THE IMPACT OF ACADEMIC SELF-EFFICACY AND SOCIO-DEMOGRAPHIC

FACTORS ON ACADEMIC ACHIEVEMENT OF FIRST-GENERATION

COMMUNITY COLLEGE STUDENTS

A Dissertation

By

MARK ERIC BARBER

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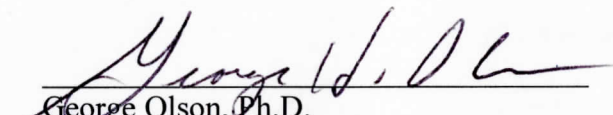
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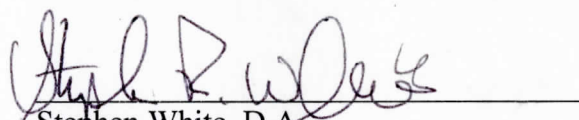Reich College of Education

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MARK ERIC BARBER

May 2009

Approved by:

_____
George Olson, Ph.D.
Chairperson, Dissertation Committee

_____
Stephen White, D.A.
Member, Dissertation Committee

_____
John Janowiak, Ph.D.
Member, Dissertation Committee

_____
Jim Killacky, Ed.D.
Director of Doctoral Program

_____
Edelma D. Huntley, Ph.D.
Dean, Research and Graduate Studies

ABSTRACT

THE IMPACT OF ACADEMIC SELF-EFFICACY AND SOCIO-DEMOGRAPHIC

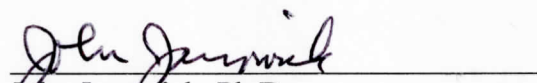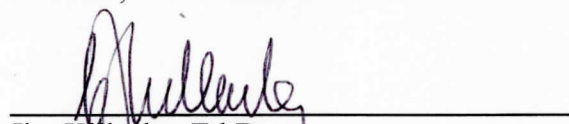FACTORS ON ACADEMIC ACHIEVEMENT OF FIRST-GENERATION

COMMUNITY COLLEGE STUDENTS (May, 2009)

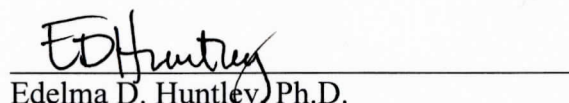Mark Eric Barber, B.S. University of South Carolina at Coastal Carolina College

M.A. Webster University

Dissertation Chairperson: George Olson, Ph.D.

Despite a growing body of research on the differences between first-generation

and non-first-generation college students, little is known about the relative effect and the

impact of academic self-efficacy and socio-demographic factors on academic

achievement of first-generation students attending community colleges. Much of the

available literature on first-generation students, defined as neither of the student's parents

had college experience, focuses on four-year colleges and universities, and therefore

cannot be generalized to smaller, two-year colleges. In fact, first-generation college

students accepted at four-year colleges and universities probably resemble traditional

students in the sense that the students participated in a rigorous high school curriculum,

had high grade point averages (GPA) and admission test scores, enrolled immediately

after high school, attended full-time, and lived on-campus.

This study focused on the overarching question: What are the relative effects and

the impact of academic self-efficacy and socio-demographic factors on academic

achievement, as determined by first-semester GPA, on first-generation community college students? To address this question, descriptive statistics were used in the preliminary analysis on data collected from the surveys along with correlation, t-test, z-test, chi-square test, and relative risk ratios to explore differences among students.

Research literature suggests first-generation college students face a myriad of complexities that puts them at a higher risk of not succeeding in college, particularly those students possessing multiple risk factors. For the purpose of this study, a risk factor is defined as a characteristic or variable that puts a student at greater risk for not being academically successful. Not only are they disproportionately overrepresented in the most disadvantaged groups relative to enrollment and graduation rates, first-generation students differ from their peers in many respects that reduce the likelihood that they will be academically successful in college.

The findings in this study support the point of view that academic self-efficacy appears to be a significant factor contributing to academic achievement in that higher levels of academic self-efficacy lead to higher first-semester GPA between first-generation and non-first-generation community college students. On the other hand, socio-demographic risk factors did not appear to appreciably influence academic achievement, specifically first-semester GPA, of students in this particular study.

Therefore, this study adds to the limited body of knowledge and addresses the gap in literature regarding differences in factors relating to academic achievement of first-generation and non-first-generation college students at community colleges. The findings should have important implications for research and instruction within the community college environment due to the large percentage of first-generation students.

"rock" during the tough times and given up so much of herself. Without a doubt, I can honestly say she is truly my best friend, my inspiration, and the love of my life. Her unconditional love has provided our family with a beacon of light and has guided me during those times that I had felt I had lost my ways. My children, Tyler and Alex, sacrificed so much in my pursuit of "dad's dream" and I can only hope that I can make up for some lost time. Lastly, I would like to dedicate this work to my parents, Carson and Eloise Barber, who although are no longer with me in person— were with me in spirit every step of the way.

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CHAPTER I:

INTRODUCTION

Statement of the Problem

One of the most important challenges for community colleges is to meet the needs of a very diverse student population, including traditional and non-traditional students (Cross, 1990; Rendon, 2000). One group of particular importance to community colleges should be first-generation college students, a subgroup of the non-traditional student, as most first-generation students begin their educational experiences at community colleges (London, 1992; National Center for Education Statistics, 1999; Rendon, 1995; Richardson & Skinner, 1992; Willett, 1989).

First-generation college students who are the first in their immediate families to experience college often face numerous challenges. Inherent to the problem is the fact that these students cannot always rely on support and guidance from their parents, who lack the benefit of the college experience, or may otherwise be unable to offer the kind of support that college-educated families can provide. Although the issues and challenges facing first-generation students are daunting, they are not insurmountable. While some excel academically, many first-generation students are faced with multiple socio-demographic risk factors: low household income, single-parent households, dependents of their own, academically challenged for college-level work, part-time employment, low self-esteem, etc. making it even more difficult to succeed in college. Over the past few

decades, researchers have carried out several studies on socio-demographic variables and their effects on academic achievement. The evidence revealed a strong correlation between socio-demographic factors and the academic achievement of students (Astone & McLanahan, 1991; Sputa & Paulson, 1994; White, 1982).

Similarly, there have been numerous studies conducted which have established relationships between self-efficacy and academic achievement (Bandura, 1997; Chemers, Hu, & Garcia, 2001; Greene & Miller, 1996; Multon, Pajares, 1996; Pintrich & DeGroot, 1990; Silver, Smith, & Greene, 2001). In fact, research reveals there is a strong linkage between self-efficacy and academic achievement in first-generation community college students who make up one of the largest populations of student enrollment (Silver, Smith, & Greene, 2001). Likewise, other studies support the mediating effects self-efficacy has on academic achievement (Greene & Miller, 1996; Pintrich & DeGroot, 1990).

Academic self-efficacy and socio-demographic factors are significant variables contributing to the success of first-generation college students. Thus a greater understanding of these two factors will be very beneficial to educators with interest in student success and graduation rates as colleges seek to understand the values, beliefs, and difficulties that first-generation students encounter during the process. By doing so, it should allow for more focused efforts in college intervention efforts to improve integration, retention, and graduation rates.

Purpose of the Study

The purpose of this study was to assess the relative effects and the impact of academic self-efficacy and socio-demographic factors on academic achievement, as determined by first-semester grade point averages of first-generation community college

students. Although first-generation students are more likely to attend two-year, public colleges, the large majority of research on first-generation college students focuses primarily on four-year colleges and universities and therefore cannot be generalized to two-year community colleges. Therefore, this study aims to fill a gap in existing literature on academic success of first-generation students at community colleges.

One of the more frequently used practices in the study of education over the past few decades has been the application of self-efficacy behavior (Betz & Voyten, 1997). Studies have reported that self-efficacy has been shown to hold greater explanatory and predictive power for academic outcomes than many other determinants (Pajares & Miller, 1995). Moreover, Hellman and Harbeck (1997) discovered first-generation students generally possess lower levels of self-efficacy which affect student's confidence levels resulting in lower grade point average (GPA).

Low self-efficacy also has been linked to low academic motivation, such as not persisting at a task or not working hard (Schunk, 1991). Bandura (1977) postulates that self-efficacy affects college outcomes by increasing students' motivation and persistence to master challenging academic tasks and by fostering the efficient use of acquired knowledge and skills. Bandura (1977) argues that if a person believes that he cannot successfully complete a task, then he is more likely to be unsuccessful—resulting in a self-fulfilling prophecy. As a result, a person with low self-efficacy will also have negative expectations of themselves, thus leading to the avoidance of those certain tasks. Similarly, in lieu of avoidance, when there is an increase in self-efficacy expectations, there will be an increase in the frequency of behavior. Bandura believes that a better

understanding of self-efficacy beliefs, leads to a better understanding and predictability of behavior.

It is likely to expect that students who have low academic self-efficacy are less likely to seek help, and this behavior is supported by research (Karabernick & Knapp, 1991; Linnenbrink & Pintrich, 2003). Students with high levels of self-efficacy are more likely to seek help and persist (Linnenbrink & Pintrich, 2003). In regards to student study hours, Torres and Solberg (2001) found a positive association between academic self-efficacy and the motivation to study. The authors assert that a student's level of self-efficacy is influenced by past successes and failures, which then impacts future successes or failures in academic achievement or attrition rates. Pajares (1996) reported self-efficacy to be a strong predictor of college student performance, and more recently, Gore's (2006) findings suggest that academic self-efficacy beliefs can be used to predict college students' academic performance and persistence.

The first hypothesis theorized that relationships exist between levels of academic self-efficacy and first-semester GPA in that students experiencing higher levels of academic self-efficacy will have higher first-semester GPAs. It was also expected that differences exist between academic self-efficacy in student classification in that first-generation students will have lower levels of academic self-efficacy than non-first-generation college students.

Likewise, much evidence suggests that socio-demographical factors play an important role in academic success and retention of students. Moreover, research indicates a significant and consistent relationship between college academic success and retention, with more academically successful students persisting in their studies to a

greater degree than less academically successful students (McGrath & Braunstein, 1997; Ryland, Riordan, & Brack, 1994). Given this relationship, it is quite predictable that the study will uncover risk factor commonalities in both academic success and student attrition.

Although student attrition was not the focus of this study, student demographics and environmental factors appear to directly affect student persistence in college as well (Peltier, Laden, & Matranga, 1999). In their study of non-traditional undergraduate student attrition, John P. Bean and Barbara S. Metzner developed a conceptual model of student attrition that was directed specifically at the non-traditional student who constitutes the largest segment of community college population. The nontraditional student is typically defined by using age as the primary criteria, but can also include background characteristics, and risk factors. According to Bean and Metzner (1985), the primary difference in attrition between traditional and non-traditional students is that non-traditional students are more affected by the external environment than by a social integration variable. Their findings are in contrast to Tinto's (1987) research of student attrition which focused primarily upon the role of the institution and its influence on the academic and social system of the institution. Tinto's postulation is that compatibility among student's attributes, abilities, motivation, and institutional characteristics are the factors most responsible for persistent behavior.

On the contrary, Bean and Metzner suggest that a non-traditional student is less influenced by institutional and social integration and more influenced by the value of the education and encouragement from friends, employers, and family. As a result, the Bean and Metzner model proposes that outside encouragement, not necessarily on-campus

support, emerges as a key to retention. Bean and Metzner's (1985) study strongly suggests that social integration is not an important factor in the attrition process for non-traditional students, and accordingly, they did not include it as a primary component of their model. Grosset (1991) confirmed their findings with his study of community college students which found that integration was more important to younger students aged 17–24 than older students 25 years or older. Bean and Metzner's model of attrition focuses less on academic variables (those variables internal to the college environment) and more on environmental variables (those variables lying outside of the college). The argument here is although socialization works fine in most situations, it does not necessarily serve the non-traditional student population (part-time students and those working full-time with family obligations) very well.

Bean and Metzner's (1985) model posits that a non-traditional student's drop-out decision is based upon four sets of variables and two sets of outcomes. The four sets of variables are: (1) academic, (2) intent to leave, (3) background, and (4) environmental factors which have substantial and direct impact on dropout decisions. All of these variables affect a student's intent to leave. The two sets of outcomes are: (1) academic, including the college GPA, and (2) psychological, including utility, satisfaction, goal commitment, and stress. Therefore, they conclude that environmental factors have a greater impact on departure decisions among adult students than academic variables. Environmental or socio-demographical variables are defined as finances, hours of employment, outside encouragement, family responsibilities, and opportunities to transfer, all of which are external to the college. The Bean and Metzner attrition model, which is now widely accepted and used by community colleges, seems to fill that void

left by so many earlier models that did not adequately address the unique needs of the non-traditional student.

Unfortunately, the literature shows that students who enter community colleges are more likely than their peers at four-year colleges and universities to possess external environmental risk factors that make it more difficult for them to succeed in college (Bryant, 2001; Cofer & Somers, 2001). In fact, it estimated that nearly 25% of the community college student population has multiple risk factors (Coley, 2000). With multiple or cumulative risk factors, the more risk characteristics a student has, the greater the chance that he or she will not be academically successful or complete college. Moreover, during the first semester of college, first-generation students have a higher risk of dropping out and not returning for the second year, and are more likely to have lower first-semester grades (Inman & Mayes, 1999; Riehl, 1994).

The second hypothesis posited that differences exist between the number of self-reported socio-demographic risk factors and first-semester GPA's in that students reporting multiple risk factors will have lower first-semester GPA's while students experiencing one or no socio-demographic risk factors will have higher first-semester GPA's. It was also expected that differences exist based on the number of self-reported socio-demographic risk factor exposures between student classification in that first-generation students will have higher numbers of socio-demographic risk factors than non-first-generation community college students.

Research Questions

Two research questions that guided the study are:

1. What are the effects of academic self-efficacy and first-semester GPA on first-generation and non-first-generation community college students?

2. What are the effects of selected socio-demographics factors and first-semester GPA on first-generation and non-first-generation community college students?

Definitions

For the purpose of this study, the following definitions apply:

Academic Self-Efficacy — Described as the extent, or confidence, to which students believe that they will be able to succeed in school (Bandura, 1977).

Academic Achievement — For the purpose of this study, a first-semester GPA of 2.5 or higher on a 4.0 scale is considered more academically successful, while a first-semester GPA of less than 2.5 on a 4.0 scale is considered less academically successful.

Cultural Capital — A combination of knowledge, skill, and/or education which gives individuals a higher status in society, including high expectations (Lareau, 1987). In educational contexts, parents provide children with cultural capital, the attitudes and knowledge that make the educational system a comfortable, familiar place in which they can succeed easily.

First-Generation College Students — While there are varying definitions of what actually constitutes a First-Generation college student, the definition most commonly used is that neither of the student's parents had college experience

(Billson & Terry, 1982; Brooks-Terry, 1988; Riehl, 1994; Terenzini, Springer, Yaeger, Pascarella, & Nora, 1996; Williams, 1998).

