income students were found as the population to most likely to rely on student loans and found that academic preparation and performance were also variables with the receipt of financial aid as a predictor of persistence (Herzog, 2005). In general, financial aid is associated with higher persistence rates (The Pell Institute, 2004).

Socioeconomic Status

Socio-economic status (SES) is another factor that impacts learner persistence. The terms socioeconomic status and social class are often used interchangeably in the literature. In general, when referred to in the literature, socioeconomic status (SES) is used to denote various objective indicators of economic capital such as person's income, education and occupation (Krieger, Williams, & Moss, 1997). Typically, socioeconomic status is measured by a person's annual income, level of educational attainment and the type of occupation they hold. A person's SES is usually referred to as one of the following, low-SES, or working-class (SES), middle-SES or middle-class, high SES or upper class. Researchers recognize the negative effects SES may have on persistence when studying educational outcomes (Fike & Fike, 2008; Goldrick-Rab, 2007; Kolesnikov, 2009). Research has found that lower levels of SES are associated with lower levels of academic achievement (Toutkoushian & Curtis, 2005).

Closely linked to SES is the ability for students to pay for their education. Research conducted by Seppanen (2007) clearly indicates that a student's ability to pay for college is directly linked to persistence and success. It is both reasonable and valid that having to worry about how to pay for books, gas for the car, and how to pay for the next semester or quarter could reasonably impede a student's academic momentum.

Research on low-income college students has primarily focused on inequality in college choice (Trusty & Niles, 2004), access to college (ACSFA, 2001; Terenzini, Cabrera, & Bernal, 2001), financing of college (King, 2005) graduation rates (King, 2005; Terenzini et al., 2001) and attendance in graduate and professional programs (Walpole, 2003). Although some research report concerns about persistence to degree

completion for low-SES students, little research has been directed toward investigating possible factors contributing to lower graduation rates of these students. Similarly, a limited number of investigations have examined the experiences and adjustment of low-income college students.

The profile of typical community college students is a person with a full or part-time job, living off campus, usually first generation, older, attending part-time, and does not enroll in college immediately after high school. First generation college learners' possess many of these risk factors and therefore, the persistence rates are lower than those of second generation college learners (Wells, 2009). Approximately one-fourth of community college students come from families earning 125% or less of the federal poverty level, as compared to one-fifth of four-year college students (Horn & Nevill, 2006). Entering freshman at community colleges are more likely to need to take at least one remedial course than are their peers at four-year colleges, and are likely to need to spend a longer time taking such courses (US Department of Education, 2004).

Community colleges enroll the largest number of low-income and first generation learners and poverty rates tend to be higher in many rural areas (Katsinas, Alexander, & Opps, 2003). Lower income l earners and those whose parents have less education are underrepresented in four-year institutions and overrepresented in two-year colleges (Bailey, Jenkins, & Leinbach, 2005). The research utilized two categories, family income and parental education for all first-time postsecondary learners in 1995-1996.

The research indicated that learners in the lowest SES quartile were less likely to earn a credential or transfer to a four-year institution, and the results were contributed to the typical community college learner characteristics of first-generation learners,

inconsistent enrollment, work and family obligations, and age. Lower SES learners are continually at a disadvantage as compared to their higher-SES peers (American Psychological Association Task Force, 2007). Low-income learners often possess one or more of the following characteristics that lead to low completion rates; first-generation college learners' parents do not possess the educational background to assist in navigating the college system, the learner often must work full or part-time, have children and spouse obligations, and goals are not identified. Data also suggests that low-income, young African-American males are more likely than their peers to leave high school unprepared to enter college. This may be attributed to choosing a vocational track versus a college preparatory track in high school (King, 2000).

In 2008, 47% of all low-income young adults were or had been enrolled in postsecondary education (U.S. Census Bureau, 2008a). However, low-income young adults in postsecondary education face greater academic and financial risks than their more well-off peers (Cunningham & Santiago, 2008; The Pell Institute, 2004), which can delay their progress towards a degree (Engle & Tinto, 2008). Further research shows that low-income adults are more likely to attend postsecondary institutions that do not lead to occupations commonly associated with increased earnings (Astin & Oseguera, 2004; Mortenson, 2005).

In 2008 low-income young adults accounted for approximately 44% of all U.S. young adults (Institute for Higher Education Policy, 2010). Of young adults in poverty, one in four had earned a high school diploma or its equivalent even though 18% left high school without attaining any relevant credentials. Despite being in poverty, more than

one-half sought some form of postsecondary education (Institute for Higher Education Policy, 2010).

A learner's SES was the second most powerful indicator of college retention/persistence (ACT, 2004c). Consistent with that report, Walpole's (2003) study showed that low SES learners had lower educational attainment levels than otherwise similar high SES peers after beginning postsecondary education. Low-income learners are more likely than middle- and upper-income learners to attend institutions that offer programs of study that can be completed in two years or less (King, 2005).

The challenges to achieving educational attainment are more likely to be experienced by low-income students (Bailey & Morest, 2006; Conley 2005). In a study of 600 young adults who had a least some college credits, nearly 6 in 10 students who did not complete their degrees reported having to pay the full financial cost of their education rather than being able to rely on their families (Burns, 2010). Students in the lowest socioeconomic status quartile were less likely to earn a credential or transfer to a baccalaureate institution (Bailey, Jenkins & Leinbach, 2005).

Summary

The role of the community college has expanded both as institutions to obtain an associate's degree and as an affordable beginning toward a four-year degree (Wells, 2008). During hard economic times community colleges serve as a conduit to better economic stability. As more attention is given to accountability in higher education, community colleges are challenged with maintaining their commitment to access while increasing learner success, particularly the success of learners from minority and lower-income populations (Wells, 2008). Community colleges enroll a disproportionate

number of first-generation learners, low-income learners, learners of color, as well as more than half of first-time undergraduates from the lowest two SES quartiles (Bailey et al., 2005).

Gender, race, and socio economic status (SES) were found to be highly correlated with learner persistence (Reason, 2009). Although a plethora of studies have been conducted on student persistence, very few have been focused on rural community colleges. In fact, there is dearth of empirical research that focuses on how race, SES, gender, age and institutional attachment affect community college student persistence. As a result, this dissertation proposal will feature some research that has been extrapolated from research that was conducted at four year institutions. When relevant, the distinction will be made as our need to generalize some of the research findings from four year institutions to two year community colleges.

The research study was designed to measure how age, race, gender, and SES impact community college learners' persistence. Each of these factors was selected for empirical examination because of their prominence at the local community college chosen for the study and the important role they played in previous research. Based upon the research methodology employed in the research study, findings may be generalized to other localities with similar learner demographics.

This literature review addressed the problem of learner persistence and five of the major variables associated with it. It is not an exhaustive examination of the numerous variables associated with the problem. A systematic review of the literature shows a number of factors could influence whether a learner elects to persevere until the point of

graduation or elect to discontinue their education due to economic hardship or another relevant variable.

Chapter 3: Research Method

The purpose of this quantitative study was to contribute empirical research findings regarding how the relationship of the independent variables of age, race, gender, and socioeconomic status (SES) on persistence in a rural community college in northeastern North Carolina. The correlational design is appropriate for this study to collect data on the four variables then determine the correlation coefficients between the independent variables and the dependent variable (Gall, Gall, Borg, 2007). The primary research focused on the following research questions and hypothesis:

Q1. What is the relationship between students' ages and persistence from first semester to second semester in a community college in rural northeastern North Carolina?

Q2. What is the relationship between students' race and persistence from first semester to second semester in a community college in rural northeastern North Carolina?

Q3. What is the relationship between students' gender and persistence from first semester to second semester in a community college in rural northeastern North Carolina?

Q4. What is the relationship between students' SES (income) and persistence from first semester to second semester in a community college in rural northeastern North Carolina?

Hypotheses

H1o Age has no statistically significant relationship with students' persistence from first semester to second semester.

H1a There is a significant relationship between age and college student persistence from first semester to second semester.

H2o Race has no statistically significant relationship on students' persistence from first semester to second semester.

H2a There is a significant relationship between race and college student persistence from first semester to second semester.

H3o Gender has no statistically significant relationship on students' persistence from first semester to second semester.

H3a There is a significant relationship between gender and college student persistence from first semester to second semester.

H4o SES (income) has no statistically significant relationship on students' persistence from first semester to second semester.

H4a There is a significant relationship between SES (income) and college student persistence from first semester to second semester.

Chapter three incorporates details of the research method and design; explanation of participant selection in the study; and information about data collection, process, and analysis. The chapter also includes methodological assumptions, limitations, and delimitations and ethical assurances in regards to this research study. The information in this chapter outlines the plans for the research study in as much detail as available for the research phase and will be readjusted as needed during the actual data collection and analysis phase.

Research Methods and Design(s)

The purpose of this study was to use a quantitative method approach to measure the relationship of (age, race, gender, and SES) on learner persistence (Brannen, 2009; Hammersley, 2008; & Luyt, 2011). The study examined what, if any relationship exists between age, race, gender, and SES on the persistence of first-time, full and part-time, community college students enrolled in an associate's degree level or credential granting program of study. The study used both descriptive and inferential methods to measure the degree of association between factors supporting persistence. Creswell (2009) asserts that descriptive statistics present information that helps examine information within a database and determine overall trends as well as the distribution of data. A frequency distribution was constructed to describe the student characteristics within the cohort of students.

The frequency distribution used binary logistic regression to evaluate the existence, direction and strength of the relationship between each of the independent variables and the dependent variable, persistence. The basic design involved collecting data from the community college's enrollment database. The data was retrieved with the assistance of the college's Institutional Effectiveness Office. In order to gather the data necessary, a number of database searches and queries were necessary. Data was based on a cohort of first-time, full and part-time students that started at this community college in the fall of 2009. Selection of this cohort allowed for an appropriate amount of time for student progression and the application of logistic regression.

To describe the relationship between a dependent variable and one or more independent variables, statistical regression methods are used. The method of data

analysis that was used in this study was binary logistic regression. According to Schutt (2004) logistic regression is an appropriate method when the outcome variable is dichotomous. In this research study, a student would either persist from semester to semester or would not. The outcome was dichotomous: either yes or no (coded as 0 or 1). Dependent variables rely upon the independent variables and are considered the outcomes or results of the influence of the independent variable (Schutt, 2004). The persistence from semester to semester was used in this research because it was identified as one of the key individual educational success factors by the North Carolina Community College System (Ralls, 2008).

The research questions were used to guide the study, while the hypotheses were used to predict the relationship of age, race, gender, and SES on student persistence. The co relational explanatory design was used to analyze the data to establish the impact, if any, of the predictor variables, age, race, gender, and SES to the outcome of persistence. Statistical analysis of hypothesis testing provided a basis for inferences regarding the sample (Mitchell & Jolley, 2013; Treiman, 2009). For this research study, external validity refers to characteristics that allow generalization of findings to other community colleges with similar demographic makeup.

The research questions in the study allowed for a reasonable prediction of factors that differentiate between learners who persist and those who do not persist. Also, the approach allowed for determination if there was an interaction effect among the factors of interest. There are four scales of measurement used in most social research studies--nominal, ordinal, interval and ratio (Tabachnick & Fidell, 2013). As this study was quantitative in nature, it used interval scales that will show the quantities of the variables

or the frequency of occurrence. Interval level measurements made it possible to assess the size of the difference between variables (Tabachnick & Fidell, 2013).