Multiple Risk Factors — For the purpose of this study, students possessing two or more risk factors which may lead to lower first-semester GPA such as race/ethnicity, single parenthood, having dependents, employment status while attending college, delayed enrollment after high school, college enrollment status whether part-time or full-time, and first-generation status.

Non-First-Generation College Students — Students who have at least one parent with college experience.

Non-Traditional College Students — Typically defined as students over 24 years old, married, having dependents, not living on campus, and/or attending college part-time, or as any student who does not follow the path directly from high school to college.

Relative-Risk Ratio — The risk ratio of an event (e.g., higher or lower GPA) relative to exposure (e.g., risk factors) between two groups (e.g., first-generation and non-first-generation students).

Socio-Demographic Factors — Factors such as age, gender, race, marital status, parents' educational levels, employment, socioeconomic status, grade point average, etc.

Significance of the Study

Much of the available literature on first-generation students, defined as neither of the students' parents had college experience, focuses on four-year colleges and universities, and therefore cannot be generalized to smaller, two-year colleges. In fact,

first-generation college students accepted at four-year colleges and universities probably resemble a traditional student in the sense that the students participated in a rigorous high school curriculum, had high grade point averages and admission test scores, enrolled immediately after high school, attended full-time, and lived on-campus.

Despite internal college intervention programs (e.g., early intervention programs, campus-based engagement, cultural socialization, faculty and staff development, etc.) designed to increase academic preparedness among underrepresented populations, first-generation college students face a myriad of complexities that puts them at a higher risk of not succeeding in college, particularly those students possessing multiple risk factors. Not only are they disproportionately overrepresented in the most disadvantaged groups relative to enrollment and graduation rates, first-generation students differ from their peers in many respects that reduce the likelihood that they will be academically successful in college.

Therefore, this study adds to the limited body of knowledge and addresses the gap in literature regarding differences in factors relating to academic success of first-generation and non-first-generation college students at community colleges. The findings should have important implications for research and instruction within the community college environment due to their large percentage of first-generation students.

Organization of the Study

The study is organized into five chapters. Chapter One introduces the topic, purpose of the study, research questions, and significance of the study. Chapter Two reviews the literature concerning GPA as a predictor of academic success, socio-demographic factors and academic self-efficacy on academic achievement, and challenges of first-generation college students. Chapter Three describes the research

design, subjects, instruments, data collection, and sampling techniques used to analyze the data. Chapter Four reports the results of the study with emphasis on relationships between academic self-efficacy and socio-demographics risk factors along with their relative effect and impact on academic achievement. Chapter Five discusses the overview of the study, key findings and conclusions, limitations, and implications for future research.

CHAPTER II:

REVIEW OF THE LITERATURE

This study was designed to assess the relationship and potential impact of academic self-efficacy and socio-demographic factors on academic achievement, as determined by first-semester GPA, on first-generation community college students. Factors that affect and impact academic success both favorably and adversely on first-generation community college students were explored in this study.

Grade Point Average as a Predictor of Academic Success

In the field of higher education, few issues have roused as much debate and attention as those surrounding academic success. Student's academic success has been a highly debated discussion with the state and federal accountability systems for more than a decade, particularly as measured by retention and graduation rates. According to Berkner (2002) with the National Center for Education Statistics, every year more than one million full-time, degree-seeking students begin their undergraduate careers at four-year colleges and universities with every hope and expectation of earning their baccalaureate degree. Of those students, fewer than 40% will actually graduate within six years and barely 60% will make it out in ten years. With these distressing drop-out statistics, it is no wonder that student retention and the factors responsible for it are a growing concern among educational administrators.

It is important to note that there are no standard definitions for student or academic success. The meaning may vary across educational settings, within individual institutions, or according to student categorization. Thus, defining student or academic success and effectively measuring it at the student and institutional levels is not nearly as straightforward as it might seem. For example, student success extends well beyond the two traditional markers of persistence and graduation (Perna & Thomas, 2007). While there are many ways to define academic success, one of the more frequently used academic measures in higher education is Grade Point Average (GPA). As a quantitative indicator for academic achievement, it is often used also as a predictor of student or academic success and is directly linked to retention in college. Not surprisingly, the literature revealed that students possessing low GPAs were more likely to prematurely leave college as a result of academic failure (Robbins, Allen, Casillas, Peterson, & Le, 2006).

A large body of literature suggests that GPA predicts college performance quite well, particularly first-year grade point average (Kuncel, Hezlett, & Ones, 2001). First-year grade-point average appears to be a strong predictor of student success in college (Pascarella & Terenzini, 1991) and is considered a better indicator of continued enrollment and academic success than many other background factors including minority status, gender, and socioeconomic status (Allen, 1999; McGrath & Braunstein, 1997). In fact, GPA is more predictive than these other factors combined when it comes to student departure (Allen, 1999; McGrath & Braunstein, 1997). Furthermore, there appears to be a link between students who do not adapt well to the college environment and lower GPAs. Research finds that early dismissals are also more prevalent in students who have lower

GPAs and do not adjust well to college (Tinto, 1993). In fact, GPA is considered the primary success indicator of whether students have acclimatized to various factors referred to as the college experience (Kuh, 1999; Pascarella & Terenzini, 1991).

First-semester GPA is also predictive of educational outcomes and achievement. The first-semester in community college is a pivotal point in students' academic careers. The literature posits that students whose first academic experience in college is positive and successful are more likely to remain in school and perform better academically. By contrast, students whose first experiences are less successful are far less likely to persist towards their goals. Students who fail during the first-semester of college frequently also fail to continue on toward graduation (Astin, 1993; Tinto, 1993). During the first semester of college, first-generation students have a higher risk of dropping out and not returning for the second year, and are more likely to have lower first semester grades (Inman & Mayes, 1999; Riehl, 1994). Often first-generation students lack the time management and financial skills they need to be successful (Hsaio, 1992). First-generation students expressed a greater fear of failing in college than other students (Bui, 2002), predicted they would have lower semester grades than second-generation students did (Riehl, 1994), and expected to take longer to complete their degree programs (Terenzini, Springer, Yaeger, Pascarella, & Nora, 1996; Warburton, Bugarin, & Nuñez, 2001).

For the purpose of this study, a first-semester GPA of 2.5 or higher on a 4.0 scale is considered more academically successful, while a first-semester GPA of less than 2.5 on a 4.0 scale is considered less academically successful.

Although undergraduate GPA is directly linked to academic achievement in college students, it is also indirectly linked to their overall academic success. Therefore, other factors influencing academic success should also be examined more closely to determine their impact on the success of students (Pascarella & Terenzini, 1991). As a result, this study looked at other factors purported to influence academic success as well. Nonetheless, the primary purpose of this study was to assess the relative effects and the impact of two independent variables, socio-demographic factors and academic self-efficacy, on the dependent variable of academic achievement, a component of academic success, on first-generation community college students.

The Impact of First-Generation Status on Academic Success

While the aforementioned issues are not intended to provide a complete overview of the difficulties facing first-generation students, they do illustrate the disconnect that can occur between first-generation students and non-first-generation students (who have at least one parent with college experience). First-generation students have been the focus of a growing body of research in postsecondary education primarily because of an increasing demographic diversity and growth in the number of first-generation college students (Choy, 2001). However, citing research can be difficult, given the varying definitions of what actually constitutes a first-generation college student. McConnell (2000) states most researchers have defined first-generation in one of three general ways. First, the broadest definition of a first-generation college student, and the one used least in her research, is that neither parent had completed a college degree (U.S. Department of Education, 1996; Willett, 1989). Second, the most restrictive definition used by researchers is that a student must be the first member of the family to attend college

(Hellman & Harbeck, 1997; York-Anderson & Bowman, 1991). Third, the definition of first-generation students used most frequently by researchers is that their parents had no college experience (Billson & Terry, 1982; Brooks-Terry, 1988; Riehl, 1994; Terenzini et al, 1996; Williams, 1998). For the purposes of this study, I have chosen the definition most commonly used— that neither of the student's parents had college experience.

In today's diverse society, a large number of the students enrolling in college are first-generation college students possessing unique characteristics. One of the most unique characteristics of their population is that "first-generation status itself is a risk factor" even after taking enrollment and demographic characteristics into account (Chen, 2005; Choy, 2001; Horn & Nuñez, 2000; Nuñez & Cuccaro-Alamin, 1998; Warburton et al., 2001). Accordingly, Chen (2005) reported that "first-generation status" had a negative impact on students' academic skill development in several areas, including math, science, and foreign language. As the literature has revealed, compared to students whose parents had college experience, first-generation students are different in many ways notwithstanding the risk factor classification, which makes it even more difficult for first-generation students to be academically successful in college.

Unique Characteristics of First-Generation Students

Empirical research on first-generation college students also has helped to identify several unique characteristics of this population. Consistent with other researchers, first-generation community college students were more likely to be female, to be older, to have lower incomes, to be married, and to have dependents (Inman & Mayes, 1999; Nuñez & Cuccaro-Alamin, 1998). Racial and ethnic minority groups are also disproportionately represented among first-generation students, with Latino students

being most heavily represented (Nuñez & Cuccaro-Alamin, 1998; Warburton et al., 2001).

Additionally, they differ from their peers in many ways prior to college enrollment, including their demographic characteristics, the importance they place on college, their aspirations, their perceived level of family support for attending college, their institutional choice and commitment, their pre-college knowledge and behaviors, and their existing academic skills and confidence levels. The literature examining their program of study also reflects differences in their choice of major. For instance, research finds that first-generation students are more likely to choose a major in business or vocational/technical field, while their non-first-generation counterparts are more likely to choose a major in science, mathematics, engineering and architecture, humanities, arts, or social sciences. Although the reasons for their preferences are unknown, weak academic preparation or perceived low-earning potential may be a contributing factor (Montmarquette, Cannings, & Mahseredjian, 2002). Other characteristics that differentiate first-generation college students include a higher likelihood to live at home and work part-time (Brooks-Terry, 1988) and a tendency to have lower family incomes or to work more hours per week (Inman & Mayes, 1999).

Other unique characteristics of this population include five specific areas in which first-generation college students differ demographically from other college students. Differences are evident in the lack of 1) parental experience with the college application process, 2) how these students prepare for college both personally and academically, 3) why they choose to attend college, 4) their personal experiences, and 5) overall personality traits. Horn and Nuñez (2000) found that first-generation students are less

likely to choose high school programs of study with their parents, while York-Anderson and Bowman (1991) found that these same types of students perceive less support from their families for attending college. First-generation college students also face other non-academic challenges as they usually come from poorer families (Terenzini et al., 1996) and generally possess lower levels of self-efficacy (Hellman & Harbeck, 1997), and self-esteem (McGregor, Mayleben, Buzzanga, Davis, & Becker, 1991) than students whose parents had college experience.

After interviewing first-generation students, London (1989) accentuated the challenges and difficulty of achieving upward mobility: "It is only when we see that mobility involves not just gain but loss, most of all, the loss of a familiar past, including a past self — that we can begin to understand the attendant periods of confusion, conflict, isolation, and even anguish that first-generation students report" (p. 168). Although brief, London's passage captures the feelings that many first-generation students have no doubt experienced.

Despite college intervention programs designed to increase academic preparedness among underrepresented populations, first-generation college students face a myriad of complexities that put them at a higher risk of not succeeding in college. Not only are they disproportionately overrepresented in the most disadvantaged groups relative to enrollment and graduation rates, first-generation students differ from their peers in many respects that reduce the likelihood that they will be successful in college. Much research supports the findings that first-generation students have a greater likelihood to drop out of school prematurely and experience more difficulty in obtaining academic success.

Challenges of First-Generation College Students

The review of the literature has identified a number of problems that put first-generation students at risk for not succeeding in postsecondary education. Often, first-generation students are less prepared academically and psychologically for college. Research has also shown that first-generation students are less likely to have taken college entrance exams such as the SAT and ACT (Warburton, Burgarin, & Nuñez, 2001). If admitted to a college, they typically have lower high school GPAs and lower SATs (Riehl, 1994). Studies have also shown that first-generation students have poor pre-college preparation, lower career aspirations, lack of family support, lack of faculty and peer support, fear of the college environment, and poor study skills or habits (Billson & Terry, 1982; Riehl, 1994; Terenzini et al, 1996; York-Anderson & Bowman, 1991). In addition to many constraints placed on them, many are faced with a multitude of risk factors that make it even harder to succeed academically. Listed below are some common risk factors along with their adverse affect on academic success:

Living Off-Campus. Pike and Kuh (2005b) found that first-generation students reported making less progress in their learning and intellectual development, though this was due more to their aspirations and living off-campus than to background characteristics. This discovery is generally consistent with the finding that students who lived on-campus exhibited greater, but not statistically significant, gains in reading and mathematics during the first-year of college compared with those who commuted (Pascarella, Bohr, Nora, Zusman, Inman, & Desler, 1993). Billson and Terry (1982) suggest that this academic achievement gap may be in part due to the tendency for first-

generation students to spend almost twice as much time working part-time or full-time jobs (as compared to their second-generation counterparts).

Study Habits and Preparedness. First-generation students may not have or be able to create a designated place or time to study at home, and they may be criticized for devoting time to school rather than family responsibilities (Hsiao, 1992). Additionally, first-generation students typically have less well developed time management and other personal skills, less knowledge about higher education, and less experience navigating bureaucratic institutions (London, 1989; Nuñez & Cuccaro-Alamin, 1998; Terenzini et al, 1996; York-Anderson &Bowman, 1991). All of these factors inhibit the academic success of first-generation students and decrease their rates of attaining a degree (Billson & Terry, 1982).

Enrollment and Graduation Rates. Research suggests that the odds are stacked against first-generation students succeeding in college (Baum & Payea, 2004). First-generation students on average also are less likely to transfer to four-year institutions (Bailey, Jenkins, & Leinbach, 2005) and more likely to leave college or higher education altogether than were other students, although usually for reasons other than academic failure (Brooks-Terry, 1988). Rather, it may be due in part to inappropriate college choice, lack of faculty and peer support, fear of the college environment, poor study skills or habits, family-related constraints, and a myriad of other factors.

Institutional Choice. Institutional choice is more heavily influenced by cost of tuition, financial aid, perceptions of the amount of homework required, and being able to live at home and to work while attending school. Based on the research literature, first-generation students also are more likely to choose institutions that are close to home

and/or allow them to live at home and have flexibility in their scheduling, since many are working full-time, and going to school part-time (Inman & Mayes, 1999; Nuñez & Cuccaro-Alamin, 1998).

Promoters of Academic Success of First-Generation College Students

Why do some first-generation students succeed academically when so many others fail? While there is surprisingly little research on the subject, several conclusions can be drawn from the existing literature. First, many of the same characteristics which define successful students among all students are also equally important among first-generation students, such as academic preparedness, student characteristics (i.e., study habits, work habits, coping strategies), students' perceptions of faculty behavior (teaching styles), the perceived culture of support at the school, financial aid, college counseling, parental support, and gender.

Second, lesser known "intrinsic" characteristic factors may also be predictors of success for first-generation students to include self-efficacy, self-directed learning, and motivation to succeed. Motivation to succeed might be the biggest reason why some students persist even as they "struggle" with barriers to success. Many researchers support the assertion that student characteristics are vital to student success as studies of first-generation students suggest the important role that student characteristics and behaviors, including expectations and student effort, play in student persistence and other measures of success in college (Pike & Kuh 2005; Terenzini et al. 1996).

Community College and the First-Generation Student

Community colleges are the "point of entry" for large numbers of students who have been underserved by traditional higher education (Cohen & Brawer, 2003; Rhoads

& Valadez, 1996).While four-year colleges and universities have their share of first-generation students, many disadvantaged students begin their educational experiences at a community college due to several factors which include, but are not limited to, flexibility of class schedules, proximity to home, lower tuition cost, and/or their own academic preparation which is not competitive enough to gain admission to a four-year institution.

One of the most important challenges for community colleges is to meet the needs of a very diverse student population, including traditional and non-traditional students (Cross, 1990). One group of particular importance to community colleges should be first-generation college students, a subgroup of the non-traditional student, as many first-generation students begin their educational experiences at community colleges (Richardson & Skinner, 1992; Willett, 1989). First-generation college students are important to community colleges for two primary reasons: (1) First-generation college students often represent a large segment of the community college population (Willet, 1989) and have distinct goals, motivations, and constraints (Cross, 1990; Terenzini, Springer, Yaeger, Pascarella, & Nora, 1996), and (2) An understanding of first-generation students will allow for more focused recruiting, program development, retention, and higher graduation rates.

Although community colleges have much to offer first-generation students, many studies indicate that America's higher education institutions, particularly community colleges, have significant room to improve their retention and completion rates. Research finds that approximately one-half of community college students fail to return after the first year and eventually fail to obtain a certificate or degree (Brock & LeBlanc, 2005).

Minority and first-generation students fare even worse in terms of persistence (Stage & Hossler, 2000), which is equally disturbing. Notwithstanding, community colleges have played a significant role in breaking down the barriers encountered by minorities, women, and low academic achievers seeking higher education (Cohen & Brawer, 2003). New immigrants, first-generation college students, and working adults (the categories with the highest attrition rates) returning to college after an absence from education for a number of years often find that community colleges are a "safe haven" in which to begin their education. Although it is apparent that community colleges play a vital role in assisting first-generation students achieve long-term educational, social, and economic goals—many community college students, however, have one thing in common: They need remedial education. In fact, nearly 42% of freshmen at public 2-year institutions need developmental education in math, reading, and/or writing (National Center for Education Statistics, 2003). These observations are supported by research which indicates that many students, particularly first-generation students, come to college requiring academic remediation and that faculty complaints about student under preparedness are on the rise (Levine & Cureton, 1998). The lack of an appropriate emphasis on academic work in high school is reflected in the rising cost of remediation, as more college freshmen enroll in remedial writing, math, and science classes. Of course, developmental courses increase the number of semesters required to complete a degree. The extra time commitment can be overwhelming for many, especially ethnic minorities or working adults, no doubt causing many to leave before graduation.

Community colleges' commitment to open access brings with it the challenge of educating a culturally diverse student population. The student population of American

community colleges is as diverse as its mission. In fact, community colleges have more ethnic minorities enrolled than any other American institution of higher education (Cohen & Brawer, 2003). Not surprisingly, the community college student population is representative of the state and local community. For example, North Carolina's total population is 22% African American and 14.6% Hispanic. Correspondingly, the North Carolina Community College System reports an African American student population of 21.8% and Hispanic student population of 12.3% (Cohen & Brawer, 2003).

According to Cohen and Brawer, minorities entering community colleges are from lower socioeconomic classes, have lower academic abilities, and possess lower educational aspirations. As a result, community colleges are a second chance for first-generation ethnic minorities, providing higher education opportunities that offer: (a) flexible programs and schedules, (b) affordable tuition rates, (c) accessible locations, (d) part-time enrollment, and (e) open admission. Educational theorists agree that community colleges provide special services and post-secondary opportunities for many minorities that might not otherwise enroll in college.

Community colleges play a vital role in American society, helping millions of adults to achieve their academic and personal goals and preparing workers for the high-tech economy. The literature suggests that community colleges, through open-access, provide first-generation and minorities with the greatest institutional opportunity to advance their educational and social mobility. Because of their low cost and accessibility, community colleges are especially important institutions for low-income students, students of color, and first-generation college students. Unfortunately, far too many students end up dropping out of community college without earning a certificate or

degree or transferring to another college or university. In fact, in only half the states, slightly more than 50% of first-year students at community colleges return for a second year (NCPPHE, 2002). While poor academic preparation and other challenges faced by students, such as having to work full time or being a single parent, are part of the explanation, policymakers are increasingly holding community colleges accountable for student performance.

The Impact of Socio-Demographic Factors on Academic Achievement

A voluminous body of research suggests that background factors are associated with academic achievement. A notable body of literature (Desjardins, McCall, Ahlburg, & Moye, 2002; Pascarella, Pierson, Wolniak, & Terenzini, 2004; Paulsen & St. John, 2002; Pike & Kuh, 2005; Terenzini et al., 1996) has established that student and demographic characteristics are associated with positive and negative student outcomes in academic settings. These studies support earlier findings that also suggest socio-demographic characteristics influence academic achievement of students. Moreover, prior research makes it clear that certain socio-demographic factors put students at risk and make it even more difficult for "students at community colleges to succeed" (Coley, 2000; Hoachlander, Sikora, & Horn, 2003). These specific demographic factors include, but are not limited to: first-generation college status, first-semester first-year GPA, delayed entry, socioeconomic status, racial, ethnic, and gender, cultural and social capital, parents' educational levels, part-time enrollment, full-time work, low learning and skill ability, financial independence and/or financial issues, having dependents other than spouse, single parenthood, high school dropout or GED recipient, social and academic integration, and lack of encouragement from family and/or peers. In

combination, these factors reduce the chances that first-generation students will be academically successful.

Coley (2000) found that these socio-demographic risk factors are more common among community college students than other students who attend four-year colleges and universities. Likewise, other researchers have supported Coley's finding that students at community colleges are more likely than are their peers at four-year colleges and universities to possess socio-demographic risk factors that make it more difficult to succeed in college (Bryant, 2001; Cofer & Somers, 2001). In fact, Coley estimated that approximately 75% of the community college student population has at least one demographic risk factor, and that 25% of community college students have multiple risk factors (consisting of at least four or more characteristics) while only about 4% of students at public four-year institutions had the same risk. It was hypothesized that the more risk characteristics a student has, the greater the chance that he or she will not be academically successful or complete college. Additionally, 26% of students in two-year institutions have no risk factors in comparison to 70% of students in four-year institutions. However, as if these risk factors were not enough, research has also shown that "first-generation status itself is a risk factor," even after taking demographic and enrollment characteristics into account (Chen, 2005; Choy, 2001; Horn & Nuñez, 2000; Nuñez & Cuccaro-Alamin, 1998; Warburton et al., 2001).

According to a national study by the Educational Testing Service for the years 1995-1996, Coley (2000) further reports:

Almost one-half (48%) of beginning community college students had delayed entry (did not enter college in the first year after high school). Forty-six percent of

first-time entrants into the community colleges enroll part-time (taking fewer than twelve hours) as compared to 11% of first-time students attending public four-year institutions. Thirty-five percent of first-time entrants into community colleges work full-time compared to 11% in four-year colleges and about 35% of community college students are financially independent and approximately one-fifth have dependents (p.3).

A number of additional factors related to academic success are found in the research literature. Following is a summation of these findings:

Risk Factors Affecting Academic Success

Socioeconomic Status. The effects of poverty and income on educational outcomes are well established. Socioeconomic status is a broad concept that comprises three main dimensions: occupation, education and wealth (Western, McMillan, & Durrington, 1998). In the higher education context, the dimensions relating to parental occupation and education appear to be most relevant. According to Astin (1993), those entering freshmen who are most likely to graduate within four years are from high socioeconomic levels. Socioeconomic levels also played a major role in persistence as students from families with higher incomes tend to persist more than students from families with lower incomes (Cabrera, Stampen, & Hansen, 1990; St John, Kirshstein, & Noell, 1991). Hence, higher socioeconomic status students' comparatively better educational outcomes are due, in part, to highly educated parents (Haveman, Wolfe, & Spaulding, 1991). By contrast, research has shown that young people with lower socioeconomic status have lower GPAs and lower rates of college attendance and graduation (Bainbridge & Lesley, 2002; Haycock, 2001). Among those with low

socioeconomic status, minority students in particular tend to have lower aspirations for college (Kao & Tienda, 1998).

First-Year Grade Point Average (GPA). As stated earlier, a large body of literature suggested that GPA, particularly first-year grade point average, predicted college academic success quite well (Kuncel, Hezlett, & Ones, 2001). First-year grade point average (GPA) also appeared to be a strong predictor in other academic measures such as persistence and graduation (Pascarella & Terenzini, 1991). In fact, Belcheir (1997) found that first semester GPA "was the most important predictor for retention" (p.7). Additionally, prior research identifies high school grade point average as a predictor of students' first-year academic performance at college (Murtaugh, Burns, & Schuster, 1999). While this study's focus was not retention, the literature also revealed that student's retention rates were also related to the college in which the student first enrolled and how well they did academically during the first year.

Delay in Enrollment. First-generation students are also more likely to delay enrollment after high school, attend two-year institutions, attend part-time and work full-time, and live off campus, all of which contribute to their being less likely to get involved with campus organizations and to have more difficulty adjusting to college (Choy, 2001; Pascarella, Wolniak, Cruce, & Blaich, 2004; Pike & Kuh 2005; Richardson & Skinner 1992; Terenzini et al., 1996; Warburton et al., 2001). Research consistently shows that delaying postsecondary enrollment, for whatever reason, reduces the likelihood that the student will persist and complete a degree program (Adelman, 2006).

Race/Ethnicity and Gender. It is widely believed that the racial, ethnic, and gender dynamics within classrooms (i.e., role-model effects, stereotype threat, teacher

biases, etc.) are an important determinant of academic achievement, in general, and of the minority/non-minority achievement gap, in particular. However, it should be noted that such studies are very complicated because variables other than race/ethnicity, such as socioeconomic status, academic preparation, and others that are inherent to minorities, often confound isolating racial and ethnic as a factor in persistence. Nonetheless, Stage and Hossler (2000) conclude that minority students are less likely to persist, have differing experiences, and demonstrate more behaviors leading to attrition than their white counterparts. On campus, first-generation students, particularly those from racial and ethnic minority backgrounds, often describe themselves as unprepared for the isolation and alienation they felt upon entering college (Richardson & Skinner, 1992). Interestingly, according to Guido-DiBrito (2002), women make up more than half of today's college students and tend to persist at higher rates than men.

Social and Cultural Capital. Each social class possesses social and cultural capital, which parents pass on to their children as attitudes, preferences, and behaviors so that their children can function in society (Lamont & Lareau, 1988). These attitudes, preferences, and behaviors, otherwise known as social and cultural capital, can be defined as a combination of knowledge, skill, and/or education which gives individuals a higher status in society, including high expectations (Lareau, 1987). In educational contexts, parents provide children with cultural capital, the attitudes and knowledge that make the educational system a comfortable, familiar place in which they can succeed easily. Bourdieu (1986) suggested theories of cultural and social capital offer plausible explanations for the attitudinal and behavioral differences between first-generation students and their peers. First-generation students, unlike those students who have parents

with college experience, typically cannot call upon an accumulation of cultural capital to solve problems or to make informed decisions that translate into academic success in postsecondary education. Instead, Lareau posits first-generation students bring with them resources that are prevalent to their own cultural groups, which may or may not be recognized or valued by the institution. Without cultural capital, it becomes increasingly difficult for first-generation college students to draw upon these resources to help guide them through the higher education experience. Some colleges are finding success though. Institutions familiar with these risk factors are using successful intervention programs like group-oriented and cooperative learning which have shown promise, especially with minority groups (Johnson, Johnson, & Smith, 1991; Sharan & Sharan, 1992). Clearly, educators are facing an uphill battle when it comes to the devastating effects of these pre-college behaviors. The effects of cultural and social capital appear to play a significant role in the aspirations, persistence, and attainment of students enrolled in higher education (McDonough, Korn, & Yamasaki, 1997).

Parents and Other Family Members. The family has a profound influence on student college participation and success. Along with high school academic preparation, a number of family factors impact student success. One of the most important predictors of college persistence is parents' educational level (Nuñez & Cuccaro-Alamin, 1998). While the research clearly shows positive relationships between parent's educational levels and student success, the reverse also holds true. First-generation students whose parents did not complete education beyond high school have a propensity not to fair as well. These students tend to demonstrate lower levels of academic preparation, lower educational aspirations, less encouragement and support to attend college, particularly from parents,

less knowledge about the college application process, and fewer resources to pay for college (Engle, Bermeo, & O'Brien, 2006). Stage and Hossler's (2000) research supports earlier findings by implying parents' higher educational levels and incomes are strongly related to involvement in college and indirectly to persistence. According to Perna and Titus (2005), evidence strongly suggests that aspirations and family support foreshadow student success. Evidently, students appear to perform better academically when families affirm their choices and perseverance. Additionally, Nora (2001) found that pre-college parental encouragement was positively related to persistence and academic success. Once enrolled, parents continue to have a positive influence on degree completion.

Social and Academic Integration. Social and academic integration has been the focus of much research on higher education retention. In numerous surveys, students have commonly reported that social and academic support is an important factor for remaining in school (Mallinckrodt, 1988), achieving academic success (Tinto, 1987), and having higher levels of persistence and motivation. Another significant factor shown to affect student persistence is student-faculty interaction (Tinto, 1987). In a study conducted by Amelink (2005), first-generation students who reported positive interactions with faculty and other college personnel are more likely to experience academic success (higher GPA and persistence) and are more satisfied with their academic experience. On the other hand, Bean and Metzner (1985), although not disputing social integration's importance on student success, argue that non-traditional students are more affected by the external environment than by a social integration variable.

Living off campus and/or working. Due largely to lack of resources, first-generation students are more likely to live and work off-campus and to take classes part-time while working full-time, which limits the amount of time they spend on campus. According to Gardner (1996), anything to increase the amount of time that new college students spend on campus—in study groups, in the library, in co-curricular activities, and especially in living and working on-campus will enhance their probability of success.