Population

The community college is located in rural North Carolina and serves learners in the predominantly two rural counties. More than 55,000 people live in county one and consisting of 45.3% urban and 54.7% rural geographic makeup. County two's population is over 22,000 consisting of 10% urban and 89.4% rural geographic makeup (U. S. Bureau of the Census, 2012). This community college is located in a rural-fringe area, a Census-defined rural territory that is less than or equal to 5 miles from an urbanized area, as well as rural territory that is less than or equal to 2.5 miles from an urban cluster (National Center for Education Statistics, 2012). The median household income for county one is 26,778 dollars with .2% below the poverty rate. County two's median household income is 17,189 dollars with 0.2% below the poverty level. In April 2013, the national unemployment rate was 7.6% compared to the federal unemployment rate of 12.4% for county one and 9.5% for county two.

The community college featured in the current study is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools and is a member of the American Association of Community Colleges. It offers more than 40 academic programs that lead to a certificate, diploma, or the associate's degree to over 2,099 curriculum students. In 2011-2012 academic year, enrollment was comprised of 31% male, 69% female; 58% African Americans, 34.7% Caucasians, .009% Hispanics, .003% Asian and 0.225 % Indian, and over half (49%) are aged 25 and over. (www.halifaxcc.edu/catalog/201103.pdf). The population of students proposed for this

study will be the cohort of first-time, full and part-time degree/certificate-seeking undergraduates enrolled in Fall 2009 who paid the in-state or in district tuition rate and received Title IV federal aid, including federal grants or federal student loans. According to the 2009 IPEDS data and the institution's dataset, there were 1711 degree seeking students, but only 298 students were full-time, first-time, degree seeking students as well as receiving Title IV funding. This cohort was selected because it allows for multiple semesters of evaluation, which is suited for analysis using logistic regression.

Sample

The sample of students used for this research was cohort of first time, full and part-time degree/certificate-seeking undergraduates enrolled in Fall 2009 who paid the in-state or in district tuition rate and received Title IV federal aid, including federal grants or federal student loans. Students enrolling from the first day of registration through the tenth day were included in the study. Upon verification of the students, they were assigned a three digit number.

This study had four independent variables – age, race, gender, and SES. The minimum desired sample size for a medium effect size where alpha = .05 and power =.80 for testing the multiple correlation and individual independent variables correlations will be $N \geq 104 + IVs = 109$. However, a larger number of participants is needed when the dependent variables are not normally distributed (Tabachnick & Fidell, 2013). Because the estimated sample size is the minimal needed and it is unknown if the distributions of independent variables will be normal, it is proposed that a sample of at least 150 – 175 be used.

Materials/Instruments

Student demographic information was collected from the community college's enrollment management database (Datatel). The data was retrieved with the assistance of the college's Registrar. Utilizing database information from the Free Application and Student Aid (FAFSA), student income data was collected from the college's Student Financial Aid and Scholarship Office. IPEDS requires institutions to assign the income category of the student by using the income that was used by the financial aid office to determine students' Expected Family contribution (EFC). For dependent students the EPC should include the parents' adjusted gross income and the students' adjusted gross income. Adjusted gross income should only be included for independent students. The income data was retrieved with the assistance of the college's Director of Financial Aid. In order to gather the data necessary for the study a number of database searches and queries was required.

Operational Definition of Variables

Age: Age was defined as the age of the student at the time of enrollment in this study (Vogt, Gardner, & Haeffele, 2012). Students were placed in one of three categories: 1) 22 and under, 2) 23-29, and 3) over 30.

Race: Race was defined based on the six categories in the college's database. Black, White, Hispanic, Asian, American Indian, and Other.

Gender: The World Health Organization (2011) defines sex as male or female characteristics attributed to the biological and physiological composition of an individual. The data was extrapolated from "General Student Data" and measured on a nominal scale with 0 for male and 1 for female.

Socioeconomic Status (SES): SES was measured by the student's recorded income level on financial aid information indicated by the ranges required on the Free Application for Federal Student Aid. Students were placed in the following three categories; 1) less than $30,000, 2) $30,001-$48,000, and 3) over $48,001

Data Collection, Processing, and Analysis

Archival data was collected from fall 2009 cohort of first-time, full-time and part-time degree/certificate seeking undergraduates enrolled in fall 2009 who paid the in-state tuition rate and received Title IV federal aid, including federal grants, federal student work study or federal loans. Students applying to the institution are required to complete the admissions application. The application requires demographic information (age, race, and gender) to be entered so that the data can be submitted annually to IPEDS. The admissions application does not collect student or family income data. Income data is collected through FAFSA and students are required to complete the FAFSA to determine how much if any, financial assistance can be awarded.

The research study used four independent variables: age, race, gender, and SES. These variables were chosen because of their prevalence in the literature. Age and gender were included because they have been consistent factors included in persistence research conducted by Pascarella and Terenzini, (1979) and Tinto, (1975). For the purposes of this research study, students were placed in one or three age categories: a) 22 and under, b) 23-29 and c) over 30. These categories represent the three groups of students attending community colleges (Bailey and Alfonso, 2005).

The first group (22 and under) are considered traditional age college students. These students typically enter college directly after graduating high school or within one

year of graduation. The second group (23-29) represents students who enter the workforce directly after high school and enrolled in community college in order to increase skills to gain employment or to further their education at a four-year institution of higher education. The third group (over 30 and above) is representative of non-traditional students at community colleges.

Likewise, SES was also identified as an indicator of persistence due to the existence of research by (ACT, 2004c). Since the methodology used binary logistic regression, students were placed into one of three income categories based on the data available in the community college's database. The categories included (a) low income less than $30,000 dollars per year, (b) medium income, $30,001 - $48,000 per year, and (c) over 40,000 per year.

Race was identified as an independent variable due to research that suggests that on average 20% of minority students in all categories do not persist (Carter, 2006). To establish categories appropriate for the use of binary logistic regression, students were placed into one of seven categories based on information in the student database. The "Other" category was used to indicate students self-identified as other in the student database.

Binary logistic regression generally functions best when dependent variables are dichotomous or have relatively few data points (Schutt, 2004). In this study, the dependent variable, persistence, had only two outcomes, persisted (coded as 1) and did not persist (coded as 0). Two of the other variables in this study were modified in order to derive dichotomous outcomes or reduce the range of values. In coding financial variables as ordinal scales, it is assumed that they are variable scales, and are continuous and linear

(Schutt, 2004). A strength of logistic regression is that the model may contain many variables, some of which may be on different measurement scales (Schutt, 2004). If some variables are nominal, it is appropriate to use design variables to code them as if they were interval scaled. For example, if the data for race includes four choices (African American, White, Hispanic and Other), three design variables would be created: African American, Hispanic, and Other (all coded as 0=no 1=yes). All the students would be coded as either "yes" on one of the variables or "no" on all of the variables (for the White group).

When using a binary logistic regression model the first step in analyzing the relationship of each independent variable on the dependent variable would be to use a univariate model. (Ho, 2006). Therefore for this study age, race and SES were modified. The second step was to enter all the independent variables into the model by using a multivariate model. The univariate model is used to indicate which independent variables will be significant multivariate models. Any variable that has a p value ‹.25 for the univariate test should be considered in the multivariate model. After evaluating the association between the dependent and independent variables, the phi coefficient was used to determine the statistical strength of the relationship between the two variables.

All data collected was void of identifying student information and stored in a locked secure cabinet in the office of the researcher.

Assumptions

One assumption of this study was that the IPEDS database was accurate. A methodological assumption of this study was that it was designed to allow for a strong

determination of the factors that may influence community college persistence in a rural community college located in northeastern North Carolina.

Limitations

This study had several limitations. One limitation was that the findings in this study can only be generalized to the target population used in the study. However, similar persistence patterns may exist at rural community colleges of comparable size, mission, and student body. Another limitation was that the findings of this study are reflective of the specific time frame used for which attendance captured the specific variables studied. Other conditions such as environmental pull factors may affect academic persistence, but were not part of this study. Additionally, the data were archival and could not show cause and effect.

Delimitations

Delimitation was imposed to narrow the scope of the study and to limit the duration of the study. The research was delimited to measure only first time, full-time students enrolled in fall 2009, seeking a degree or credential. In order to maintain the study within practical boundaries for accessibility and economic reasons, only one state, North Carolina, was selected and only one two-year institution was included.

Ethical Assurances

Permission was sought from the Internal Review Board (IRB) before data collection begins. Permission was also sought from the institution's chief executive officer and the director of institutional effectiveness was asked to assist in the data collection.

Summary

Persistence of learners is important for the stability of the institution and to sustain academic programs (Fike & Fike, 2008). It costs more to recruit learners than to retain current learners, but institutions tend to focus on recruitment rather than learner persistence (Fike, & Fike 2008). The average attrition rate is approximately 41% from first year to second year, and the rate is 34% for persistence to degree (Fike & Fike, 2008).

Colleges and state policy makers control the size of the college, tuition; the use of part-time faculty; expenditures per student; student services and the extent the college focuses on degree levels (Bailey et al., 2005). The federal Higher Education Act may use graduation rates as a measure of institutional effectiveness (Fike & Fike, 2008). The research will focus on two categories that are not under the control of the community college institution: individual characteristics, and institutional attachment. This research study was the first of its kind to be used in the selected community college in rural northeastern North Carolina as a sample. This research study can assist the community college administrators in making data-informed decisions that will help develop strategies toward improving the persistence rate of all learners.

Chapter 4: Findings

The purpose of this quantitative study was to contribute empirical research findings regarding strength of the relationship between the independent variables of age, race, gender, and socioeconomic status (SES) on persistence in a rural community college in northeastern North Carolina. Data obtained from archived college records, pertaining to first-time, full and part-time students seeking a degree in fall 2009, was analyzed.

In this chapter, the findings of this study are presented. First, descriptive statistics of the target population by each independent variable are provided. Then, each of the research questions is addressed with the findings indicated by the data analysis. Logistic regression including descriptive statistics was used to determine the relationship between the independent variables (age, race, gender, and SES) and the dependent variable, persistence.

The primary research focused on the following research questions and hypothesis:

Q1. What is the relationship between students' ages and persistence from first semester to second semester in a community college in rural northeastern North Carolina?

Q2. What is the relationship between students' race and persistence from first semester to second semester in a community college in rural northeastern North Carolina?

Q3. What is the relationship between students' gender and persistence from first semester to second semester in a community college in rural northeastern North Carolina?

Q4. What is the relationship between students' SES (income) and persistence from first semester to second semester in a community college in rural northeastern North Carolina?

Hypotheses

H1o Age has no statistically significant relationship with students' persistence from first semester to second semester.

H1a There is a significant relationship between age and college student persistence from first semester to second semester.

H2o Race has no statistically significant relationship with students' persistence from first semester to second semester.

H2a There is a significant relationship between race and college student persistence from first semester to second semester.

H3o Gender has no statistically significant relationship with students' persistence from first semester to second semester.

H3a There is a significant relationship between gender and college student persistence from first semester to second semester.

H4o SES (income) has no statistically significant relationship with students' persistence from first semester to second semester.

H4a There is a significant relationship between SES (income) and college student persistence from first semester to second semester.