Presented above is a myriad of risk factors that have known adverse affects on academic success of college students. However, it is important to note that students who possess multiple risk factors are not predestined to be academically unsuccessful in college. Rather, these factors should be viewed as contextual variables that increase a student's risk of being unsuccessful.

The Impact of Academic Self-Efficacy on Academic Achievement

Academic self-efficacy pertains to students' perceived capability to manage their own learning behavior, to master academic material, and to fulfill academic expectations (Bandura, Pastorelli, Barbaranelli, & Caprara, 1999). Bandura (1977) describes self-efficacy as a person's evaluation of his or her ability or competency to perform a task, reach a goal, or overcome an obstacle. Self-efficacy can have different meanings in varying contexts. Thus, when in an academic setting, it is important that "academic" self-efficacy be used or measured rather than "generalized" self-efficacy. Academic self-efficacy, described as the extent to which students believe that they will be able to succeed in school, has been identified as a positive predictor of academic performance within a diverse number of disciplines (Lee & Bobko, 1994): English (Pajares & Johnson, 1994); mathematics (Pajares & Miller, 1995); health sciences (Eachus, 1993);

physics (Fenci & Scheel, 2005); statistics (Finney & Schraw, 2003); chemistry (Smist, 1993); and anatomy and physiology (Witt-Rose, 2003).

The self-efficacy of the student appears to be a critical factor in determining academic success and performance (Gerardi, 1990). An extensive body of research indicates that academic self-efficacy is positively associated with grades in college (Bong, 2001; Brown, Lent, & Larkin, 1989; Hackett, Betz, Casas, & Rocha-Singh, 1992; Multon, Brown, & Lent, 1991) as well as with persistence (Zhang & RiCharde, 1998). In academic environments, Multon, Brown, and Lent concluded that academic self-efficacy had the strongest effect on academic outcomes, while the more generalized forms of self-efficacy are less closely associated with academic outcomes and success. According to Bandura (1997), academic domain assessments of self-efficacy, such as semester grades results, do not lend themselves well to generalized or global self-efficacy assessments, which typically seek a judgment of an individual's general competence or ability without specifying what exactly is being measured. Accordingly, in educational settings, self-efficacy judgments should be consistent with and tailored to the domain of specific academic tasks under investigation. Other researchers support the same findings that general self-efficacy measures were not found to be predictive of any college outcomes (Ferrari & Parker, 1992; Lindley & Borgen, 2002), while academic self-efficacy is a consistent predictor of grades and persistence in college.

Bandura (1993) postulates that self-efficacy beliefs affect college outcomes by increasing students' motivation and persistence to master challenging academic tasks and by fostering the efficient use of acquired knowledge and skills. Self-efficacy is shown to be associated with choice of task, motivational level, and effort and perseverance with the

task (Compeau & Higgins, 1995; Hill, Smith, & Mann, 1987). Low self-efficacy is related to low academic motivation such as not persisting at a task or not working hard (Schunk, 1991). Regarding the number of hours students spent studying, Torres and Solberg (2001) found a positive association between academic self-efficacy and the motivation put forth to study.

There is much debate among researchers in clarifying the difference between self-efficacy and self-concept. Quite often researchers use the words self-efficacy and self-concept interchangeably. According to prominent researcher Frank Pajares (2002), the differences between the two constructs are that self-efficacy is concerned with beliefs of personal capability; it is a judgment of one's capabilities to perform given actions, while self-concept is measured at a more general level of specificity and includes the evaluation of such competence and the feelings of self-worth associated with the behaviors in question.

Herbert Marsh, an influential educational psychologist, is a highly cited researcher on self-concept. He describes self-concept as a multi-faceted and multi-dimensional construct. For example, people can have different beliefs about their physical, emotional, social, or global aspects about themselves. In an academic setting, students have distinct self-concepts in a wide variety of specific school subjects. In short, Marsh's (1992) research provides strong support for the content specificity of academic self-concepts and their relation to academic achievement.

After a thorough examination of their properties, Bong and Clark (1999) also concluded that self-efficacy and self-concept differ in many ways, particularly in their construct composition. In yet another study, academic self-concepts, or beliefs about

one's self, were investigated in students regarding their academic competence on scholastic performance; the results rendered less than unequivocal results (Hansford & Hattie, 1982). On the other hand, more consistent evidence exists on academic self-efficacy, or students' beliefs about their capability to succeed in specific academic pursuits, which implies its direct and mediating effects on student performance and persistence (Multon, Brown, & Lent, 1991).

The literature reviewed in Bong and Clark's articles seems to imply that, on the whole, self-efficacy is a better predictor of academic attainment than self-concept. Based on voluminous amounts of research above, academic self-efficacy does appear to positively affect student success. In previous work, Pajares (1996) also reported self-efficacy to be a strong predictor of college student performance, and more recently, Gore's (2006) findings suggest that academic self-efficacy beliefs can be used to predict college students' academic performance and persistence.

Historical Background of Self-Efficacy

The history of self-efficacy is rather brief, only coming to prominence over the past few decades. Albert Bandura, who is generally credited with bringing self-efficacy into the forefront, developed his Social Learning Theory (1977, 1986) as a response to behaviorism studies of the 1950's and 1960's. In general, behavior theory implies that behavior followed by pleasant consequences tends to be repeated and thereby learned, while behavior followed by unpleasant consequences tends not to be repeated, not learned (Alberto & Trautman, 1995; Rosenberg, Wilson, Maheady, & Sindelar, 1992). Bandura's argument against behavior theory is that if unpleasant behaviors tend not to be repeated—then why are these same unpleasant behaviors imitated so often in society? As

an alternative, he offers another explanation called social learning theory. Basically, this theory implies that individuals learn by imitation of role models around them. As an example, family modeling of drug using behavior and permissive parental attitudes toward children's drug use may lead to an increased risk of alcohol and other drug abuse by the children observing the parent's behavior (Hawkins, Catalano, & Miller, 1992). Likewise, social theorists may posit through modeling that increases of violence on TV, and in movies also leads to higher crime rates in society.

The early 1980s joined together both cognitive-behavior modification and social learning into a single theory to better explain why individuals change beliefs and behavior in the classroom (Coleman & Webber, 2002). By the middle 1980s, Bandura (1986) began to view personality as an interaction among three phenomena: environment, behavior, and psychological processes (self-efficacy). As a result, efficacy expectation theories, which imply individuals can change their behavior to produce a desired outcome, were developed and became more accepted. For example, people tend to avoid tasks they believe exceed their capabilities, but perform activities they believe themselves capable of handling.

By the late 1990s, Bandura (1997) came to the belief that consequences of someone's past behaviors (positive or negative) can significantly influence his or her future behavior. Accordingly, he posited that behavior is affected by the interaction between both the individual and environment, where consequences are produced. Thus, it becomes a person's individual perceptions, or perception thereof, that may perhaps change one's behavior, which, in turn, will often determine the outcome of the expectation. Bandura (1997) hypothesized that this construct, self-efficacy, affected not only task choices, but effort expended, persistence, and achievement as well.

Consequently, Bandura's belief was that it was the degree of the person's optimistic and positive expectations that actually fostered both effort and persistence, which in turn, leads to successful outcomes.

Assessment of Academic Self-Efficacy

According to Bandura (1997), self-efficacy can be measured using surveys which contain scales that measure perceived individual beliefs. While self-efficacy can be domain specific, such as academic self-efficacy, it is generally viewed as more global in nature than other expectancy constructs such as motivation, effort, or performance results. Self-efficacy expectancy refers to a belief about a person's ability to successfully perform a behavior, whereas expectancy outcomes refer to a belief about the likelihood of the behavior producing a desired outcome. As an example, academic self-efficacy expectancy for a student might refer to his perceived belief that a "high cumulative GPA" will, in turn, lead to an expectancy outcome like "induction into a social fraternity" due to his sustained level of effort.

Thus, in academic settings, Bandura suggested using instruments specifically designed for academic areas (i.e., problems, tasks, subject-specific areas, etc). With respect to assessing academic achievement, survey tools gauging student's self-reported ability to complete certain academic tasks has received support in research literature (Choi, 2005; Multon, Brown, & Lent, 1991). Several instruments have been developed to measure self-efficacy in specific situations, and in particular, academic achievements (Pajares, 1996).

The instrument chosen for this study is Owen and Froman's (1988) College Academic Self-Efficacy Scale (CASES). Permission to use the instrument was granted by the designer, Steven Owen, on January 7, 2008 (Appendix D). CASES is designed to

measure how confident students are in their ability to complete the list of behaviors associated with college success. In doing so, it determines the degree of confidence participants believe they have in various academic settings. Overall, the CASES is supported as a quantitatively reliable and valid measure of academic self-efficacy (Choi, 2005), in particular, a gauge of domain-general academic self-efficacy.

Summary

Community colleges have a vested interest in student academic success. In fact, it could be argued that student success is the true measure of a college's success. As accountability is on the rise, creating the conditions that foster student success in college has never been more important to educators. Research literature suggests first-generation college students face a myriad of complexities that puts them at a higher risk of not succeeding in college, particularly those students possessing multiple risk factors. Not only are they disproportionately overrepresented in the most disadvantaged groups relative to enrollment and graduation rates, first-generation students differ from their peers in many respects that reduce the likelihood that they will be academically successful in college.

CHAPTER III:

METHODOLOGY

Research Design

The study was designed to assess the relationship and relative impact of academic self-efficacy and socio-demographic factors on academic achievement, as determined by first-semester GPA, on first-generation community college students. Two research questions that guided the study are:

1. What are the effects of academic self-efficacy and first-semester GPA on first-generation and non-first-generation community college students?

2. What are the effects of selected socio-demographics factors and first-semester GPA on first-generation and non-first-generation community college students?

Permission from Appalachian State University's Institutional Review Board for use of Human Subjects in Research was obtained prior to the study. The research project was approved on April 18, 2008. Permission to administer the surveys was obtained from the president of each participating community college.

To ensure random sampling, a free program called "Researcher Randomizer" located on the web at http://www.randomizer.org/ was used. The program uses a JavaScript random number generator to produce customized sets of random numbers. This random sampling captured both first-generation and non-first-generation students.

To ensure confidentiality, student surveys were stored in a locked filing cabinet in my office. Further, no reference is made in oral or written reports which could link students to the study. Upon completion of the study, student data will be destroyed.

The research model for this study consisted of components designed to measure both the characteristics of the subjects, and the independent and dependent variables. The independent variables are academic self-efficacy and socio-demographics factors. The dependent variable is academic achievement, as determined by first-semester GPA. Generation status, among students, was determined by parents' level of educational attainment. Hence, this study employed survey methodology, using two different instruments.

Instrumentation

College Academic Self-Efficacy Scale (CASES)

First, in an effort to measure academic self-efficacy at community colleges, the study used the College Academic Self-Efficacy Scale (CASES), created by Owen and Froman (1988). It measures self-efficacy in 33 academic behaviors while completing routine and frequent tasks. CASES is designed to measure student's confidence in their ability to complete the list of behaviors associated with college success. In doing so, it determines the degree of confidence participants believe they have in various academic settings. A five-point Likert-type scale measures degrees of confidence ranging from *quite a lot* (5 points) to *very little* (1 point). Higher scores indicate higher college academic self-efficacy. The instrument is scored by totaling the scores on each question and dividing by the number of questions in the instrument. Participants have the ability to

score between a range of 33 points (the lowest amount of confidence) and 165 points (the highest amount of confidence).

Thus, the instrument above was used to test research hypothesis 1_a which states, "There is a positive relationship between levels of academic self-efficacy and first-semester GPA," and research hypothesis 1_b which states, "First-generation students have lower levels of academic self-efficacy than non-first-generation students."

College Academic Self-Efficacy Scale (CASES) Instrument Validity

CASES reports excellent internal consistency reliability between .90 and .92 and an eight-week test-retest reliability correlation of .85. The concurrent and factorial validity of the measure was also established using cross-validation. Since its development in the late 1980s, the CASES instrument has frequently been used as a measure of academic self-efficacy and is considered a quantitatively reliable and valid measure of academic self-efficacy (Choi, 2005). As a result, this instrument is valid for the purpose of assessing academic self-efficacy for the students enrolled in one or more curriculum-based courses at the six community colleges in this study. The approximate time of completion of the Academic Self-Efficacy Scale is between 7-10 minutes.

Socio-Demographic Survey

Second, this study employed a socio-demographics Survey created specifically for use in the exploration of first-generation students. The 20 question survey captured information from five different areas deemed important to academic success, specifically first-semester GPA of first-generation and non-first-generation community college students. The five sections include areas of general demographics, family unit

demographics, employment demographics, social demographics, and academic demographics.

The socio-demographic Survey was pilot-tested at Caldwell Community College and Technical Institute before implementation to determine design effectiveness and reliability. The test was administered to 17 college students in a business administration class during April 2008. The aim of the test was to help minimize instrumentation survey error, to determine if the questions were easy to understand, and to establish the estimated completion time of the survey. Based upon student feedback, adjustments and enhancements were made to improve the clarity of questions.

The *general* demographic section of the survey contained three questions about participants' gender, age, and race/ethic origin. The *family unit* demographic section contained three questions about whether the participants were married, were a single parent, or had dependent children. The *employment* demographic section contained two questions and asked participants about their employment status while attending college and if applicable, the number of hours they worked last week. The *social* demographic section contained three questions and inquired about highest educational levels obtained by their mother and father, parents' occupation, and main reason for attending college. The *academic* demographic section contained nine questions and included questions regarding participant's educational attainment before enrolling in college, delay in enrollment from high school to college, college enrollment status, college classification (whether first-generation or non-first-generation student), first-semester GPA, whether the participant has been diagnosed with a learning disability, their program of study, the

extent to which they disagree or agree with various educational experiences utilizing a Likert-scale, and where they are enrolled (specific community college).

For the purpose of this study, students possessing two or more risk factors were defined as multiple risk college students. All of the following risk factors contained in the survey were found to be associated with lower levels of academic achievement. Students were considered more at risk if they had two or more of the following characteristics (risk factors) which the literature suggest adversely affect academic achievement.

Risk factors include, but are not limited to: *First-Generation status* (Chen, 2005; Choy, 2001; Horn & Nuñez, 2000; Nuñez & Cuccaro-Alamin, 1998; Warburton et al., 2001); *first-year/first-semester grade-point average* (GPA) (Pascarella & Terenzini, 1991); *delayed enrollment after high school* (Choy, 2001; Pascarella, Wolniak, Cruce, & Blaich, 2004; Pike & Kuh 2005; Richardson & Skinner 1992; Terenzini et al., 1996; Warburton et al., 2001); *lower socioeconomic status* (Bainbridge & Lesley, 2002; Haycock, 2001); *race/ethnicity* (Stage & Hossler, 2000); *parents* (Nora, 2001; Perna & Titus, 2005); *social and academic integration* (Tinto, 1987; Amelink, 2005); *living off campus and/or working* (Billson & Terry, 1982); *having dependents* (Inman & Mayes, 1999); *single parenthood* (Horn, Peter, & Rooney, 2002).