Descriptive statistics reflecting the target population by independent variable (age, race, gender, and SES) and the frequencies and percent were calculated for students

enrolled on a full-time or part-time basis at a community college in northeastern North Carolina. The results are summarized in Table 1.

Table 1

Details of Target Population by Independent Variable

Independent Variables	Frequencies	Percent	Valid Percent	Cumulative Percent
Age:				
22 and Under	180	60.4	60.4	60.4
23-29	46	15.4	15.4	75.8
Over 30	72	24.2	24.2	100.0
Total	298	100.0	100.0	
Race:				
White	119	39.3	39.9	39.9
Black	166	55.7	55.7	95.6
American Indian	1	.3	.3	96.0
Asian	1	.3	.3	96.3
Hispanic	7	2.4	2.3	98.7
Other	4	1.4	1.3	100.0
Total	298	100.0	100.0	
Gender:				
Male	144	48.3	48.3	48.3
Female	154	51.7	51.7	100.0
Total	298	100.0	100.0	
SES:				
Less than $30,000	181	60.7	75.1	75.1
$30,000-48,000	21	7.0	8.7	83.8
Over $48,001	39	13.1	16.2	100.0
Total	241	80.9	100.0	
Missing from System	57	19.1		
Total	298	100.0		

Table 2

Logistic Regression of Independent Variables Results: Entire Model

	B	S.E.	Wald	df	Sig.	Exp(B)
Gender	1.051	.330	10.174	1	.001	2.862
Age	.209	.187	1.253	1	.263	1.233
Ethnicity	.005	.205	.001	1	.979	1.005
SES	-.006	.214	.001	1	.976	.994
Constant	-2.599	.983	6.988	1	.008	.074

p=.05

For each of the research questions, logistic regression was used to analyze the relationship between the independent variables and dependent variable, persistence. The data presented in Table 2 presents the results of all variables in ranked order of likelihood as identified by the Exp(B) value. An Exp(B) value of less than 1.00 suggests a negative likelihood of occurrence. Subsequent sections will break down each section to match and explain corresponding research questions and Hypothesis.

The B-value provides information about the direction of the relationship. A positive value indicates that as the independent variable increases so does the likelihood of the dependent variable, in this case persistence. Inversely, a negative B-value indicates that as the value of the independent variable increases, the likelihood of persistence decreases.

Logistic regression also provides a significance value (Sig). This value is the indicator of statistical significance or the probability of rejecting the null hypothesis. Significance levels were set at p =.05 was established. This suggests that if the significance value is less than .05 then the null hypothesis would be rejected. The Wald test was used to evaluate the contribution of individual predictor variables to the model.

A statistical significant result indicates the predictor variable, given the presence of other predictor variables, is reliably associated with attrition or persistence.

Logistic regression further provides odds ratio information (Exp B) that describes the odds of the dependent variable (persistence) occurring given a change in the independent variable. Values greater than 1.0 signify that the variable being evaluated increases the odds of the dependent variable occurring. Values of less than 1.0 decrease the odds of the event occurring and a value of exactly 1.00 indicates an equal likelihood of the event either occurring or meaning the event cannot be accurately predicted and that is not a statistically significant relationship. The odds ratio indicates the probability of a student persisting with respect to a given variable but does not rule out the possibility of persistence happening by chance (Pallant, 2005). Variables that are determined to be statistically significant have been identified as those indicators that are not happening by chance. The following section presents the findings of the statistical analysis conducted using logistic regression for the four independent variables included in the study. These variables were age, race, gender, and SES.

Results

Research Question 1

What is the relationship between students' ages and persistence from first semester to second semester in a community college in rural northeastern North Carolina? The analysis of the data exploring the relationship between age and persistence is discussed below.

As described in Table 1 (60.4%) of the students enrolled in fall 2009, full and part-time, seeking a degree was 22 or under; (15.4%) were age 23-29, and 24.2% were

over 30. To examine Hypothesis 1 – Age has no statistically significant relationship with students' persistence from first semester to second semester, a binary logistic regression was conducted to assess if student age predicted degree completion. The results of the regression in Table 3 revealed that there is not a significant relationship, and thus the researcher fails to reject the null hypothesis. The level of significance, .270 is greater than the alpha level of .05.

Table 3

Binary Logistic Regression of Age Predicting Degree Completion

	B	S.E.	Wald	df	Sig.	Exp(B)
Age	-.183	.166	1.217	1	.270	.832
Constant	-.850	.294	8.354	1	.004	.427

p=.05

Research Question 2

What is the relationship between students' race and persistence from first semester to second semester in a community college in rural northeastern North Carolina? The analysis of the data exploring the relationship between race and persistence is discussed below.

As described in Table 1, (39.9%) of the students enrolled in fall 2009, full-part-time, seeking a degree was White, (55.7%) were Black, .3% were American Indian, (.3%) were Asian, (2.3%) were Hispanic and (1.3%) were "Other. Fifty-nine students (16.5%) did not identify race and were therefore were not included in the analysis. To examine Hypothesis 2 - Race has no statistically significant relationship on students' persistence from first semester to second semester, a binary logistic regression was conducted to assess if student ethnicity predicted degree completion. The results of the regression in

Table 4 revealed that there is not a significant relationship, and thus the researcher fails to reject the null hypothesis. The level of significance .291 is greater than the alpha level of .05.

Table 4

Binary Logistic Regression by Race Predicting Degree Completion

	B	S.E.	Wald	df	Sig.	Exp(B)
Race	-.185	.175	1.117	1	.291	.831
Constant	-.830	.321	6.703	1	.010	.436

p=.05

Research Question 3

What is the relationship between students' gender and persistence from first semester to second semester in a community college in rural northeastern North Carolina? The analysis exploring the relationship between gender and persistence is discussed below.

As described in Table 1, (48.3%) of the students enrolled during fall 2009 full-part-time and seeking a degree were male, and (51.7%) were female, and 59 students (16.5%) did not enter gender on their application and therefore were not included in the analysis. To examine Hypothesis 3 – Gender has no statistically significant relationship on students' persistence from first semester to second semester, a binary logistic regression was conducted to assess if student gender predicted degree completion. The results of the regression in Table 5 revealed that there is a significant relationship; therefore the researcher rejects the null hypothesis. The level of significance .000 is less

than the alpha level of .05. This suggests that as female enrollment increases, the odds of students' persisting to degree completion increased by a factor of 4.5 (Allison, 1999).

Table 5

Binary Logistic Regression of Gender Predicting Degree Completion

	B	S.E.	Wald	df	Sig.	Exp(B)
Gender	1.423	.308	21.325	1	.000	4.150
Constant	-3.434	.543	39.968	1	.000	.032

p=.05

Research Question 4

What is the relationship between students' SES (income) and persistence from first semester to second semester in a community college in northeastern North Carolina?

As described in Table 1, (75.1%) of the students had an income of less than $30,000, (8.7%) had an income of $30,000 – 48,000, and (16.2%) had an income over $48,001. There were (19.1%) or 57 students who did not provide income information and therefore were not included in the analysis. To examine Hypothesis 4 –SES (income) has no statistically significant relationship with students' persistence from first semester to second semester, a binary logistic regression was conducted to assess if student SES (income) status predicted degree completion. The results of the regression in Table 6 revealed that there is not a significant relationship, thus the researcher fails to reject the null hypothesis. The level of significance .774 is greater that the alpha level of .05.

Table 6

Binary Logistic Regression of Socio-economic Status Predicting Degree Completion

	B	S.E.	Waald	df.	Sig.	Exp(B)
SES	-.057	.199	.083	1	.774	.944
Constant	-.980	.314	9.716	1	.002	.375

p=.05

Binary logistic regression is an easier model building when the dependent variable is dichotomous. It is a viable statistics technique for analyzing the influence variables, since it analyzes a dichotomous dependent variable with multiple independent variables that were continuous or categorical (Sweet and Grace-Martin, 2003). This procedure is consistent with methods suggested by Hosmer and Lemeshow (1989), Menard (2002), and Pampel (2000).

Since using binary logistic regression analysis can increase type II error, a chi-square test was used to test whether the model as a whole predicted occurrence better than chance (Sweet & Grace-Martin, 2003). Chi-square tests are descriptive statistical tests, not a correlation technique, so there is no dependent variable that shows the independence of one variable to the other. The Chi-Square works similarly to a Pearson Correlation Coefficient however, the chi-square does not show the strength of the correlation of the two variables (Sweet & Grace-Martin, 2003). The four independent variables; age, race, gender, and SES (income), were tested against the dependent variable, persistence. The tests determine if there is a statistically significant difference between the expected count and the actual count. Any significance levels that are less than .05 are considered statistically significant therefore; the null hypothesis would be rejected. The following tables are the results of the Chi-Square analysis.

Table 7

Chi-square analysis of Age Predicting Degree Completion (Hypothesis 1)

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7.479	5	.187
Likelihood Ratio	7.069	5	.216
N of Valid Cases	298		

The results of the Chi-Square analysis in Table 7 revealed that there is not a significant relationship, and thus the results of the binary logistic regression are affirmed. The level of .187 is greater than the alpha level .05. $X^2(5) = 7.48$, $p>.05$.

Table 8

Chi-squared analysis of Race Predicting Degree Completion (Hypothesis 2)

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7.445[a]	5	.190
Likelihood Ratio	6.828	5	.234
N of Valid Cases	298		

The results of the Chi-Square analysis in Table 8 revealed that there is not a significant relationship, and thus the results of the binary logistic regression are affirmed. The level .190 is greater than the alpha level .05. $X^2(5) = 7.45$ $p>.05$

Table 9

Chi-Square analysis of Gender Predicting Degree Completion (Hypothesis 3)

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	3.775[a]	1	.052		
Continuity Correction	3.272	1	.070		
Likelihood Ratio	3.783	1	.052		
Fisher's Exact Test				.061	.035
N of Valid Cases	298				

The results of the Chi-Square analysis in Table 9 reveal a .052 significance level. $X^2(1) = 3.78$ $p<.05$

Although the binary logistic regression analysis revealed there is a significant relationship, the Chi-square analysis showed a level of p=.052, a difference of .002.

Table 10

Chi-Square analysis of SES Predicting Degree Completion (Hypothesis 4)

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	10.083[a]	11	.523
Likelihood Ratio	11.165	11	.430
N of Valid Cases	241		

The results of the Chi-Square analysis in Table 10 revealed that there is not a significant relationship, and thus the null hypothesis is affirmed. $X^2(11) = 10.08$ $p>.05$

Evaluation and Findings

Age

The first demographic variable examined in this study was age. Of the students in the 2009 cohort 180 were 22 and under, 46 were 23-29, and 72 were over 30 and over. Holding all other independent variables constant, the logistic regression model in Table 3 showed that for each one unit increase in age, the odds of persistence were increased by .83 times. A negligible relationship existed between the independent variable age and the dependent variable persistence. The significance (Sig.166) is greater than .05. The findings from this study suggest that age does not contribute significantly to persistence.

There are studies that indicated that age had an impact on persistence (Leppel, 2002; Northern Virginia Community College., A. H. 2001; Goldrick-Rab, 2007). Further findings by Owens (2003) indicated that other variables may interact with age such as grade point average thus would confound the results. Research by Blecher, Michael, and Hagedorn (2002) concluded that age did not affect persistence.