Embedded in the survey were several questions designed to assess the risk factors each student possessed, which research indicated may be a contributing factor to reduced academic success. Only seven risk factors (chosen based on review of literature) were used to determine multiple risk college students. Again, students were considered more at risk if they had two or more of the following characteristics (risk factors) known to adversely affect academic achievement based on the literature research. They include

question three *race/ethnicity,* question five *single parenthood*, question six *having*

dependents, question seven *employment status while attending college*, question thirteen

delayed enrollment after high school, question fourteen *college enrollment status whether*

part-time or full-time, and question fifteen *first-generation status.*

Thus, the survey above was used to test research hypothesis 2_a which states,

"Students with multiple risk factors have lower first-semester GPAs," and research

hypothesis 2_b which states, "First-generation students have higher numbers of socio-

demographic risk than non-first-generation community college students."

Data Collection

In late April 2008, I contacted the presidents of each of the six community

colleges (based on geographical regions) requesting permission to include their institution

in a study to assess the relative effects and the impact of academic self-efficacy and

socio-demographic factors on academic achievement, as determined by first-semester

GPA, on first-generation community college students. In May 2008, the college

presidents granted permission for their students to be surveyed, along with the release of

student directory information to include student's name, mailing address, email address,

and program of study. However, one college declined the request for student mailing

addresses due to its privacy act policy. As a result, only Internet-Based emails were sent

to that particular college.

A total of 1070 surveys were sent randomly to participants at six community

colleges. The survey methodology included using a hybrid combination of accessible

Internet-Based emails (n = 820) and traditional hard-copy mailings (n = 250). Both

mailings, Internet-Based email and hard-copy, received a cover letter, socio-demographic survey, and the College Academic Self-Efficacy Scale (CASES).

Although final exams were scheduled to occur the first week in May, the decision was made to mail/email the surveys on May 6, 2008, before the semester ended and before students went on summer break. In an attempt to increase return rates, all 820 Internet-Based surveys were "personalized" with individual student and college names as opposed to sending a mass email with an informal greeting. Whereas hard-copy surveys can be mail-merged with personalized information, by contrast, e-mail surveys cannot, resulting in a very time-consuming but worthwhile process.

By May 21, 2008, the response rate had only approached 11%. Since two weeks had passed after the initial mailing of surveys, reminder postcards were sent, both hard copy and email, in an effort to increase response rates for the surveys. The second reminder resulted in a modest increase of return rates. Due to the low number of responses, another email reminder was sent on June 19, 2008, but this time to the entire target population (mail and email list) in one last attempt to encourage participation before the survey deadline of June 30, 2008. On June 30, 2008, 166 completed surveys out of the population of 1070 curriculum students had been received for a cumulative response rate of 16%. In an attempt to further increase the response rate, the Internet-Based survey link remained active beyond the suspense date of June 30th in hope that more participants would complete the survey over the course of a few weeks. Although seven more completed surveys were received for a cumulative total of 173, the additional surveys did not change the collective response rate of 16%.

While the response rate was disappointing, a usable random sample of 173 community college students was obtained. One possible explanation for the low response rate is survey timing. The surveys were sent out the week of final exams and prior to the summer break. Secondly, the Internet-Based email surveys were sent directly to the student's college email accounts. Since many students do not attend classes in the summer term, perhaps many students never read their college email.

Moreover, the return rates of the two student surveying methodologies were examined: Internet-Based email and mailed survey. Not surprisingly, the response rate of the Internet-Based email was lower at roughly 12% (n = 98), while the mailed surveys were higher at 30% (n = 75). Conceivably, an increase in mailed surveys might have increased response rate noticeably.

Although the response rate was less than desirable, it is important to mention that the random sample of 173 community college students could, in fact, be representative of a larger population, given the data collected mirrored many other studies (NCCCS, 2007; Coley, 2000; Inman & Mayes, 1999; Nuñez & Cuccaro-Alamin, 1998).

Sources of Data

Data were collected using Owen and Froman's (1988) College Academic Self-Efficacy Scale (CASES) and a demographic survey. As stated previously, a total of 1070 surveys were sent randomly to participants at six community colleges. Originally, 300 surveys were to be mailed to the six community colleges, 50 each per college. However, one college refused to release student addresses due to its privacy act policy. As a result, 250 surveys were mailed along with 820 Internet-Based surveys sent via email to a total

of 1070 freshmen. Therefore, ratios of approximately one mailed survey to every four Internet-Based surveys were sent to each community college.

The target population included students first enrolled during the fall semester of 2007, and still enrolled during the spring semester of 2008, in at least one of four curriculum-based programs of study: business administration, computer information technology, associate in arts (college transfer degree option), and associate in science (college transfer degree option).

Research Sites

Data were collected via surveys from curriculum students enrolled in six community colleges (rural and urban) located in North Carolina, two from each of the three geographical regions (mountains, piedmont, and coast). This allowed for a cross-section of urban and rural students to comprise the target population.

The following six community colleges participated: The *mountain* region was represented by Caldwell Community College and Technical Institute ($n = 206$) located in Hudson, NC and Catawba Valley Community College ($n = 355$) located in Hickory, NC. The *piedmont* region was represented by Fayetteville Technical Community College ($n = 217$) located in Fayetteville, NC and Forsyth Technical Community College ($n = 302$) located in Winston-Salem, NC. The *coastal* region was represented by Pitt Community College ($n = 181$) located in Greenville, NC and Cape Fear Community College ($n = 447$) located in Wilmington, NC.

As shown in Table 3.1., an examination of community colleges revealed some interesting findings. For example, nearly 70 percent (69.7%) of first-generation students were enrolled in just three out of the six community colleges: Catawba Valley

Community College in Hickory, NC (25.8%), Caldwell Community College and

Technical Institute in Hudson, NC (22.7%), and Cape Fear Community College in

Wilmington, NC (21.2%).

Table 3.1. Participating Community Colleges

	First-Generation		Non-First-Generation		Total Sample	
	n	Pct.	n	Pct.	n	Pct.
Community College						
Caldwell CC &TI	15	22.7%	13	12.5%	28	16.5%
Catawba Valley CC	17	25.8%	27	26.0%	44	25.9%
Fayetteville Tech CC	5	7.6%	18	17.3%	23	13.5%
Forsyth Tech CC	6	9.1%	13	12.5%	19	11.2%
Pitt CC	9	13.6%	14	13.5%	23	13.5%
Cape Fear CC	14	21.2%	19	18.3%	33	19.4%
Total	66	100.0%	104	100.0%	170	100.0%
No Data Available	1	_	2	_	3	_
Total	67	_	106	_	173	_

Hypotheses

Based on the literature reviewed, the following research hypotheses were

proposed:

Research Hypothesis 1$_a$: There is a positive relationship between levels of

academic self-efficacy and first-semester GPA.

Research Hypothesis 1$_b$: First-generation students have lower levels of academic

self-efficacy than non-first-generation students.

Research Hypothesis 2$_a$: Students with multiple risk factors have lower first-semester GPAs.

Research Hypothesis 2$_b$: First-generation students have higher numbers of socio-demographic risk factors than non-first-generation community college students.

Data Analysis

Descriptive statistics were used in the preliminary analysis of data collected from (CASES) and the demographics survey. CASES is scored by calculating the mean score. The research hypotheses for each of the two research questions were tested using correlation, *t*-test, *z*-test, chi-square test, and relative risk ratios. Relative Risk (RR) is generally used to describe the multiple of risk of the outcome between two groups and is expressed as a risk ratio. For instance, it was theorized that the more risk characteristics a student has, the greater the probability that students would not be academically successful in college. In order to test this theory, relative-risk was used to determine the risk or probability of an event relative to its exposure. Relative Risk Ratio was chosen instead of odds-ratio because it is considered easier to interpret. As an example in this study, relative-risk was used to compare the likelihood of an event (higher or lower first-semester GPA) relative to exposure (number of risk factors reported by students) between two groups (first-generation and non-first-generation community college students).

Hypotheses were tested at the .05 alpha levels. As previously stated, the purpose of this study was to assess the relative relationship and the impact of academic self-efficacy and socio-demographic factors on academic achievement, as determined by first-semester GPA. The methodology described above was deemed appropriate to address the research questions posed in the study.

CHAPTER IV:

ANALYSIS OF DATA

The Impact of Academic Self-Efficacy and Socio-Demographic Factors on Academic

Achievement of First-Generation Community College Students

The purpose of this chapter is to report the relative effects and the impact of

academic self-efficacy and socio-demographic factors on academic achievement, as

determined by first semester grade point averages of first-generation community college

students. The first semester in community college is a pivotal point in students' academic

careers. Previous research has found that students whose first academic experience in

college was positive and successful were more likely to remain in school and perform

better academically (Astin, 1993; Tinto, 1993). In the current study, two types of survey

instruments were used. To measure academic self-efficacy, the College Academic Self-

Efficacy Scale (CASES) was used. To collect demographic information, a socio-

demographic survey was used. The complete results for each survey item contained in

both instruments can be found in Appendix Table A.1 through A.6. Academic

achievement was determined by student self-reported first semester GPA. Generation

status among community college students was determined by parents' level of

educational attainment.

College Self-Efficacy Scale (CASES)

Academic self-efficacy is defined as the extent to which students believe that they are able to succeed in school and is a positive predictor of academic performance within a diverse number of disciplines. An extensive body of research indicates that academic self-efficacy is positively associated with grades in college (Bong, 2001; Brown, Lent, & Larkin, 1989; Hackett, Betz, Casas, & Rocha-Singh, 1992; Multon, Brown, & Lent, 1991) as well as with persistence (Zhang & RiCharde, 1998).

To measure academic self-efficacy among community college students, the College Academic Self-Efficacy Scale (CASES), created by Owen and Froman (1988), was used. CASES is designed to measure student confidence in his or her ability to complete a list of behaviors associated with college success. In doing so, it measures the degree of confidence participants have in various academic settings. CASES is a quantitatively reliable and valid measure of academic self-efficacy (Choi, 2005), in particular, a measure of domain-general academic self-efficacy.

CASES is typically scored by tallying the scores on each question and dividing by the number of questions in the instrument. The instrument measures self-efficacy in 33 academic behaviors. Therefore, participants have the ability to score between a range of 33 points (the lowest amount of confidence) and 165 points (the highest amount of confidence). However, when data for questions are missing for some individuals, it may not be appropriate to use the summated score, since the total score will not reflect the same number of responses. In this case, a more appropriate index is the "mean item score" which was used in this study.

With respect to CASES' mean item score (Table 4.1), non-first-generation students exhibited a higher overall level of academic self-efficacy ($M = 3.76$, $SD = .656$) than their first-generation counterparts ($M = 3.51$, $SD = .644$).

Table 4.1. College Self-Efficacy Scale (CASES) Mean Item Score

Student Classification	n	Mean Item	Item SD
First-Generation Students	67	3.51	.644
Non-First-Generation Students	104	3.76	.656

An examination of the individual items in CASES revealed that first-generation students differ from the non-first-generation counterparts in their confidence of many academic behaviors (Table A.1). Some of the more notable differences include the following: First-generation students were less likely than their non-first generation counterparts to report "a lot" or "quite a lot" of confidence in participating in a class discussion (55.3% versus 67.7%); answering a question in a large class (49.3% versus 58.8%); answering a question in a small class (56.7% versus 79.6%); taking essay tests (38.8% versus 48.5%); writing a high quality term paper (48.8% versus 59.2%); tutoring another student (28.3% versus 40.8%); explaining a concept to another student (44.8% versus 66.0%); asking help from a professor in class to review a misunderstood concept (50.0% versus 67.3%); earning good marks in most courses (68.6% versus 81.7%); studying enough to understand content thoroughly (51.5% versus 68.9%); participating in extracurricular events (20.9% versus 32.3%); earning respect of professors (61.2% versus 76.9%); comprehending most ideas read in texts (70.1% versus 80.7%); understanding

most ideas presented in class (64.2% versus 83.6%); relating to a professor on a personal level (33.3% versus 60.7%); relating course content to material in other courses (53.8% versus 75.8%); challenging a professor's opinion in class (26.9% versus 40.2%); applying lecture content to a laboratory session (40.3% versus 62.3%); earning good grades (68.7% versus 80.6%) and mastering content in a course where there is lack of interest (43.3% versus 54.3%).

Impact of Academic Self-Efficacy on First-Semester GPA

Based on the literature reviewed, the following research hypotheses were proposed:

Research Hypothesis 1$_a$: There is a positive relationship between levels of academic self-efficacy and first-semester GPA.

The relationship between academic self-efficacy and first-semester GPA was examined. As expected, there was a significantly high correlation ($r = .390, p < .001$) between the two variables. Higher levels of academic self-efficacy were associated with higher first-semester GPAs.

Research Hypothesis 1$_b$. First-generation students have lower levels of academic self-efficacy than non-first-generation students.

A Lavernes test for equality of variances showed that equal variances could not be assumed. Therefore, a non-standard *t*-test for unequal variance was performed. The results showed a significant difference between groups; first-generation students had lower academic self-efficacy ($M = 3.51, SD = .64$) than their non-first-generation counterparts ($M = 3.76, SD = .66$), $t(169) = -2.442, p = .016$.

Social Demographic Survey

A socio-demographics survey was used to capture information from five different areas deemed important to the academic achievement of college students. The five sections of the survey were general demographics, family unit demographics, employment demographics, social demographics, and academic demographics. A notable body of literature (Desjardins, McCall, Ahlburg, & Moye, 2002; Pascarella, Pierson, Wolniak, & Terenzini, 2004; Paulsen & St. John, 2002; Pike & Kuh, 2005; Terenzini et al., 1996) has established that student and demographic characteristics are associated with positive and negative student outcomes in academic settings. Likewise, data collected from this survey were used to determine the effects of socio-demographic factors on academic achievement of community college students with emphasis placed on first-generation students.

General Demographics

The majority of the sample was female, less than 24 years of age, and Caucasian (Table 4.2). In terms of *gender*, the difference in proportion of females between groups was non-significant. The finding is consistent with North Carolina Community College students in general, where 63% are female and 37% are male (NCCCS, 2007).

With respect to *age*, over two-thirds of the students in the sample were less than 25 years old. However, a chi-square test of independence revealed a higher proportion of students under the age of 25 among non-first-generation students than among first-generation students (x^2 (2) = 7.735, p = .021). In comparison, statistics reported by the North Carolina Community College System's curriculum student information indicated a lower percentage of students enrolled between the ages of 18-24 (45.33%), but a slightly

higher percentage of students enrolled between the ages of 25-34 (24.66%), 35-44 (14.84%), 45-54 (8.6%), and slightly lower, 55 or older (3.19%). Although some differences among percentages were reported between the North Carolina Community College System and this study, the rank order between the age groups was consistent.

As for *race*, the majority of students in the sample were white. However, a chi-square test of independence revealed a significantly higher proportion of white students among non-first-generation students than among first-generation students (x^2 (1) = 4.681, p = .030). When compared to the North Carolina Community College System Fact Book (2007) enrollment by race, Caucasian was reported more often at 65.3%, followed by African-American at 25.8%, Asian at 2%, Hispanic at 3.1%, American-Indian at 1.4%, and other races at 2.4%. While nearly all of the enrollment percentages by race reported by the NCCCS were comparable with this study, one noticeable exception was noted. In this study, only 10.4% of the total sample of African-American students completed the survey (while their total enrollment population by race reportedly makes up one-quarter of the entire community college population). Although the cause for the low response rate is unclear, it may be related to college attrition rates from one semester to another. As stated earlier, the target population for this study included students first enrolled during the fall semester of 2007 and still enrolled during the spring semester of 2008. As Stage and Hossler (2000) concluded, minority students are less likely to persist, have differing experiences, and demonstrate more behaviors leading to attrition than their white counterparts.

Table 4.2. General Demographics

General	First-Generation		Non-First-Generation	
	N	Pct.	N	Pct.
Gender				
Male	25	37.3%	43	40.6%
Female	42	62.7%	63	59.4%
Age				
<25	46	68.7%	71	67.0%
25-34	7	10.4%	25	23.6%
>35	14	21.0%	10	9.5%
Race				
White	49	73.1%	89	84.0%
Non-White	18	26.9%	14	13.1%

Family Unit Demographics

The majority of the students in the sample was not married, not a single parent, and did not have dependent children (Table 4.3). In terms of being *married*, a *single parent*, or having *dependent children*, non-first-generation students did not differ significantly from first-generation students. Students in both groups were likely to be single and without children. Interestingly, 26.0% of the total sample reported having dependent children. By comparison, Coley (2000) reported that one-fifth of beginning community college students have dependents.

Table 4.3. Family Demographics

Family	First-Generation		Non-First-Generation	
	N	Pct.	N	Pct.
Married				
No	53	79.1%	78	73.6%
Yes	14	20.9%	28	26.4%
Single Parent				
No	59	88.1%	98	92.5%
Yes	8	11.9%	8	7.5%
Dependent Children				
No	48	71.6%	80	75.5%
Yes	19	28.4%	26	24.5%

Employment Demographics

A plurality of the sample was working part-time and with an average of 31-40 hours per week (Table 4.4). A greater proportion of first-generation students was unemployed compared to non-first-generation students (36% versus 21%). Furthermore, first-generation students were more likely to be working part- time (34% versus 52%) than were their non-first-generation counterparts. A chi-square test of independence confirmed these findings (x^2 (2) = 6.402, p = .041).

With respect to *hours worked last week*, a greater proportion of first-generation students reported not having worked any hours last week (34% versus 15%). Likewise, first-generation students were less likely to have worked part-time hours (57% versus 76%) than were their non-first-generation counterparts. A chi-square test of independence confirmed these findings (x^2 (2) = 8.287, p = .016). By comparison, the NCCCS (2007) study reported that 40% of community college students were unemployed, that 33%

worked part-time, and that 27% worked full-time. Additionally, Coley (2000) reported a slightly higher percentage rate of first-time entrants into community colleges worked full-time at 35% percent as compared to the study at 28.3%.

Table 4.4. Employment Demographics

Employment	First-Generation		Non-First-Generation	
	N	Pct.	N	Pct.
Employment Status				
Unemployed	24	35.8%	22	20.8%
Working Part-Time	23	34.3%	55	51.9%
Working Full-Time	20	29.9%	29	27.4%
Hours Worked (Last Week)				
None	21	33.9%	15	15.0%
11 – 40 hrs	35	56.5%	76	76.0%
> 40 hrs	6	9.7%	9	9.0%

Social Demographics

A majority of the sample reported that their parents' highest educational level of education was a high school diploma, that their mother was employed in areas of employment not listed on the survey, that the father's occupation was most likely in production or labor, and that most attended college in order to transfer to a four-year college or university (Table 4.5).

In terms of *mother's highest educational level*, a higher proportion of mothers of non-first-generation students possessed some college or higher (88% versus 8%) than did mothers of first-generation students. Moreover, a higher proportion of mothers of first-generation students attained a high school diploma or less (92% versus 13%) than did

mothers of non-first-generation students. A chi-square test of independence confirmed these findings (x^2 (2) = 104.827, $p < .001$).

With respect to *father's highest educational level*, a higher proportion of fathers of non-first-generation students possessed some college or higher (80% versus 6%) than did fathers of first-generation students. Also, a higher proportion of fathers of first-generation students attained a high school diploma or less (94% versus 20%) than did fathers of non-first-generation students. A chi-square test of independence confirmed these findings (x^2 (2) = 85.432, $p < .001$).

In terms of *mother's parental occupation*, a higher proportion of mothers of non-first-generation students held professional positions (34% versus 8%) than did mothers of first-generation students. Moreover, a greater proportion of mothers of first-generation students worked in non-professional occupations (52% versus 39%) than did mothers of non-first-generation students. A chi-square test of independence confirmed these findings (x^2 (2) = 14.333, $p = .001$).

With respect to *father's parental occupation*, a higher proportion of fathers of non-first-generation students held professional positions (34% versus 12%) than did fathers of first-generation students. Also, a greater proportion of fathers of first-generation students worked in non-professional occupations (71% versus 48%) than did fathers of non-first-generation students. A chi-square test of independence confirmed these findings (x^2 (2) = 11.084, $p = .004$).

As for the *main reason for attending college*, responses from non-first-generation students did not differ significantly from first-generation students. Students in both

groups were more likely to indicate that they attended college to obtain a two-year degree or to transfer to a four-year college or university.

Table 4.5. Social Demographics

Social	First-Generation		Non-First-Generation	
	N	Pct.	N	Pct.
Mother's Highest Educational Level				
< High School (HS)	19	28.8%	2	1.9%
HS Graduate	42	63.6%	12	11.3%
Some College or Higher	5	7.6%	92	88.30%
Father's Highest Educational Level				
< High School (HS)	23	37.1%	4	3.9%
HS Graduate	35	56.5%	17	16.5%
Some College or Higher	4	6.4%	82	79.6%
Mother's Parental Occupation				
Professional/Managerial	5	7.9%	35	33.7%
Non-Professional	33	52.3%	41	39.4%
Other	25	39.7%	28	26.9%
Father's Parental Occupation				
Professional/Managerial	8	12.3%	35	34.3%
Non-Professional	46	70.7%	49	47.9%
Other	11	16.9%	18	17.6%

Table 4.5. (Continued)

Social	First-Generation		Non-First-Generation	
	N	Pct.	N	Pct.
Main Reason for				
Attending College				
Improve Job Skills	5	7.5%	3	2.9%
Obtain a 2-Year Degree	21	31.3%	30	28.6%
Transfer to 4-Year College	41	61.2%	72	68.6%

Academic Demographics

A majority of the sample attained a high school diploma before enrolling in college, had no delay in enrollment from high school to college, were enrolled full-time, considered non-first-generation college students, achieved first-semester GPA of 2.5 or greater, not diagnosed any learning disabilities, enrolled in associate in arts (college transfer) program of study, and were enrolled at Catawba Valley Community College (Table 4.6).

In terms of *educational attainment*, a greater proportion of first-generation students possessed less than a high school diploma before enrollment at a college (22% versus 7% of non-first-generation students.) On the other hand, non-first-generation students were more likely to possess at least a high school diploma (93% versus 78%). A chi-square test of independence confirmed these findings (x^2 (1) = 9.215, p = .002).

With respect to *enrollment delay*, there was a greater proportion of non-first-generation students with less than one-year delay before enrollment at a college (65% versus 51% of first-generation students). First-generation students were more likely than non-first-generation students to delay college enrollment by one to five years (27% versus 14%). A chi-square test of independence confirmed these findings (x^2 (2) = 9.531,

$p = .009$). Coley (2000) reported almost identical findings with almost one-half (48%) of beginning community college students had delayed entry (did not enter college in the first year after high school) as compared to this study for all students at 46.8%.

As for *enrollment status*, non-first-generation students did not differ significantly from first-generation students. However, non-first-generation students were slightly more likely to be enrolled on a full-time basis than were their counterparts, while first-generation students were slightly more likely to be enrolled part-time.

With regard to *student classification*, first-generation college students comprised 38.7% (n=67) of the sample, while non-first-generation college students comprised the largest group at 61.3% (n=106). At nearly 40% of the sample, first-generation college students often represent a large segment of the community college population (Willet, 1989). Community colleges are the "point of entry" for large numbers of students who have been underserved by traditional higher education.

In terms of *first-semester GPA*, non-first-generation students were more likely to have a first-semester GPA of 2.5 or higher (81% versus 67%) than were their first-generation counterparts. A chi-square test of independence confirmed these findings (x^2 (1) = 4.357, $p = .037$).

With respect to *learning disability*, non-first-generation students did not differ significantly from first-generation students. However, non-first-generation students did report slightly higher learning disabilities classified as "other."

As for *programs of study*, a greater proportion of non-first-generation students enrolled in college transfer (associate in arts or science) programs of study (80% versus 61%). Furthermore, first-generation students were more likely to enroll in business

administration programs of study (24% versus 10%). A chi-square test of independence confirmed these findings (x^2 (2) = 8.028, p = .018). As mentioned earlier, previous research has found that first-generation students are more likely to choose a major in business or vocational/technical field, while their non-first-generation counterparts are more likely to choose a major in science, mathematics, engineering and architecture, humanities, arts, or social sciences (Montmarquette, Cannings, & Mahseredjian, 2002).

Table 4.6. Academic Demographics

Academic	First-Generation		Non-First-Generation	
	N	Pct.	N	Pct.
Educational Attainment				
< HS Diploma	15	22.4%	7	6.6%
HS Diploma	52	77.6%	99	93.0%
Enrollment Delay				
< 1 Year	34	50.7%	69	65.1%
1 – 5 Years	18	26.9%	15	14.1%
> 5 Years	15	22.4%	22	20.8%
Enrollment Status				
Part-Time	25	37.3%	27	25.5%
Full-Time	42	62.7%	79	74.5%
Student Classification				
First-Generation	67	100.0%	–	–
Non-First-Generation	–	–	106	100.0%
First-Semester GPA				
Less than 2.5 GPA	22	32.8%	20	18.9%
2.5 or Higher GPA	45	67.2%	86	81.1%

Table 4.6. (Continued)

Academic	First-Generation		Non-First-Generation	
	N	Pct.	N	Pct.
Learning Disability				
No	57	85.1%	87	82.1%
ADD/ADHD/Dyslexia	9	13.5%	10	9.4%
Other Learning Disability	1	1.5%	9	8.5%
Program of Study				
Business Administration.	16	23.9%	10	9.6%
Computer Info Technology	10	14.9%	11	10.6%
College Transfer (Arts/Science)	41	61.2%	83	79.9%

Self- Reported Risk Factors

Self-reported risk factors were examined for all students in Table 4.7. This study

found that only 5.2% of participants had no risk factors. To the contrary, Coley (2000)

reported that approximately 26% of students in two-year institutions have no risk factors

in comparison to 70% of students in four-year institutions. My results showed that 34.1%

of students possessed one or no risk factors. Surprisingly, a majority 94.8% (n=164) of all

students surveyed in my study reported one or more risk factors, which is higher than

what was estimated by Coley, who reported approximately 75% of the community

college student population has at least one demographic risk factor. However, Coley

didn't include first-generation status in his study, which would have caused the

percentage to climb considerably higher. In addition, this survey found 21.4% of

participants possessed four or more risk factors. Likewise, Coley reported that

approximately 25% of community college students have multiple risk factors (which he

defined as four or more risk factors), while only about 4% of students at public four-year institutions had the same risk.

Regarding student classification, the survey found that first-generation students were less likely to report one risk factor, first-generation status itself not included, (11.9%) than were their non-first-generation counterparts (39.6%.) Moreover, first-generation students were more likely to possess three or more reported risk factors (64.2% versus 27.4%.)

Table 4.7. Self-Reported Risk Factors by Student Classification

Risk Factors	First-Generation		Non-First-Generation		Total Sample	
	n	Pct.	n	Pct.	n	Pct.
0	–	–	9	8.5%	9	5.2%
1	8	11.9%	42	39.6%	50	28.9%
2	16	23.9%	26	24.5%	42	24.3%
3	19	28.4%	16	15.1%	35	20.2%
4	7	10.4%	11	10.4%	18	10.4%
5	11	16.4%	2	1.9%	13	7.5%
6	6	9.0%	–	–	6	3.5%
Total	67	100.0%	106	100.0%	173	100.0%

Impact of Socio-Demographic Risk Factors on First-Semester GPA

Based on the literature reviewed, the following research hypotheses were proposed:

Research Hypothesis 2$_a$. Students with multiple risk factors have lower first-semester GPAs.

The findings indicated no significant difference (t (171) = .866, p = .388) in first-semester GPA between groups. Therefore, students possessing multiple-risk factors did

not have significantly lower first-semester GPA's than those students possessing one or none.

Research Hypothesis 2$_b$. First-generation students have higher numbers of socio-demographic risk factors than non-first-generation community college students.

The results showed a significant difference in the number of risk factors as first-generation students reported higher numbers of risk factors (M = .88, SD = .327) than their non-first-generation counterparts (M = .52, SD = .502), t (171) = 5.236, p < .001. Therefore, first-generation students did have higher numbers of socio-demographic risk factors than non-first-generation students.

Individual Risk Factors and First-Semester GPA

Prior research has established the detrimental effects of risk factors on academic achievement. However, the research also suggests there may be certain risk factors that put students at even a higher risk for not succeeding (Bryant, 2001; Cofer & Somers, 2001).

In Coley's (2000) study, seven demographic risk factors were related to student success: attending part-time, working (full/part-time), delayed entry after high school, having dependents, having financial independence, being a single parent, or not having a high school diploma. Interestingly, absent in his study was "first-generation status." Research has shown that "first-generation status itself is a risk factor," even after taking demographic and enrollment characteristics into account (Chen, 2005; Choy, 2001; Horn & Nuñez, 2000; Nuñez & Cuccaro-Alamin, 1998; Warburton et al., 2001). If first-generation status had been included in Coley's study, it is hypothesized that the reported

26% of students in two-year institutions having no risk factors would have been significantly lower given the high percentage of first-generation students.