Race

The second demographic variable examined in this study was race. In order to use appropriate coding for binary logistic regression students were identified in one of six categories: White, Black, American Indian, Asian, Hispanic, and Other. In this case all groups were coded against all students not in the identified group for example Blacks

were compared to all non-Blacks. This coding was done in order to structure data for use with binary logistic regression.

Holding all other independent variables constant, the logistic regression model in Table 4 showed that race does not contribute significantly to persistence as the significance (Sig. 291) is greater than 05. Blacks were .83 times as likely to persist as the reference group. When considering the impact of this data it is important to note that the sample only included one American Indian student, one Asian student, seven Hispanic students, and four Other students. These low values are likely to impact the validity of this variable.

These findings are not supported by the literature. The literature indicates that race plays and important role in the persistence rate of minorities (Arum, et al.; Harper, 2006; Palmer & Hilton, 2008; Spellman, 2007).

Gender

The third demographic variable examined by this study was gender. The results in Table 5 suggest that there is a significant relationship between gender and persistence as the significance (Sig. 000) is greater than .05. The odds ratio Exp(B) 4.150 indicates that females are about (4%) more likely to persist. Data also suggests that as female enrollment increased the odds of students' persistence increased by a factor of 4.15.

As discussed in Chapter 2, literature indicates that persistence varied with gender (Tinto, 1993; Goldrick-Rab, 2007; Cawthorn, 2010; Allison, 1999; Carbonaro, Ellison, & Covay, 2011). The gender gap is shaped by the large number of enrolled women attending community colleges and the disproportionate enrollment and academic achievement of Blacks and Hispanics (King, 2000).

Socioeconomic Status (Income)

The final demographic variable examined by this study was socioeconomic status (income). Students were coded into one of three income levels based on the 2009 fall cohort: less than $30,000, $30,000 - $48,000, and over $48,001. The results in Table 6 show that there is not a significant relationship between SES and persistence. The significance level is (Sig.199) which is greater than .05. The finding that there is not a significant relationship is not supported by the literature.

Research indicated that learners in the lowest SES quartile were less likely to earn a credential or transfer to a four-year institution, and the results were contributed to the typical community college learner characteristics of first-generation learners, inconsistent enrollment, work and family obligations, and age. Lower SES learners are continually at a disadvantage as compared to their higher-SES peers (American Psychological Association Task Force, 2007). Researchers recognize the negative effects SES may have on persistence when studying educational outcomes (Fike & Fike, 2008; Goldrick-Rab, 2007; Kolesnikov, 2009). Other studies found that lower levels of SES are associated with lower levels of academic achievement (Toutkoushian & Curtis, 2005).

Even though enrollment status was not included as one of the demographic variables to be assessed in this study, a binary logistic regression was conducted. Research suggests that enrollment status, relative to age, and financial aid is an important element (Pascarella & Terenzini, 1979; Bean & Metzer, 1985; Feldman, 1993; Sax, 2008; Long, et al. 2008; & Bailey, et al., 2005). Students in this cohort were identified as either full-time (12 credit hours or more) or part-time (11 credit hours or less). The results of

the regression in Table 7 revealed that there was not a significant relationship, .065 is greater than the alpha level of .05.

Finally, percent rate was calculated to quantify persistence for students' enrolled on a full-time or part-time basis at the small rural community college in North Carolina. The result of the analysis as shown in Table 8 revealed that 224 of the sample size of 298 persisted at a rate of 75.2% (224/298) from fall 2009 to spring 2010. The national average for persistence for fall 2009 to spring 2010 was 57% (National Student Clearinghouse, 2014). Thus, the sample's persistence rate is remarkably higher than the national average.

Table 11

Binary Logistic Regression of Enrollment Status (Full-time vs. Part-time) Predicting Degree Completion

	B	S.E.	Wald	df	Sig.	Exp(B)
FT/PT	-.627	.340	3.411	1	.065	.534
Constant	-.371	.430	.430	1	.389	.690

Table 12

Fall 2009-Spring 2010 Persistence Rate

Number of Enrolled (Fall 2009)	Number of Enrolled (Spring 2010)
298	224
	75.2%

Summary

Performing logistic regression on all four independent variables resulted in several findings for the target group. The major findings were:

- The research found a statistically significant relationship between gender and persistence. The data indicates that females are about (4%) more likely to persist, and as female enrollment increases the odds of overall students' persistence increased by a factor of 4.15.
- The findings suggest that the contribution to persistence by the independent variables, age, race, and SES is minimal.

Chapter 5: Implications, Recommendations, and Conclusion

The persistence rate of first-year, first-semester students in higher education, especially in community colleges where attrition rates are higher than four-year institutions, has become a national, state, and local problem. This study was conducted to determine the strength of relationship between age, race, gender, and SES (income) on student persistence in a rural community college in northeastern North Carolina. Data was obtained from the Fall 2009 archived college records of first-time, full and part-time students working toward achieving a degree or credential. A quantitative analysis was completed to determine the relationship of the four independent variables on the dependent variable (persistence) as indicated by the research questions. However, due to the use of quantitative methodology, specifically binary logistic regression, no conclusion of cause and effect can be drawn (Vogt, 2007). The findings of the research only indicate if a relationship exists between specific factors and outcome.

Chapter 5 is composed of three parts: implications, recommendations, and conclusion. Implications will discuss each research question and (when appropriate) hypothesis individually, and draw logical conclusions. Potential limitations that may have affected the interpretation of the results will be discussed. Results will be presented in context with the study problem, purpose, and contribute to the existing literature described in Chapter 2. The chapter will present recommendations for practical application of the study, and future research. Recommendations will be supported by the research findings. Finally, all key points in Chapter 5 will be summarized.

Implications

The following section will summarize the major research findings of this study by research question. Logistic regression was employed to address each question.

Q1. What is the relationship between students' age and persistence from first semester to second semester in a community college in rural northeastern North Carolina? Hypothesis 1 – Age has no statistically significant relationship with students' persistence from first semester to second semester. The results of the regression revealed that there is not a significant relationship between age and persistence, and thus the researcher fails to reject the null hypothesis.

The findings in this study related to the variable of age are supported by research conducted by Blecher et al. (2002) which concluded that age did not affect academic persistence. A study by Brooks, May, & Morris, (2003) found that as age increased, the use of learning goals increased compared to the use of performance goals, and the coping style of the student also changed. However, numerous studies conducted on community college students have demonstrated that persistence may vary by age, but it is important to acknowledge additional variables that may interact with age and confound the results. Enrollment status, working full-time while enrolled; taking care of dependents other than a spouse, and family financial support are variables that may have influenced the results (Choy, 2002; Goldrick-Rab, 2007; Jinkens, 2009; Owens, 2003). Further findings by Owen (2003) indicated a significant relationship between age and grade point average (GPA).

Small rural community colleges tend to maintain relationships with the local public school system(s) by partnering in dual enrollment, online coursework, summer programs, and literacy programs. These partnerships create a pipeline of potential students (Emery, 2008). The use of partnerships may have an impact on the age of students since students may enter the community college directly after graduating high school. Women are more likely than men to enroll in college later in life, and success in higher education is affected by the age at which a student enters college (Goldrick-Rab, 2007). Most community college students are age 24 or older and are considered to be nontraditional.

At this small rural community college in northeastern North Carolina, 43% of the students in the study were female, and 60.4% of the students enrolling for the first time were 22 years old and under. The majority of the student population grew up in the rural area and attended the local rural high schools. This may explain the college persistence patterns of students based on the location (rural) of the institution attended. Berger and Milem, (2000) theorized that the location of the institution independently affects persistence.

Q2. What is the relationship between students' race and persistence from first semester to second semester in a community college in rural northeastern North Carolina? Hypothesis 2 – Race has no statistically significant relationship with students' persistence from first semester to second semester. The results of the regression revealed that there is not a significant relationship between race and persistence, and thus the researcher fails to reject the null hypothesis.

The findings of this study related to the variable of race counter findings by numerous previous researchers, (Bush & Bush, 2005; Carter, 2006; Harper, 2006; Jackson & Moore, 2006; Noguera, 2003; Strayhorn, 2010) which found there is a real gap between ethnic minorities and ethnic majorities in the attainment of higher education. Racial or ethnic minorities have a stronger probability of leaving postsecondary education than ethnic majority students (Jackson & Jackson, 2006; Bush & Bush, 2005). When considering the impact of this data it is important to note two important factors. First, the sample only included one American Indian student, one Asian student, seven Hispanic students, and four students classified as "Other" students. These low values are likely to impact the validity of this variable. Second, the majority of the students in the analysis were full-time African American students between 22-30 years of age.

Q3. What is the relationship between students' gender and persistence from first semester to second semester in a community college in rural northeastern North Carolina? Hypothesis 3 – Gender has no statistically significant relationship with students' persistence from first semester to second semester. The results of the regression revealed there is a significant relationship between gender and persistence, and thus the research rejects the null hypothesis. The research study found that females persisted at a greater rate than males.

There were 298 students used in the binary logistic regression analysis. The majority of the students in the analysis were full-time and African American. However, the gender of the population was relatively equal, which could possibly explain why

gender was the only variable in which the null hypothesis was rejected, meaning the relationship between gender and persistence is statistically significant.

The findings of this study related to the variable of gender are supported by numerous researchers; (Tinto, 1993; Goldrick & Rab, 2007; Cawthorn, 2010; Allison, 1999; Carbonaro, Ellison, & Covay, 2011). Carbonaro, et al. (2011) found that women persist at a greater rate than males, but males are more likely than females to transfer to a four-year institution. However, women who transfer to a four-year institution are more likely to complete a degree than men (Carbonaro, et al., 2011). Women have earned the majority of associate degrees since the mid-1970s (King, 2000). The gender gap is shaped by the large number of older women attending community colleges and the disproportionate enrollment and academic achievement of African-American and Hispanic women (King, 2000). Across all racial/ethnic groups, there has been more progress made by women obtaining postsecondary degrees as compared to men (Palmer, Davis, and Hilton, 2009).

Q4. What is the relationship between students' SES (income) and persistence from first semester to second semester in a community college in rural northeastern North Carolina? Hypothesis 4 – SES (income) has no statistically significant relationship with students' persistence from first semester to second semester. The results of this study reveal there is not a significant relationship between SES (income) and persistence, thus the researcher fails to reject the null hypothesis.

The findings of this study related to the variable of SES (income) are not supported by the general literature. Researchers recognize the negative effects that SES

(income) may have on persistence when studying educational outcomes (Fike & Fike, 2008; Goldrick-Rab, 2007; Kolesnikov, 2009). Research also found that lower levels of SES are associated with lower levels of academic achievement) (Toutkoushian & Curtis, 2005). It is important to note that the majority of research on the effect of SES (income) and persistence was conducted at four-year institutions and involved residential students who were financially dependent. Full-time four-year university students possess different demographics than rural community college students (Sparks & Nunez, 2014), which supports the need for more studies such as this.

The persistence rates of first generation college students (one of the typical traits of a community college student) are lower than those of second generation college students (Wells, 2009). Approximately one-fourth of community college students come from families earning 125% or less of the federal poverty level, as compared to one-fifth of four-year college students (Horn & Nevill, 2006). Research by Bailey, Jenkins, & Leinbach (2005) found that students in the lowest SES quartile were less likely to earn a credential or transfer to a four-year institution.