For the purpose of this study, seven risk factors (based on the literature review) were chosen to determine their individual effect on the academic achievement of community college students: These were: (1) race/ethnicity, (2) single parenthood, (3) having dependents, (4) employment status while attending college, (5) delayed enrollment after high school, (6) college enrollment status whether part-time or full-time, and (7) first-generation status. Each of these seven risk factors has been linked to lower levels of academic achievement (refer to Chapter Three). It was hypothesized that certain individual risk factors have a greater effect on academic achievement than other factors. To test this research hypothesis, a z-test of differences in proportions (between first-generation and non-first-generation students) was used.

The z-test revealed no significant differences in proportions between groups based on individual risk factors for those students failing to reach a 2.5 GPA. Although none of the seven risk factors were statistically significant (probably due to the small sample size), the analysis revealed some noteworthy differences between groups. In particular, enrollment status while in college ($z = 1.02$) and first-generation status ($z = 1.05$) were two areas in which the groups differed the most (Table 4.8).

Table 4.8. Percent of First-Generation and Non-First-Generation Students
Failing to Achieve a 2.5 GPA by Risk Factor

	First-Generation Students		Non-First Generation Students			
Risk Factor	N	Pct.	N	Pct	Diff in Proportion	Sig. Test (Z)
Minority Status	3	21.40	4	40.00%	-18.60	.54
Single Parenthood	4	50.00	4	50.00%	0.00	.00
Dependent Children	8	42.10	5	19.20%	22.90	.89
Employment Status	13	30.20	15	17.90%	12.30	.78
Delayed Enrollment	13	32.50	8	19.50%	13.00	.66
Enrollment Status	11	44.00	5	18.50%	25.50	1.02
First-Generation	22	32.80	20	18.90%	13.90	1.05

Note: The significant test is a z test of the difference in proportion.

Relative Risk of Exposure to Individual Risk Factors

Relative Risk (RR) is generally used to describe the risk of exposure between two

groups and is expressed as a risk ratio. The statistical test of relative-risk was also

performed on these same seven risk factors as listed above. The advantage to relative-risk

is that it can be used to determine if certain risks make it less likely for students to

achieve academic success. As shown in Table 4.9, individual risk factors and their effects

are examined. Only those risk factors with high relative risk ratios are discussed below.

(1) Dependent Children. First-generation students having dependent children possess

slightly over two-times greater risk (*RR* = 2.19) of having a lower first-semester

GPA than non-first-generation students having the same risk.

(2) Employment Status. First-generation students working while in college possessed

slightly over one and one-half times greater risk (*RR* = 1.69) of having a lower

first-semester GPA than non-first-generation students having the same risk.

(3) Delayed enrollment. First-generation students who experienced a delay in

enrollment between high school and college possessed slightly over one and one-

half times greater risk ($RR = 1.67$) of having a lower first-semester GPA than non-first-generation students having the same risk.

    (4) Enrollment Status. First-generation students who attend college part-time possessed nearly two and one-half times greater risk ($RR = 2.38$) of having a lower first-semester GPA than non-first-generation students having the same risk.

    (5) First-Generation Status. First-generation students possessed nearly one and three-quarter times greater risk ($RR = 1.74$) of having a lower first-semester GPA than non-first-generation students having the same risk.

Table 4.9. Relative Risk Ratios for First-Generation and Non-First-Generation Students Failing to Attain a 2.5 GPA by Individual Risk Factor

Number of Risk Factors	First-Generation Students			Non-First Generation Students			
	n1	N1	Risk	n2	N2	Risk	RR Ratio
Minority Status	3	14	0.21	4	10	0.40	0.54
Single Parenthood	4	8	0.50	4	8	0.50	1.00
Dependent Children	8	19	0.42	5	26	0.19	2.19
Employment Status	13	43	0.30	15	84	0.18	1.69
Delayed Enrollment	13	40	0.33	8	41	0.20	1.67
Enrollment Status	11	25	0.44	5	27	0.19	2.38
First-Generation	22	67	0.33	20	106	0.19	1.74

Note: The RR Ratio determines the probability (or risk) of failure to attain a 2.5 GPA.

Relative-Risk of Exposure to Multiple Risk Factors

    It is likely that no single risk factor can account for academic failure, but an accumulation of such risk factors might. Therefore, it was hypothesized that the more risk factors a student has, the greater the chance that he or she will not be academically successful in college. Thus, students were considered more at risk if they had two or more of the following characteristics (risk factors) which the literature suggest adversely affect academic achievement. In order to test the research hypothesis, relative risk (RR) was used (Table 4.10).

One (1) Risk Factor. There was a one and one-half times greater risk (*RR* = 1.50) of having a lower first-semester GPA for first-generation students having one of the seven risk factors than for non-first-generation students having one risk factor.

Two (2) Risk Factors. There was a three and one-quarter times greater risk (*RR* = 3.25) of having a lower first-semester GPA for first-generation students having two risk factors than for non-first-generation students having two risk factors.

Three (3) Risk Factors. There was a two and one-half times greater risk (*RR* = 2.53) times greater risk of having a lower first-semester GPA for first-generation students having three risk factors than for non-first-generation students having three risk factors.

Two (2) or More Risk Factors. As mentioned earlier in the study, students experiencing one or no socio-demographic risk factors were not considered to be at risk. Conversely, students possessing "two or more risk factors" were defined as multiple risk college students. There was a one and three-quarter times greater risk (*RR* = 1.74) times greater risk of having a lower GPA for first-generation community students having two or more of the seven risk factors than for non-first-generation having two or more risks.

Table 4.10. Relative Risk Ratios for First-Generation and Non-First-Generation Students Failing to Attain a 2.5 GPA by Exposure to Multiple Risk Factors

Number of Risk Factors	First-Generation Students			Non-First Generation Students			
	n1	N1	Risk	n2	N2	Risk	RR Ratio
One	2	8	.25	7	42	.17	1.50
Two	6	16	.38	3	26	.12	3.25
Three	6	19	.32	2	16	.13	2.53
Four	1	7	.14	3	11	.27	.52
Five	4	11	.36	2	2	1.00	.36
Two or more	22	67	.33	20	106	.19	1.74

Note: The RR Ratio determines the probability (or risk) of failure to attain a 2.5 GPA.

As reported in Table 4.11, first-generation students were more likely to report having multiple risk factors (two or more) at 88.1% versus their non-first-generation counterparts at 51.9%.

Table 4.11. Risk Versus Non-Risk by Student Classification

Risk Factors	First-Generation		Non-First-Generation		Total Sample	
	n	Pct.	n	Pct.	n	Pct.
Non-Risk (one or no)	8	11.9%	51	48.1%	59	34.1%
Multiple-Risk (two or more)	59	88.1%	55	51.9%	114	65.9%
Total	67	100.0%	106	100.0%	173	100.0%

Relationship between Socio-Demographic Risk Factors and Academic Self-Efficacy

The relationship between socio-demographic risk factors and academic self-efficacy was also examined. I hypothesized that lower numbers of risk factors (one or none) would show a positive correlation with academic self-efficacy. This hypothesis was not supported ($r = -.080$, $p > .05$). Additionally, a t-test was performed to compare first-generation and non-first-generation students. There was no significant differences between the groups.

Student Support Systems

The socio-demographic survey also included nine Likert-type items asking students to indicate the extent to which they agreed or disagreed with statements of support (Table 4.12). To compare mean item scores across groups, t-tests were used. Only a few of these tests were statistically significant. These are discussed below.

Parent support. Non-first-generation students reported a higher overall level of parent support ($M = 4.54$, $SD = .866$) than did their first-generation counterparts ($M = 4.13$, $SD = .651$), t (111) = -3.256, $p = .002$.

Peer support. Non-first-generation students reported a higher overall level of peer support ($M = 4.42$, $SD = .718$) than did their first-generation counterparts ($M = 4.09$, $SD = .965$), t (170) = -2.562, $p = .011$.

Instructor support. Non-first-generation students reported a higher overall level of instructor support ($M = 4.28$, $SD = .776$) than did their first-generation counterparts ($M = 4.02$, $SD = .845$), t (163) = -2.038, $p = .043$.

Financial resources. First-generation students reported a higher overall level of financial difficulty ($M = 3.40$, $SD = 1.24$) than did their non-first-generation counterparts ($M = 2.89$, $SD = 1.27$), t (170) = 2.621, $p = .010$.

Social involvement. Non-first-generation students reported a higher overall level of social involvement on campus ($M = 2.49$, $SD = 1.25$) than did their first-generation counterparts ($M = 2.11$, $SD = 1.10$), t (168) = -2.051, $p = .042$.

Table 4.12. Student Support Systems

Please indicate the extent to which you disagree or agree with the following statements by circling the most appropriate response for EACH question:

Support Classification	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Mean Item	Item SD
My parents (or guardians) support me in college?							
First-Generation College Student	1.5%	—	23.9%	32.8%	41.8%	4.13	.651
Non-First Generation College Student	—	—	8.6%	28.6%	62.9%	4.54	.866

Table 4.12. (Continued)

Support Classification	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Mean Item	Item SD
My peers (friends/ classmates) support me in college?							
First-Generation College Student	1.5%	4.5%	19.4%	32.8%	41.8%	4.09	.965
Non-First Generation College Student	_	1.9%	7.6%	37.1%	53.3%	4.42	.718
My instructors support me in college?							
First-Generation College Student	_	4.7%	20.3%	43.8%	31.3%	4.02	.845
Non-First Generation College Student	1.0%	1.0%	10.9%	43.6%	43.6%	4.28	.776
My family demands make it difficult to succeed in college?							
First-Generation College Student	22.7%	33.3%	21.2%	15.2%	7.6%	_	_
Non-First Generation College Student	26.0%	33.7%	19.2%	14.4%	6.7%	_	_
My job demands make it difficult to succeed in college?							
First-Generation College Student	33.3%	25.8%	21.2%	9.1%	10.6%	_	_
Non-First Generation College Student	27.6%	25.7%	21.0%	21.0%	4.8%	_	_

Table 4.12. (Continued)

Support Classification	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Mean Item	Item SD
My financial resources make it difficult to succeed in college?							
First-Generation College Student	9.0%	14.9%	25.4%	28.4%	22.4%	3.40	1.24
Non-First Generation College Student	15.2%	28.6%	21.0%	22.9%	12.4%	2.89	1.27
I am involved socially at college (e.g. extracurricular activities)?							
First-Generation College Student	34.8%	36.4%	15.2%	10.6%	3.0%	2.11	1.10
Non-First Generation College Student	22.1%	38.5%	18.3%	10.6%	10.6%	2.49	1.25
I feel my study skills are poor?							
First-Generation College Student	24.2%	28.8%	33.3%	12.1%	1.5%	_	_
Non-First Generation College Student	20.6%	31.4%	19.6%	26.5%	2.0%		
I feel academically prepared for the rigors of college?							
First-Generation College Student	1.5%	6.0%	34.3%	38.8%	19.4%	_	_
Non-First Generation College Student	1.0%	9.5%	17.1%	48.6%	23.8%		

In summary, the student support system data showed that first-generation students felt they had lower parent, peer, and instructor support, had more financial problems, and reported a lesser amount of social involvement in school activities. Not surprisingly, these factors were consistent with the literature (Choy, 2001; Inman & Mayes, 1999; Nuñez & Cuccaro-Alamin, 1998; Pascarella, Wolniak, Cruce, & Blaich, 2004; Pike & Kuh 2005; Richardson & Skinner 1992; Terenzini et al., 1996; Warburton et al., 2001).

CHAPTER V:

SUMMARY OF FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

This chapter consists of six sections which provide a summary of the findings: (1) overview of study, (2) research questions, (3) key findings and conclusions, (4) limitations of the study, (5) recommendations for future research, (6) implications for practice , and (6) summary.

Overview of Study

The purpose of this study was to assess the relative effects and the impact of academic self-efficacy and socio-demographic factors on academic achievement, as determined by first-semester grade point averages of first-generation community college students. Both academic self-efficacy and socio-demographic factors have been identified as significant factors contributing to successful college outcomes, especially for first-generation college students. As noted in the previous research, first-generation students differ from their peers in many respects that reduce the likelihood that they will be academically successful in college.

Data were collected using Owen and Froman's (1988) College Academic Self-Efficacy Scale (CASES) and a demographic survey. CASES is designed to measure student's confidence in their ability to complete a list of behaviors associated with

college success. The demographic survey, on the other hand, captured information from five different areas deemed important to the academic success of first-generation and non-first-generation community college students. The five sections included areas of general demographics, family unit demographics, employment demographics, social demographics, and academic demographics.

The surveys were sent to 1,070 curriculum students first enrolled during the fall semester of 2007 and still enrolled during the spring semester of 2008, at six community colleges (rural and urban) located within the state of North Carolina, two from each of the three geographical regions (mountains, piedmont, and coast). The following community colleges were used as research sites for this study: Caldwell Community College and Technical Institute (Hudson, NC), Catawba Valley Community College (Hickory, NC), Fayetteville Technical Community College (Fayetteville, NC), Forsyth Technical Community College (Winston-Salem, NC), Pitt Community College (Greenville, NC), and Cape Fear Community College (Wilmington, NC).

Descriptive statistics were used in the preliminary analysis on data collected from both the College Academic Self-Efficacy Scale (CASES) and socio-demographics Survey. CASES was scored by calculating the mean item score. Once the data were captured, a *t*-test of independence was used to test the differential effect academic self-efficacy has on students who are more successful academically and also on those less successfully academically between first-generation and non-first-generation community college students.

In addition, correlation, *t*-test, *z*-test, chi-square test, and relative risk ratios were used to examine differences in the effects of selected socio-demographics risk factors

between first-generation and non-first-generation community college students. For the purpose of this study, students possessing two or more risk factors were considered at-risk for having lower first-semester grades of less than 2.5 on a 4.0 scale.

Research Questions

Over the past few decades, researchers have carried out several studies on academic self-efficacy and socio-demographic factors. However, research on these two variables at community colleges between first-generation and non-first-generation students is very limited. Therefore, this study addresses the following questions: Does the extent, or confidence, to which students believe that they will be able to succeed in school (academic self-efficacy) and/or does an increase in risk characteristics (social-demographic factors) have a significant effect on academic achievement of community college students?

Two research questions that guided the study are:

Research Question One

What are the effects of academic self-efficacy and first-semester GPA on first-generation and non-first-generation community college students?

Research Hypothesis 1_a: As expected, the findings showed a significant relationship among students in that higher levels of academic self-efficacy were associated with higher first-semester GPAs.

Research Hypothesis 1_b: As expected, the results showed a significant difference between groups in that first-generation students have lower levels of academic self-efficacy than did non-first-generation students.

Research Question Two

What are the effects of selected socio-demographics factors and first-semester GPA on first-generation and non-first-generation community college students?

Research Hypothesis 2$_a$: Despite previous research to the contrary, the findings indicated no significant difference in first-semester GPA among students in that students possessing multiple-risk factors did not have significantly lower first-semester GPA's than did students possessing one or none.