Closely linked to SES (income) is the ability for students to pay for their education. Research indicates that a student's ability to pay for college is directly linked to persistence and success (Singell, 2004; Seppanen, 2007; Dynarski, 2008). In this study, the impact of financial aid may have had an impact on the results of the variable. The descriptive results of the current study show that the majority of the students in the study were full-time, between the age of 22-30, and their SES (income) was $10,000 or less.

As a result, the majority of the students in the sample possibly qualified for the Pell Grant. Since 1992, more than 30% of all Pell recipients have enrolled in community colleges (Baime & Mullin, 2011), and in 2010-2011 community colleges had the highest proportion (35%) of Pell Grant recipients across all institutional types (U. S. Department of Education, 2011). The structure of the Pell Grant program may have been a mediating factor on the persistence rate. The current system incentivizes a longer period of enrollment, because it provides more funding to students who spread their enrollment out over a longer period of time (Baum et al. 2013).

A final possible explanation of the study's findings may be in the dependent variable. The rate was calculated to quantify persistence for students' enrolled on a full-time or part-time basis at the small rural community college in North Carolina. The result of the analysis revealed that 224 of the sample size of 298 persisted at a rate of 75.2% (224/298) from fall 2009 to spring 2010. The national average for persistence for fall 2009 to spring 2010 was 57% (National Student Clearinghouse, 2014). Thus, the sample's persistence rate is remarkably higher than the national average, and may account for different findings from previous literature.

Recommendations

There is an extensive list of literature on the multidimensional determinants of college persistence in the United States, but most of the literature is focused on four-year institutions (Pascarella & Terenzini, 1991; Bailey, et al.; 2005; Braxton & Hirschy, 2005; Sparks & Nunez, 2014), and highlights the effects of demographic and individual characteristics of students in large, urban or suburban geographical areas (Sparks & Nunez, 2014). Tinto (1975), an expert in the field of student engagement and departure,

studied mostly white, non-Hispanic, students who came from middle-class and higher SES levels. Community colleges should be studied using variables appropriate to two-year colleges and not by applying four-year college characteristics to two-year colleges. Even though 34% of community college students attend rural institutions and represent 59 % of all community college campuses in the country, little, if any, research has focused on the college persistence rates of students at small rural community colleges (Hardy, 2005).

The independent variable found to have the strongest relationship with the dependent variable, persistence, was gender. As discussed in Chapter 2, literature indicates that persistence varied with gender (Tinto, 1993; Goldrick-Rab, 2007; Cawthorn, 2010; Allison, 1999; Jacobs & Berkowitz-King, 2002; Carbonaro, Ellison, & Covay, 2011). Leppel (2002), found that other sociodemograhic variables affected the persistence of men and women differently and that any interventions to increase persistence should be targeted to the specific needs of the gender. The gender gap is shaped by the large number of enrolled women attending community colleges and the disproportionate enrollment and academic achievement of Blacks and Hispanics (King, 2000).

In a study by Hardy (2005), it was found that in general, rural community colleges enroll greater percentages of full-time students than urban and suburban institutions, and that the smaller the institution the higher the percentage of full-time students. Women enroll and persist at a higher rate than men, but men represent smaller percentages of part-time enrollments at small rural community colleges when compared to larger institutions (Hardy, 2005). Also, Hardy (2005) determined that African American

students make up the largest minority group in rural community colleges, with the Southeast having substantially larger proportions of African Americans than rural colleges in other regions. Other relevant research that could be conducted in the future includes studies of African American males and the confounding variables of the environment on their persistence.

The majority of studies on African American males are focused on four-year colleges and universities (Wood, 2012; Wood & Turner, 2011). Prior research has shown that African American males in two-year institutions have different characteristics when compared to students attending four-year institutions. They are more likely to be older, low-income, have dependents and to have delayed enrollment into higher education (Flowers, 2006).

More studies are needed to determine the relationship of age, race and their combined impact on persistence at rural community colleges. In community colleges, minority student persistence rates are low with only (14%) of African-American and (15%) of Hispanic students persisting toward an identified goal (Tyler, Sterling, and Grays, 2013).

In this study, financial aid did not have a significant relationship to persistence. However, research indicates that a student's ability to pay for college is directly linked to persistence and success (Reason, 2009; Singell, 2004; Steppanen, 2007; Dynarski, 1999). Also, students' SES is significantly linked to persistence once the variables of gender and race are controlled (Walpole, 2003; ACT, 2004c). Future studies could include financial aid and employment on rural community college student persistence. There is limited attention given to financial aid and work commitment and non-college factors such as the

number of jobs requiring a college degree, unemployment rate, socioeconomic conditions based on the rural geographical location of the institution.

Further research might focus on employment patterns by age, race gender, and SES (income) and the impact of persistence. Include more institutional level context, such as organizational structure, number of county residents with a college degree, county unemployment rates. Studies on the impact of financial aid have historically been conducted at four-year institutions Findings by Taniguchi and Kaufman (2005) found that females were more likely than males to have received scholarships, but were not more likely to be enrolled on a part-time basis which puts them more in at risk of not persisting. A research study by Sax (2008) contends that:

> As more men and women from diverse backgrounds enter college, campus personnel should be aware of, and responsive to students' changing financial needs. Gender differences are particularly important to acknowledge because women's financial concerns and need for employment are higher than men's. thus, the ongoing shift I federal financial aid from grants to loans and work-study may present a particular challenge to female students. Also, campus staff and faculty should be mindful that many women have continuing and unpaid responsibilities to their families. (p. 22)

Overall, the quantitative analysis of the relationship between the independent variables of age, race, gender, and SES (income) and the dependent variable persistence was small. Future research could incorporate a qualitative analysis to provide useful information regarding these same independent variables in the context of the individual student. Though this study contributed to the research related to students enrolled in small

rural community colleges, it also exposes areas for future study. As the research was limited to students at one small rural community college, it is recommended that additional research be conducted over a wider geographical area to determine if similar conclusions may be reached.

Conclusions

Small rural community colleges differ from urban and suburban institutions. It is important to determine if demographic factors coupled with environmental and geographical location affect college student persistence. This study was restricted to the data from one regional campus of a statewide community college system. Of the four variables studied, age, race, gender, and SES (income), gender was the only variable with a significant relationship on persistence. The findings in this study can only be generalized to the target population used in this study. However, similar patterns may exist at community colleges comparable in size, mission, and student body. Any findings of this study are reflective of the specific time period for which enrollment is reflected and the specific variables studied. Other variables such as the local economy, job markets, institutional organization, fiscal restraints, may have confounded the results.

References

Achieving the Dream: Community College Count (2006). Increasing student success at community colleges: Institutional change in achieving the dream. Retrieved from http://www.achievingthedream.org/_images/_index03/

Achieving the Dream: Courageous Conversation (2011). Achieving the Dream and the importance of student success. Retrieved from www.changmay.or/Archives/Back%20Issues/

ACT (2004). *The role of academic and nonacademic factors in improving college retention.* Iowa City, IA: Author.

ACT (2006). *Reading between the lines*: *What the ACT reveals about college readiness in reading*. Iowa City, IA: Author. Retrieved from http://www.act.org/research/policymakers/pdf/reading_summary.pdf

Adelman, C. (2006). The toolbox revisited: Paths to degree completion from high school through college. Washington, DC: U. S. Department of Education.

Advisory Committee on Student Financial Assistance. (2008, September). *Apply to succeed: Ensuring community college students benefit from need-based financial aid*. Washington, DC: Author. Retrieved from www2.ed.gov/about/bdscomm/list/acsfa/applytosucceed.pdf

Ainsworth-Darnell, J. W., & Downey, D. B. (1998). Assessing the oppositional culture explanation for racial/ethnic differences in school performance. *American Sociological Review*, *63*, 536-553.

American Association of Community Colleges. (2007a). *About community colleges.* Retrieved from http://www.aacc.nche.eduiTemplate.cfm?section=AboutCommunityColleges

Association of Community Colleges. (2010). *Democracy's colleges: The evolution of the community college in America.* Washington, DC: Author.

American Psychological Association, Task force on Socioeconomic Status (2007). *Report of the APA Task Force on Socioeconomic Status.* Washington, DC: Author. Retrieved from http://www2.apa.org/pi/SES_task_force_report.pdf

Arnold, A. (1999). Retention and persistence in postsecondary education: A summation of research studies. Texas Guaranteed student Loan Corporation. Retrieved from http://www.tgsk.org/tgslc/publications/reports/persistence.pdf

Arum, R., Roksa, J., & Cho, E. (2005). Improving undergraduate learning: Findings and policy recommendations from the SSRC-CLA longitudinal project. Social Science Research Council. Retrieved from http://highered.ssrc.org/files/SSRC_Report.pdf

Astin, A. W., and associates (1996). *Degree attainment rates at American colleges and universities: Effects of race, gender, and institutional type*. Los Angeles, CA: Higher Education Research Institute.

Astin, A. W., Tsui, L., & Avalos, J. (1996). *Degree attainment rates at American colleges and universities: Effects of race, gender, and institutional type* (Report no. ISBN-1-878477-18-8) eric Document Reproduction Services no. ED400749). Los Angeles: Higher Education Research Institute.

Astin, A. W., & Oseguera, L. (2004). The declining "equity" of American higher education. *Review of Higher Education, 27*(3), 321-341.

Aud, S., Fox, M., & KewalRamani, A. (2010). *Status and trends in the education of racial and ethnic groups* (NCES 2010-015). Washington, DC: Government Printing Office.

Bailey, T., Alfonso, M., (2005). Paths to persistence: An analysis of research on program effectiveness at community colleges. *Lumina Foundation for Education New Agenda Series, 6(1)*.

Bailey, T., Alfonso, M., Calcagno, J. C., Jenkins, D., Kienzl, G., & Leinbach, T. (2004). *Improving student attainment in community colleges: Institutional characteristics and policies.* New York, NY: Columbia University, Community College Research Center.

Bailey, T., Calcagno, J. C., Jenkins, D., Kienzl, G., & Leinbach, T. (2005). *Is student-right-to-know all you should know? An analysis of community college graduation rates*. New York: Columbia University, Teachers College, Community College Research Center.

Bailey, T., Jenkins, D., & Leinbach, T. (2005). *What we know about community college low-income and minority student outcomes: Descriptive statistics from national surveys.* New York: Columbia University, Teachers College, Community College Research Center.

Bailey, T., Leinbach, T., & Jenkins, D. (2006). *Is student success labeled institutional failure? Student goals and graduation rates in the accountability debate at community colleges.* New York, NY: Columbia University, Teachers College, Community College Research Center.

Bailey, T., & Morest, V. S. (2006). The community college equity agenda in the twenty-first century: Moving from access to achievement. In T. Bailey, & V. S. Morest (Eds.), *Defending the community college equity agenda* (pp. 246-270). Baltimore, MD: The John Hopkins University Press.

Barnett, E. (2010). Validation experiences and persistence among community college students. *The Review of Higher Education. 34*, 193-230. doi: 10.1353/rhe.2010.0019

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

Bean, J. P. (2005). Nine themes of college student retention. In A. Seidman (Ed.), *Student college retention: Formula for student success* (pp. 215–244). New York, NY: Rowman & Littlefield.

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

Bers, T. H., & Smith, K. E. (1991). Persistence of community college students: The influence of student intent and academic and social integration. *Research in Higher Education, 32*(5), 539-556.

Bettinger, E., Long, B. T., Oreopoulos, P. & Sanbonmatsu, L. (2009). The role of simplification and information in college decisions: Results from the H & R Block FAFSA Experiment. National Bureau of Economic Research (NBER) Working Paper No. 15361

Blecher, L., Michael, W., & Hagedorn, L. (2002, April). *Factors related to the system persistence of students seeking the bachelor's degree at four-year institutions*. Paper presented at the annual meeting of the American Educational Research Association. New Orleans, LA.

Boggs, G.R. (2010). *Democracy's colleges: The evolution of the community college in America.* Retrieved from http://www.aacc.nche.edu/AboutCC/whsummit/Documents/boggs_whsummitbrief.pdf

Brannen, J. (2009). Mixed methods for novice researchers: Reflections and themes. *International Journal of Multiple Research Approaches, 3,* 8-12

Braxton, J. M., Hirschy, A. S. & McClendon, S. A. (2004). Understanding and reducing college student departure (ASHE-ERIC) Higher Education Report. Volume30, Issue 3. Indianapolis: Jossey-Bass.

Brooks-Leonard, C. (1991). Demographic and academic factors associated with first-to second term retention in a two-year college. *Community/Junior College Quarterly*, *15*, 57–69

Brooks, R., May, J. L., & Morris, E. A. (2003). The relationship between achievement goal orientation and coping style: Traditional vs. nontraditional college students. *College Student Journal*, *37*, 3-8.

Burns, K. (2010). At issue: Community college student success variables: A review of the literature. *Community College Enterprise*, *16*(2), 33-61. Retrieved from http://search.proquest.com/docview/813141488?accountid=28180

Bush, E. C. & Bush, L. (2005). Black male achievement and the community college. *Black Issues in Higher Education, 23*, 44-46.

Calcagno, J. Bailey, T., Jenkins, D., Kienzl, G., & Leinbach, T. (2008). Community college student success: What institutional characteristics make a difference: *Economics of Education Review, 27*, 632-645.

Calcagno, J. C., Crosta, P., Bailey, T., & Jenkins, D. (2006). Stepping stones to a degree: The impact of enrollment pathways and milestones on community college student outcomes. CCRC Working Paper No. 4. New York: Columbia University, Teachers College, Community College Research Center.

Carbonaro, W., Ellison, B.J., & Covay, E. (2011). Gender inequities in the college pipeline. *Social Science Research, 40*(1), 120-135. doi: 10.1016/j.ssreach.2010.07.004.

Carnegie Foundation for the Advancement of Teaching. (2006a). In Carnegie Foundation (Ed.), *Basic Classification Technical Details*. Retrieved from http:// www.carnegiefoundation.org/classifications/index.asp?key=798

Carnevale, A. P., & Desrochers, D. M. (2004). Why learning? The value of higher education to society and the individual. In K. Boswell & C. D. Wilson (Eds), *Keeping America's promise: A report on the future of the community college,* 39-44. Denver, CO: Education Commission of the States.

Carter, D.F. (2006). Key issues in the persistence of underrepresented minority students. New *Directions for Institutional Research,* 130, 33-46. doi: 10.1002/ir.178

Cawthorne, A. (2010). *Report: Low-income students reaching college; too few earn degrees.* Retrieved from http://www.americanprogress.org/wp-content/uploads/issues/2008/10/pdf/women_poverty.pdf

Cejda, B. D. (2010). Faculty issues in rural community colleges. *New Directions for Community Colleges, 152*, 33-40.

Chaves, C. (2006). Involvement, development, and retention: Theoretical foundations and potential extensions for adult community college students.. *Community College Review, 34*(2), 139-152.

Chen, R. (2008). Financial aid and student dropout in higher education: A heterogeneous research approach. In J. C. Smart (Ed.), *Higher education: Handbook of theory and Research* (Vol. 23, pp. 209-239). New York, NY: Springer.

Choy, S. (2001). Students whose parents did not go to college: Postsecondary access, persistence, and attainment (NCES Report No. 2001-126). Washington, D. C.: U. S. Department of Education, National Center for Education Statistics.

Choy, S.P. (2002). *Access and persistence: Findings from 10 years of longitudinal research on students.* Washington, DC:

Gibbs, R. (1998). College completion and return migration among rural youth. In R. Gibbs, P. Swaim, & R. Teixeira (Eds.), *Rural education and training in the new economy: The myth of the rural skills gap* (1st ed., pp. 61–80). Ames, IA: Iowa State University Press.

Clotfelter, C. T., Ladd, H. F., Muschkin, C. G., & Vigdor, J. L. (2012). Success in community colleges: Do institutions differ? Research in Higher Education, doi. 10.1007/s11162-013-9295-6

Cohen, A. M., & Brawer, F .B. (2008). The American community college. (5th ed.). San Francisco, CA: Jossey-Bass

College Board. (2009). Trends in college pricing: 2009. Washington, DC: Author. Retrieved from www.trends-collegboard.com/college_pricing/pdf2009_Trends_Colleges_Pricing.pdf

Collins, J. & Quark, A. (2006). Globalizing farms and small communities: the apparel industry's changing connection to rural labor markets. *Rural Sociology, 7*(2), 281-310.

Community College Survey of Student Engagement. (2008). *Committing to student engagement reflections on CCSSE's first five years*: Community College Survey of Student Engagement.

Conley, D. T. (2009). *Creating college readiness: Profiles of 38 schools that know how*. Retrieved from http://cepr.uoregon.edu

Craig, A. J. (2008). Retention of community college students: Related student and institutional characteristics. *Journal of College Retention*, *9*(4), 505-517. Retrieved from http://search.proquest.com/docview/196731802?accountid=28180

Creswell, J. W. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches.* Thousand Oaks, CA: Sage Publications.

Cromartie, J. (2008). Defining the "rural" in rural America. *Amber Waves, 6*(3), 28-33. Retrieved from http://www.ers.usda.gov/amberwaves

Cross, T. & Slater, R. B. (2000 spring). Then alarming decline in the academic performance of African American men. *Journal of Blacks in Higher Education*, 82-87.

Cubeta, J., Travers, N., & Scheckley, B. (2001). Predicting the academic success of adults from diverse populations. *Journal of College Student Retention, 2,* 295-316.

Cundell, D. & Pierce, J. D., Jr. (2009). Factors influencing undergraduate student-teacher interaction. *Journal of College Science Teaching, 38*(5), 33-37.

Cunningham, A.F. and Santiago, D. (2008). *Student Aversion to Borrowing: Who Borrows and Who Doesn't*. Institute for Higher Education Policy and *Excelencia* in Education. December

Cuyjet, M. J. (2006). African American college men: Twenty-first century issues and concerns. In M. J. Cuyjet (Ed). *African American Men in College*. Pp. 3-23.

Davis, J. E. (2003). Early schooling and academic achievement of African American males. *Urban Education, 38*(5), 515.

Deli-Amen, R. (2011). Socio-Academic integration moments: Rethinking academic and social integration among two-year college students in career-related programs. *Journal of Higher Education, 82*, 54-91.

DiBenedetto, M. K. & Bembenutty, H. (2013). Within the pipeline: Self-regulated learning, self-efficacy, and socialization among college students in science courses. *Learning and Individual Differences, 23,* 218-224. doi: 10.1016/j.lindif.2912.09.015.

Dowd, A. C., & Coury, T. (2006). The effect of loans on the persistence and attainment of community college students. *Research in Higher Education*, *47*, 33-62. doi:10.1007/s11162-005-8151-8

Dynarski, S. M. (1999). *Does aid matter? Measuring the effect of student aid on college attendance and completion* (NBER Working Papers). Cambridge, MA: National Bureau of Economic Research.

Education Commission of the States. (2010). State funding for Community Colleges: A 50-State survey

Emery, M. (2008). From ripples to waves: The Rural Community College Initiative to build new partnerships in support of America's rural communities. www.soc.iastate.edu/extension/ncrcrd/ncrcrd-rrd190-print.pdf

Engle, J. and Tinto, V. 2008. *Moving Beyond Access: College Success for Low-Income, First-Generation Students*. Washington, DC. The Pell Institute for the Study of Opportunity in Higher Education.

Feldman, M. (1993). Factors associated with one-year retention in community college. *Research in Higher Education, 34*(4), 503- 512.

Fike, D. S., & Fike, R. (2008). Predictors of first-year student retention in the community college. *Community College Review*, *36*(2), 68-85.

Fordham, S., & Ogbu, J. (1986). Black students' school success: Coping with the burden of acting White. *Urban Review*, *18(3),* 176-206.

Free Application for Federal Student Aid (2010, March). FAFSA.com. Retrieved from http://www.fafsa.com/understanding-fafsa/

Gall, M. D., Gall, J. P., & Borg, W. R. (2008). Educational research: An introduction (8th ed.) Boston, MA: Pearson/Allyn, & Bacon

Goldrick-Rab, S. (2007). *Promoting academic momentum at community colleges: Challenges and opportunities.* New York: Columbia University, Teachers College, Community College Research Center.

Goldin, C., Katz, L.E., & Kuziembo, I. (2006). The homecoming of American college women: The reversal of the college gender gap. *Journal of Economic Perspectives*, *20*(4), 133-156.

Goldrick-Rab, S. & Roksa, J. (2008). A Federal Agenda for Promoting Student Success and Degree Completion. Report prepared by Toward Universal Higher Education: The Role for Public Policy, Washington: DC. Retrieved from www.americanprogress.org

Grosset, J. (1989). *A conceptual framework for describing the causes of student attrition.* Institutional research report #44, ERIC Document Reproduction Service No. 310.

Hagedorn, L. S., Maxwell, W., & Hampton, P. (2002). Correlates of retention for African- American males in community colleges. *Journal of College Student Retention*, *3*, 243– 263.

Hale, J. E. (2001). *Learning while Black: Creating educational excellence for African American children*. Baltimore, MD: The John Hopkins University Press.

Hammersley, M. (2008). Troubles with triangulation: Advances in mixed methods Research. London: Sage, pp. 22-36.

Hamrick, F. A., & Stage, F. K. (2004). College predisposition at high-minority enrollment, low-income schools. *The Review of Higher Education*, *27*(2), 151-168.

Hardy, D. E., & Katsinas, S. G. (2007). Classifying community colleges: How rural community colleges fit. In P. L. Eddy & J. P. Murray (Eds), *Rural community college: Teaching, learning, and leading in the heartland: New directions for community colleges* (pp. 5-17), no. 137, San Francisco, CA: Jossey-Bass.

Harper, S. R. (2006). Reconceptualizing reactivity policy responses to Black male college achievement: Implications from a national study. *Focus: Magazine of the Joint Center for Political and Economic Studies, 34*, 14-15.

Harvey, W. B. (2008). The weakest link: A commentary on the connections between K-12 and higher education. *American Behavioral Scientist*, *51*, 972-983.

Hawley, T., & Harris, T. (2005). Student characteristics related to persistence for first-year community college students. *Journal of College Student Retention: Research, Theory, & Practice, 7,* 117-142.

Hernandez, A. (2010). Report: Low-income students reaching college; too few earn degrees. Retrieved from http:lldiverseeducation.com/article/13866/

Herzog, S. (2005). Measuring determinants of student return vs. dropout/stopout vs. transfer: A first-to-second year analysis of new freshmen [Electronic version]. *Research in Higher Education, 46*, 883-928.

Hicks, C. & Jones, S. J. (2011). At issue: survival tactics for small, rural serving community colleges. *Community College Enterprise, 17*(2), 28-45.

Ho, R. (2006). *Handbook of Univariate and Multivariate Data Analysis and Interpretation with SPSS.* Chapman and Hall, Boca Raton, FL.

Horn, L., Berger, R., & Carroll, C. D. (2004). *College persistence on the rise? Changes in 5-year degree completion and postsecondary persistence rates between 1994 and 2000* (Report). Washington, DC: US Department of Education, Institute of Education Sciences.

Horn, L., Cataldi, E. F., & Sikora, A. (2005). *Waiting to attend college: Undergraduates who delay their postsecondary enrollment* (NCES 2005-152). U.S. Department of Education, National Center for Education Statistics. Washington, DC: U.S. Government Printing Office.

Horn, L. J. (1996). *Nontraditional undergraduates: Trends in enrollment from 1986 to 1992 and persistence and attainment among 1989-1990 beginning postsecondary students.* (NCES 97578). U.S. Department of Education, National Center for Education Statistics. Washington, DC: U. S. Government Printing Office.

Horn, L., & Nevill, S. (2006). *Profile of undergraduates in U.S. postsecondary education institutions: 2003-2004: With a special analysis of community college students* (NCES 2006-184). Washington, DC: U.S. Government Printing Office.

Hosmer, D.E., & Lemeshow, S. (1989). Applied logistic regression. New York: John Wiley and Sons.

Hu, S. & St. John, (2001). Student persistence in a public higher education system: Understanding racial and ethnic differences. *The Journal of Higher Education, 72*, 265-286.

Institute for Higher Education Policy. (2001, February). *Getting through college: Voices of low income and minority students in New England*. Washington, DC: Author

Jackson, J. F. L., & Moore, J. L., III. (2006). African American males in education: Endangered or ignored. *Teachers College Record. 108*, 201-205

Jacobs, J. A., & King, R. B. (2002). Age and college completion: A life history analysis of women aged 15-44. *Sociology of Education, 75*(3). 211-230.

Jenkins, D. (2011). *Redesigning community colleges for completion: Lessons from research on high-performance organizations* (CCRC Working Paper No. 24, Assessment of Evidence Series). New York, NY: Columbia University, Teachers College, Community College Research Center.

Jinkens, R. C. (2009). Nontraditional students. Who are they? *College Student Journal, 43*(4), 979-987.

.

Johnson, J. & Strange, M. (2009). Why rural matters 2009: State and regional challenges and opportunities. A report of the rural school and community trust policy program. Retrieved from http://files.ruraledu.org/wrm09/WRM09.pdf

Kantrowitz, M. (2011). *Reasons why students do not file the FAFSA*. Retrieved from http://www.finaid.org/educators/20110118nofafsareasons.pdf.

Kao, G., & Tienda, M. (1998). Educational aspirations of minority youth. *American Journal of Education*, *106*, 349-384.

Karp, M. M., Hughes, K. L., & O'Gara, L. (2008). *An explanation of Tinto's integration framework for community college students.* New York: Columbia University, Teachers College, Community College Research Center.

Katsinas, S. G., Alexander, K. F., & Opp, R. D. (2003). Preserving access with excellence: Financing for rural community colleges. Rural Community College Initiative Policy Paper. Chapel Hill, NC:MDC, Inc. Retrieved from http://www.inpathways.net/:pcnlibrary/viewBiblio.aspx?aid=22

Katsinas, S. G., Tollefson, T. A., & Reamey, B. A. (2008). *Funding issues in the U.S. community colleges: Findings from a 2007 survey of the national state directors of community colleges*. Washington, DC: American Association of Community Colleges. Retrieved from www.aacc.nche.edu/fundingissues

Katsinas, S. G., Mensel, R. F., Hagedorn, L. S., Friedel, J. N., & D'Amico, N. M. (2012). Pell grants and the lifting of America's rural future. Tuscaloosa, AL: the Education Policy Center at the University of Alabama. Retrieved from http://www.cscconline.org/index.php/download_file/vies/248/1/1

King, J.E. (2000). *Gender equity in higher education: Are male students at a disadvantage?* Washington, DC: American Council on Education.

King, J. E. (2005). Academic success and financial decisions: Helping students make crucial choices. In R. S. Feldman (Ed), *Improving the first year of college: Research and practice* (pp. 3-25). Mahwah, NJ: Lawrence Erlbaum.

King, J. E. (2006). *Missed opportunities revisited: New information on students who do not apply for financial aid.* Washington, DC: American Council on Education.

Kolesnikova, N. (2009). Community colleges: A route to upward economic mobility. St. Louis Federal Reserve: St. Louis, MO.

Kotamraju, P., & Blackman, O. (2011). Meeting the 2020 American Graduation Initiative goal of increasing postsecondary graduation rates and completion: A macro perspective of community college students' educational attainment. *Community College Journal of Research and Practice, 35*(3), 202-219.

Kuh, G. D., Kinzie, J., Buckley, J. A., Bridges, B. K., & Hayek, J. C. (2006). *What matters to student success: A review of the literature.* National Postsecondary Education Collaborative. Washington, DC: U.S. Department of Education.

Lanni, J. C. (1997). *Modeling student outcomes: A longitudinal study.* Paper presented at the 37th annual forum of the Association for Institutional Research, Orlando, Florida. (ERIC Document Reproduction Service No. ED 410870).

Leppel, K. (2005). College persistence and student attitude towards financial success. *College Student Journal, 39*, 223-241.

Levin, H, M., Belfield, C., Muennig, P., & Rouse, C. (2007). The public returns to public educational investments in African American males. *Economics of Educational Review*, *26*, 700-709.

Liu, S., Gomez, J., & Yen, C. (2009). Community college online course retention and final grade: Predictability of social presence. *Journal of Interactive Online Learning, 8*(2). Retrieved from www.ncolr.org/jiol

Long, B. T. (2010, October). *Financial aid: A key to community college student success* (Issue brief prepared for the White House Summit on Community Colleges). Washington, DC. Retrieved from http://www2.ed.gov/PDFDocs/college-completion/08-financial-aid.pdf

Lohfink, M. M., & Paulsen, M. B. (2005). Comparing the determinants of persistence for first-generation and continuing-generation students. *Journal of College Student Development, 46,* 409-428.

Lovett, M., Jones, I., Hollier, G., & Blankenship, D. (2010). Diversity awareness among a diverse business student population: Insights and curriculum implications. *Research in Higher Education Journal, 8*, 1-14. Retrieved from http://www.aabri.com/rhej.html

Lundy, G. F. (2003). School resistance in America high schools: The role of race and gender in oppositional culture theory. *Evaluation and Research in Education, 17*, 6-27.

Luyt, R. (2011). A framework for mixing methods in quantitative measurement development, validation, and revision: A case study. Journal of Mixed Methods Research. Retrieved from http://jmmr.sagepub.com

Madison-Colmore, O., & Moore, J. L., III. (2002). Using the H.I.S. model in counseling African American men. *Journal of Men Studies*, *10*, 197-208.

Majors, R., & Billson, M. (1992). *Cool pose: Dilemmas of Black manhood in America*. New York: Simon & Schuster

Marcus, J. (2011, August 22). Two years after Obama's college graduation initiative, major obstacles remain. *Community College Week, 24(1)*, 8-9.

McClenney, K. M. (2004). Keeping America's promise: Challenges for community colleges. In K. Boswell & C. D. Wilson (Eds.), *Keeping America's promise: A report on the future of the community college* (pp. 6-18). Denver, CO: Education Commission of the States.

Menard, S. (2002). Applied logistic regression analysis. Second Edition. Thousand Oaks: Sage Publications, Inc.

Merisotis, J. (2005). The investment payoff: A 50 state analysis of the public and private benefits of higher education. Washington, DC: Institute for Higher Education Policy. Retrieved from http://www.ihep.org/Pubs/PDF/InvestmentPayoff2005.pdf

Miller, M. T., & Kissinger, D. B. (2007). Connecting rural community colleges to their communities. In P. L. Eddy & J. P. Murray (Eds.), *Rural community colleges: Teaching, learning, and leading in the heartland: New directions for community colleges* (pp. 27-34), no. 137, San Francisco, CA: Jossey-Bass.

Miller, M. T., & Tuttle, C. (2007). Building communities: How rural community colleges develop their communities and the people who live in them. *Community College Journal of Research & Practice, 31*(2), 117-127.

Mitchell, M. L., & Jolley, J. M. (2013). *Research design explained.* (8th ed.). Beverly, MA: Wadsworth Publishing.

Moore, J. L., III. (2000). Counseling African American men back to health. In L. Jones (Ed.), *Brothers of the academy: Up and coming Black scholars earning our way in higher education* (pp. 248-261). Herndon, VA: Stylus.

National Center of Education Statistics (2005). *Digest of education statistics*. Washington, DC: Author. Retrieved from http://nces.ed.gov/programs/digest/do5/tables/dt243.asp

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

National commission on Community Colleges (2008). Winning the skills race and strengthening America's middle class: An agenda for community colleges. New York, NY: The College Board. Retrieved from http://professionals.collegeboard.com/profsownload/winning_the_skills_race.pdf

Noguera, P. (2003). The trouble with Black boys: The role and influence of environmental and cultural factors on academic performance of African American males. *Urban Education*, *38*, 431-459.

Nora, A., Cabrera, A, Hagedorn, L. S., & Pascarella, E. (1996). Differential imparts of academic and social experiences on college-related behavioral outcomes across different ethnic and gender groups and four-year institutions. *Research in Higher Education, 37*(4), 427-451.

Northern Virginia Community College, A.H., (2001). Student Retention at NVCC and Strategies for Improvement. Research Report.

Novak, H., & McKinney, L. (2011). The consequences of leaving money on the table: Examining persistence among students who do not file a FAFSA. *Journal of Student Financial Aid*, *41*(3), 5-23.

Obama, B. (2009). *Remarks by the president on the American Graduation Initiative.* Washington, DC: The White House, Office of the Press Secretary. Retrieved from http://www.whitehouse.Gov/the press_office/Remarks-by-the-President-on-the-American-Graduation-Initiative-in-Warren-MI/

Obama, B. (2010, March). *Remarks by the president on energy efficiency* at Savannah College. Presented to Savannah College, Savannah. Retrieved from The White House website: Retrieved from http://www.whitehouse.gov/the-press-office/remarks-president-energy-efficiency-savannah-georgia

O'Connor, N., Hammack, F. M., & Scott, M. A. (2010). Social capital, financial knowledge, and Hispanic student college choices. *Research in Higher Education*, *51*(3), 195-219. doi: 10.1007/s11162-009-9153-8

Office of Institutional Research of Metropolitan Community College. (n.d.). *"Best practices": Strategies to improve student retention literature review and recommendations.* Retrieved from http://www.mccneb.edu/ir/pdf/StudentRetention.pdf

Organization for Economic Cooperation and Development. (2010).Education at a glance 2009: OECD indicator. Retrieved from www.oecd.org/edu/eag2009

Owens, R. T. (2003). Retention implications of a relationship between age and GPA. *College Student Journal*, *37*, 181-189.

Pallant, J. (2005). *SPSS survival manual: A step by step guide to data analysis using SPSS*. New York, NY: Open University Press

Palmer, R. T., Davis, R. J., & Hilton, A. A. (2009). Exploring challenges that threaten to impede the academic success of academically under-prepared African American male collegians at an HBCU. *Journal of College Student Development*. 50(4), 429–445.

Palmer, R. T., & Hilton, A. A. (2008, March). *A new paradigm to examine the academic disengagement conundrum among Black males*. Session presented at the annual meeting of the National Association for Student Affairs Professionals, Atlanta, GA.

Pampel, F.C. (2000). Logistic regression a primer. Thousand Oaks: Sage Publications, Inc.

Pascarella, E. T. & Terenzini, P. T. (2005). How college affects students: Vol. 2. A third decade of research. San Francisco, CA: Jossey-Bass.

Paulsen, M. B., & St. John, E. P. (2002). Social class and college costs: Examining the financial nexus between college choice and persistence. *Journal of Higher Education, 73(3), 189-236.*

Polite, V. C., & Davis, J. E. (Eds.). (1999). *African American males in school and society*. New York: Teachers College Press. Roach, R. (2001). Where are the Black men on campus? *Black Issues in Higher Education, 18*(6), 18–24.

Provasnik, S., & Planty, M. (2008). *Community colleges: Special supplement to The Condition of Education 2008* (NCES 2008-033). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Washington, DC.

Ralls, S. (2008). Facing brutal facts: North Carolina community colleges in the new economic landscape. *North Carolina Insight, 22*(4)/*23*(1), 4-77.

Reason, R. D. (2009). An examination of persistence research through the lens of a comprehensive conceptual framework. *Journal of College Student Development*, *50*, 659-682. Retrieved from Http://search.proquest.com/docview/195181733?accountid=28180

Rendon, L. (2006). Reconceptualizing success for underserved students in higher education. National Postsecondary Education Cooperative. Retrieved from http://www.nces.ed.gov/NPEC/pdf/resp_Rendon.pdf

Rendon, L. (1994, August). *Beyond involvement: Creating validity 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.

Robinson, R. (2000). *The debt: What America owes to Blacks*. New York: Plume Books

Roessler, Billy, Stephen Katsinas, and David Hardy. 2006. ‘‘The Downward Spiral of State Funding for Community Colleges, and Its Impact on Rural Community Colleges.’’ Policy brief, University of Alabama Education Policy Center for the

Mid-South Partnership for Rural Community Colleges, Meridian, MS. Retrieved October 29, 2010 (http://ruralccalliance.com/docs/MSPBRIEFF INANCES.pdf).

Sandiford, J. R., & Jackson, D. K. (2003, April). *Predictors of first semester attrition and their relation to retention of generic associate degree nursing students.* Paper presented at the annual meeting of the Council for the Study of Community Colleges, Dallas, TX.

Schneider, M., & Yin, L. (2011). The hidden costs of community colleges. Washington, DC: American Institutes for Research.

Schutt, R. K. (2004). Investigating the social world: The process and practice of research. Thousand Oaks, CA: Sage Publications.

Scoggin, D., & Styron, R. A. (2006). Factors associated with student withdrawal from community college. *The Community College Enterprise, 12*(1), 111-124.

Seppanen, L. (2007). *Summary of empirically tested theoretical perspectives in the literature on community and technical college student persistence/ success*: Washington State Board for Community and Technical Colleges.

Shaw, K. M., Goldrick-Rab, S., Mazzeo, C., & Jacobs, J. (2006). Putting poor people to work: How the Work-First idea eroded college access for the poor. Russell Sage Foundation. New York, NY.

Singell, L. (2004). Come and stay a while: Does financial aid effect enrollment and retention at a large public university? *Economics of Education Review* 23: p. 459-472.

Smith, R. (2008). Challenges facing rural community colleges: Rural community college alliance. Retrieved from http://www.slcatlanta.org/meetings/OKC_08/presentations/ag/Smith_Tech_Colleges.pdf

Smith, R. 2010. Challenges and opportunities facing the rural community colleges. Rural Community College Alliance. Retrieved from http://www.aacc.nche.edu/Resources/aaccprograms/ate/conf2010/Documents/PreConC_Smith.pdf

Soares, L. (2009). *Working learners educating our entire workforce for cusses in the 21st century.* Retrieved from http://www.americanprogress.org/issues/2009/06/working_learners.html

Sorey, K.C., & Duggan, M. H. (2008). Differential predictors of persistence between community college adult and traditional-aged students. *Community College Journal of Research and Practice, 32*: 75-100. doi: 10.1080/10668920701380967

Sparks, P. J. & Nunez, A. (2014). The role of postsecondary institutional urbanicity in college persistence. *Journal of Research in Rural Education, 29*(6), 1-19.

Spellman, N. (2007). Enrollment and retention barriers adult students encounter. *The Community College Enterprise*, *13*(1), 63-77.

Strayhorn, T. L. (2010). When race and gender collide: Social and cultural capitals' influence on the academic achievement of African American and Latino males. *The Review of Higher Education 33,* 307-332.

Student Financial Aid Services. (2010). Retrieved from http://sfas.com/studetn-Financial-aid_FAFSA.htm

Sweet, S.A., & Grace-Martin, K. (2003). Data analysis with SPSS. Second Edition. Boston: Pearson Education, Inc.

Tabachnick, B. G. & Fidell, L. S. (2013). *Using Multivariate Statistics.* (7th ed.) Boston: Allyn and Bacon.

Taniguchi, H. & Kaufman, G. (2005). Degree completion among nontraditional college students. *Social Science Quarterly,* 86, 912-927.

Terenzini, P. T., Cabrera, A., & Bernal, E. M.. (2001). *Swimming against the tide: The poor in America.* Higher Education, Research Report No. 2001-1. College Board, New York: NY.

The Journal of Blacks in Higher Education (2009). Disappointing progress in enrollments of low-income students in America's most selective colleges and universities. *The Journal of Blacks in Higher Education.*

The Pell Institute for the Study of Opportunity in Higher Education. (2004). *Raising the Graduation Rates of Low-Income College Students.* Washington, DC: Author.

Tinto, V. (1975). Dropout from higher education: A theoretical synthesis of recent research. *Review of Educational Research, 45*, 89-125.

Tinto, V. (1987). *Leaving college.* University of Chicago Press, Chicago.

Tinto, V. (1989). Stages of student departure: Reflections on the longitudinal character of student leaving. *Journal of Higher Education, 59*, 438-455.

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

Tinto, V. (1997). Classrooms as communities: Exploring the educational climate of student persistence. *Journal of Higher Education, 68*, Ohio State University Press.

Tinto, V. (1998). College as communities: Taking the research on student persistence seriously. Review of Higher Education, 21, 167-178.

Toutkoushian, R. K. & Curtis, T. (2005). Effects of socioeconomic factors on public high school outcomes and rankings. *Journal of Educational Research, 98*, 259-269.

Townsend, B. K., Donaldson, J., & Wilson, T. (2004). Marginal or monumental? Visibility of community colleges in selective higher education journals. Paper presented at the Conference of the Council for the Study of Community Colleges, Minneapolis, MN.

Treiman, D. J. (2009). Quantitative data analysis: *Doing social research to test ideas*. San Francisco, CA: Jossey-Bass.

Tyson, K., Darity W., & Castellino, D.R. (2005). It‘s not ―a Black Thing‖: Understanding the burden of acting White and other dilemmas of high achievement. *American Sociological Review*, *70*, 582-605.

Trust, J. & Niles, S. G. (2004). Realized potential or lost talent: High school variables and bachelor’s degree completion. *Career Development Quarterly, 53*(1), 2-15.

U.S. Census Bureau. (2009). Educational attainment in the United States: 2009. Retrieved from http://www.census.gov/hhes/Socdemo/education/

United States Census Bureau. (2010). *Ethnicity and socioeconomic status.* Retrieved from www.census.gov

U. S. Census Bureau. (2011). Current population survey: Annual social and economic supplement [Data file]. Retrieved from http://www.census.gov/population/www/socdemo/race

U.S. Department of Education (2004/2009). *Black student enrollment by sector and control, gender 2003. Beginning Postsecondary Students Longitudinal Study*Power Stats*. Washington, D.C.: U.S. Government Printing O#ce.

U. S. Department of Education. (2007). Affordability, accessibility, and accountability in higher education. Proceedings of the community college virtual summit. Retrieved from http://222.2.ed.gov/about/offices/list/ovae/pi/cclo/ccvirtualsummitsummary.p

U. S. Department of Education. (2011). The college completion tool kit. Retrieved from http://www.ed.gov/sites/default/files/cc-toolkit.pdf

Vogt, W. P., Gardner, D.C., & Haeffele, L. M. (2012). *When to use what research design.* New York, NY: Guilford Press.

Volkwein, J., & Strauss, L. (2004). Characteristics of extenders: Full-time students who take light credit loads and graduate in more than four years. *The Journal of Higher Education, 75*, 203-207.

Voorhees, R. A., & Zhou, D. (2000). Intentions and goals at the community college: Associating student perceptions and demographics. *Community College Journal of Research and Practice, 24*(3), 219-232.

Walpole, M. (2003). Socioeconomic status and college: How SES affects college experiences and outcomes. *The Review of Higher Education, 27* (1), 45-73.

Wells, R. (2008). The effects of social and cultural capital on student persistence: Are community colleges more meritocratic? *Community College Review*, *36*(1), 25-46. Retrieved from http://search.proquest.com/docview/213288154?accountid=28180

Wells, R. (2009). Social and cultural capital, race and ethnicity, and college student retention. *Journal of College Student Retention: Research, Theory & Practice*, *10*(2), 103-128.

West, C. (2001). *Race matters*. New York: Vintage Books.

Windham, P. (1995, August). *The importance of work and other factors to attrition: A comparison of significancy and odds ratios for different outcomes.* Paper presented at the 24th annual conference of the Southeastern Association for Community College Research, Asheville, NC.

Wood, R. E. (2010). *Survival of rural America: Small victories and bitter harvests.* Lawrence, KS: University Press of Kansas.

Wood, J. L. (2012). Leaving the two-year college: Predictors of Black male collegian

Wood, J. L., & Turner, C. S. V. (2011). Black males and the community college: Student perspectives on faculty and academic success. *Community College Journal of Research & Practice, 35*, 1–17.

World Health Organization (2011). What do we mean by “sex” and “gender?” Retrieved from http://www.who.int/gender/whatisgender/en/index.html

Young, A., Johnson, G., Hawthorne, M., & Pugh, J. (2011). Cultural predictors of academic motivation and achievement: A self-deterministic approach. College Student Journal, *45*(1), 151-163.

Zhai, L., & Monzon, R. (2001). *Community college student retention: Student characteristics and withdrawal reasons.* (ERIC Document Reproduction ServiceNo.ED473 676), U.S. Department of Education.

Ziskin, M., Gross, J. PK., & Hossler, D. (2000). Institutional practices and student persistence: Extending the empirical record. Indiana University.