Research Hypothesis 2$_b$: As expected, the results showed a significant difference in the number of risk factors between groups in that first-generation students have higher numbers of risk factors than did non-first-generation students.

Key Findings and Conclusions

With respect to academic self-efficacy, non-first-generation students exhibited a higher overall level of academic self-efficacy than did their first-generation counterparts. Additionally, higher levels of academic self-efficacy were associated with higher first-semester GPAs. Furthermore, first-generation students had lower academic self-efficacy than their non-first-generation counterparts.

In terms of socio-demographics, the 20 question survey captured information from five different areas deemed important to academic success: general demographics, family unit demographics, employment demographics, social demographics, and academic demographics. The findings were generally consistent with North Carolina Community College population as reported. As expected, the survey found differences

between first-generation and non-first-generation students. First-generation students felt they had lower parent, peer, and instructor support, had more financial problems, and reported a lesser amount of social involvement in school activities. Not surprisingly, these factors were consistent with the literature

The z-test revealed no significant differences in proportions between groups based on individual risk factors for those students failing to reach a 2.5 GPA. The analysis revealed some noteworthy differences between groups. In particular, enrollment status while in college and first-generation status were two areas in which the groups differed the most. The relative risk of exposure to risk factors revealed some noteworthy findings: First-generation students with dependent children, who attend college part-time, or possessed "two or more risk factors" were at greater risk of having a lower first-semester GPA.

To summarize, based on the results of this study, academic self-efficacy does appear to positively affect academic achievement. Although academic self-efficacy and academic achievement are clearly related, the nature of that relationship is not yet completely known. As a result, additional research may be needed to investigate the nature of that relationship.

While socio-demographic risk factors did not appear to appreciably influence academic achievement of students in this particular study, prior research makes it clear that there are certain socio-demographic factors that put students at risk and make it even more difficult for "students at community colleges to succeed." Thus, although socio-demographic risk factors did not seem to have a noticeable impact on academic achievement in this particular study— how a researcher defines a multiple risk college

student (based on number of risk factors assigned) could easily alter the results significantly.

Limitations of the Study

First, participants in this study are limited to those students enrolled in curriculum-based courses across six community colleges located in North Carolina during one semester of study. Therefore, these findings may not be generalized to other student populations in other programs of study or different regions of the country. One can only infer that such differences also exist for community college students in other states.

Second, the first-generation students in this community college study may not be typical of first-generation students attending four-year colleges and universities. Their demographic profiles and levels of academic self-efficacy may differ from their counterparts enrolled at four-year colleges and universities.

Third, it is difficult to assess the "pure" effect or impact of a single causal risk factor on academic achievement due to the myriad of other socio-demographics risk factors inherent to first-generation students, which often confound isolating one particular risk factor.

Fourth, the inherent problem of self-reporting (i.e., the degree to which students' statements portray the reality of their individual situations) must also be acknowledged.

Fifth, the survey response rate was relatively low. The low response rate could be a result of the timing of the surveys. The surveys were sent out the week of final exams and just prior to the spring break. Moreover, the Internet-Based email surveys were sent

to directly to the student's college email accounts. Since many students don't attend classes in the summer term, perhaps many students never read their college email.

Recommendations for Future Research

First, although a great deal research has been conducted on first-generation students at four-year colleges and universities in general, future research could explore the effects of academic self-efficacy and socio-demographic factors at four-year colleges and universities to determine if their findings produce similar results.

Second, students possessing two or more risk factors were defined as multiple risk college students in this study. However, results may have varied if more or different risk factors, other than the seven used in this study, were used. Therefore, additional research should explore this scenario.

Third, in an effort to increase the low response rate, it is recommended that surveys be sent out early enough into the semester to avoid competing against exams, semester breaks, and other distracters which may affect return rates.

Fourth, the findings of this study can be further explored by way of qualitative inquiry. In-depth interviews, for instance, can provide much deeper meanings and interpretations about the differences among students.

Implications for Practice

A large amount of research supports the findings that first-generation students have a greater likelihood to drop out of school prematurely and experience more difficulty in obtaining academic success. In fact, first-generation students face many obstacles that impeded their academic success to include: integration, isolation, lack of academic and emotional support, low expectations, competing priorities, and unreceptive

academic environments just to name a few. Awareness of these concerns should prove beneficial to educators, as colleges seek to understand the values, beliefs, and difficulties that first-generation students encounter. By doing so, it should allow for more focused efforts in college intervention efforts to improve integration, retention, and graduation rates. Much of the available literature on first-generation students focuses on four-year colleges and universities, and therefore cannot be generalized to smaller, two-year colleges. Therefore, this study adds to the limited body of knowledge and addresses the gap in literature regarding differences in factors relating to academic success of first-generation and non-first-generation college students at community colleges.

Generally speaking, community colleges already have in place a myriad of programs to support first-generation students and improve academic success of this underserved group, but certainly more can be done. Perhaps, the ramifications of this study are that community colleges educators may need to look elsewhere to find the answers they seek to improve student outcomes. As the study reveals, emotional and external support play a major role in the academic success of first-generation students. Therefore, it is quite possible that the answer eluding so many educators about the keys to success of first-generation students may simply reside in the most overlooked and underutilized resource of all—the first-generation students themselves. Not only can first-generation students provide invaluable information of "what works or what doesn't work," their advice can be very useful in creating an academic environment which is conducive to successful outcomes given their uniqueness.

The researchers cited in this study offered a variety of recommendations that colleges and universities can implement in helping first-generation students increase

academic self-efficacy. A summation of successful college intervention programs is found below:

Early Intervention Programs—Early intervention programs are a key element to providing a solid framework to increase the retention of first-generation, low income minority students. By implementing on-going educational programs and student support services at postsecondary institutions, minority student concerns and issues are addressed at an early stage of college student development. Examples of early intervention programs include the following: pre-college and summer bridge programs, orientations, freshman seminars, career counseling, mentoring programs, academic advising, peer tutoring, early warning systems, special instructional courses, workshops, and cultural events (Gardner, 1996; Riehl, 1994; Richardson & Skinner, 1992; Terenzini et al, 1996; Williams, 1998; York-Anderson & Bowman, 1991).

Campus-Based Engagement (or socialization)—The review of the literature also points out that time spent on campus translates into increased academic success. Therefore, higher education institutions should make every effort to integrate students into campus life by increasing the amount of time first-generation students spend on campus and deepening their involvement in its academic and social culture (Astin, 1993; Billson & Terry, 1982). First-generation students should be encouraged to participate in student organizations and activities which will allow them to form positive social networks with peers. Active learning has been found to have differential impact on various student populations and in different disciplines. For example, first-generation students who report more participation in group discussion, presentations, performances, research projects, and group projects, and who more frequently discuss courses with other

students, had a higher probability of success (Amelink, 2005). As previously cited, anything that increases the amount of time that new college students spend on campus – in study groups, in the library, in co-curricular activities, and especially in living and working on campus—will enhance their probability of success (Gardner, 1996).

Cultural Socialization—Some researchers suggest that first-generation students could benefit from a core curriculum and activities that foster common experiences to help them feel a sense of belonging (Astin, 1993; Gardner, 1996). Activities that involve family members could be particularly beneficial (Hellman & Harbeck, 1997). Also, because first-generation students are less likely to have the time to participate in campus activities outside the classroom, colleges should use classroom time to create learning communities that will help first-generation students connect with their institution (Cross, 1990; Tinto, 1987).

Faculty and Staff Development—Further, institutions should focus on faculty and staff development activities that will help to develop a deeper understanding of the difficulties first-generation students encounter in higher education (Gardner, 1996; Hellman & Harbeck, 1997; Inman & Mayes, 1999; London, 1989; Riehl, 1994; Richardson & Skinner, 1992). Tinto (1987) found that advising positively affects retention and graduation when advisors address the needs of the first-generation students who may not have the same knowledge of how to successfully navigate higher education as other students. First-generation students who reported positive interactions with faculty and other college personnel were more likely to experience academic success (satisfactory GPA and persistence) and were more satisfied with their academic experience (Amelink, 2005). Based on similar findings, Terenzini et al. (1996) found that

first-generation students were less likely to attend workshops and were less likely to see faculty as being concerned with student development and teaching.

The Four-Year College Factor—Interestingly, although attending a four-year college is not an intervention program, it still bears mentioning. Although most first-generation college students attend two-year institutions rather than four-year institutions (National Center for Education Statistics, 1999), first-generation college students who start at four-year institutions are more likely to earn their bachelor's degrees than are those who start at two-year institutions (National Center for Education Statistics, 2000). This might be explained by the fact that first-generation college students accepted at a four-year college probably resemble a traditional student in that the students participated in a rigorous high school curriculum, have high admission test scores, enrolled immediately after high school, and attended full-time.

Summary

To conclude, in the midst of all the attention to student success nationwide, there may be a natural tendency by community colleges to try to identify "the one best approach" for achieving academic success. However, one doesn't exist. While such efforts may be praiseworthy, educators should be cautious about any thoughts of universal applicability and effectiveness as no single approach can be effective in all circumstances and situations. In fact, it is clear that complicated and multifaceted factors for student success are likely to require complex and diverse solutions based on the diversity of all institutions of higher education.

The findings in this study support the point of view that academic self-efficacy appears to be a significant factor contributing to academic achievement. Although

academic self-efficacy was shown to positively affect first-semester GPA, the real question might be how it affects first-semester GPA? The research posits that self-efficacy does not directly influence first-semester GPA; rather it influences the psychological and behavioral traits, which, in turn, influence first-semester GPA. As an example, low self-efficacy has been shown to be linked to low academic motivation, such as not persisting at a task or not working hard (Schunk, 1991). Therefore, it is for these reasons that high academic self-efficacy is likely to espouse higher academic achievement, whereas low academic self-efficacy is likely to diminish it.

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APPENDIX TABLE A.1.

College Self-Efficacy Scale (CASES)

How much "confidence" do you have about doing each of the behaviors listed below? Choose the response that best represents your confidence.

Behaviors	Student Classification	Quite a Lot				Very Little
Taking well-organized notes during a lecture	First-Generation College Student	34.3%	29.9%	25.4%	9.0%	1.5%
	Non-First Generation College Student	26.5%	38.2%	22.5%	7.8%	4.9%
Participating in a class discussion	First-Generation College Student	26.9%	28.4%	31.3%	7.5%	6.0%
	Non-First Generation College Student	32.4%	35.3%	27.5%	2.0%	2.9%
Answering a question in a large class	First-Generation College Student	23.9%	25.4%	28.4%	7.5%	14.9%
	Non-First Generation College Student	30.4%	28.4%	22.5%	12.7%	5.9%
Answering a question in a small class	First-Generation College Student	31.3%	25.4%	31.3%	9.0%	3.0%
	Non-First Generation College Student	41.7%	37.9%	13.6%	5.8%	1.0%
Taking "objective" tests (multiple-choice, T-F, matching)	First-Generation College Student	27.3%	53.0%	16.7%	1.5%	1.5%
	Non-First Generation College Student	42.7%	41.7%	9.7%	2.9%	2.9%
Taking essay tests	First-Generation College Student	23.9%	14.9%	25.4%	17.9%	17.9%
	Non-First Generation College Student	18.4%	30.1%	27.2%	19.4%	4.9%

Table A.1. (continued)

Behaviors	Student Classification	*Quite a Lot*				*Very Little*
Writing a high quality term paper	First-Generation College Student	25.8%	22.7%	30.3%	16.7%	4.5%
	Non-First Generation College Student	23.3%	35.9%	26.2%	10.7%	3.9%
Listening carefully during a lecture on a difficult topic	First-Generation College Student	23.9%	37.3%	19.4%	16.4%	3.0%
	Non-First Generation College Student	28.2%	40.8%	20.4%	8.7%	1.9%
Tutoring another student	First-Generation College Student	10.4%	17.9%	34.3%	19.4%	17.9%
	Non-First Generation College Student	13.6%	27.2%	31.1%	16.5%	11.7%
Explaining a concept to another student	First-Generation College Student	16.4%	28.4%	31.3%	16.4%	7.5%
	Non-First Generation College Student	24.3%	41.7%	22.3%	8.7%	2.9%
Asking a professor in class to review a concept you don't understand	First-Generation College Student	15.2%	34.8%	28.8%	6.1%	15.2%
	Non-First Generation College Student	29.8%	37.5%	22.1%	6.7%	3.8%
Earning good marks in most courses	First-Generation College Student	34.3%	34.3%	28.4%	1.5%	1.5%
	Non-First Generation College Student	45.2%	36.5%	12.5%	3.8%	1.9%
Studying enough to understand content thoroughly	First-Generation College Student	21.2%	30.3%	27.3%	19.7%	1.5%
	Non-First Generation College Student	30.1%	38.8%	19.4%	10.7%	1.0%

Table A.1. (continued)

Behaviors	Student Classification	*Quite a Lot*				*Very Little*
Running for student government office	First-Generation College Student	1.5%	6.0%	16.4%	14.9%	61.2%
	Non-First Generation College Student	4.8%	8.7%	15.4%	21.2%	50.0%
Participating in extracurricular events (sports, clubs)	First-Generation College Student	11.9%	9.0%	20.9%	20.9%	37.3%
	Non-First Generation College Student	13.7%	18.6%	26.5%	17.6%	23.5%
Making professors respect you	First-Generation College Student	28.4%	32.8%	31.3%	4.5%	3.0%
	Non-First Generation College Student	35.6%	41.3%	19.2%	2.9%	1.0%
Attending class regularly	First-Generation College Student	69.2%	26.2%	4.6%	—	—
	Non-First Generation College Student	61.5%	28.8%	7.7%	—	1.9%
Attending class consistently in a dull course	First-Generation College Student	53.0%	34.8%	7.6%	1.5%	3.0%
	Non-First Generation College Student	48.5%	32.0%	13.6%	3.9%	1.9%
Making a professor think you're paying attention in class	First-Generation College Student	33.3%	45.5%	18.2%	1.5%	1.5%
	Non-First Generation College Student	38.2%	34.3%	19.6%	2.9%	4.9%

Table A.1. (continued)

Behaviors	Student Classification	Quite a Lot				Very Little
Understanding most ideas you read in your texts	First-Generation College Student	31.3%	38.8%	23.9%	3.0%	3.0%
	Non-First Generation College Student	31.7%	49.0%	13.5%	4.8%	1.0%
Understanding most ideas presented in class	First-Generation College Student	35.8%	28.4%	32.8%	3.0%	_
	Non-First Generation College Student	36.5%	47.1%	11.5%	3.8%	1.0%
Performing simple math computations	First-Generation College Student	34.3%	40.3%	19.4%	3.0%	3.0%
	Non-First Generation College Student	44.7%	34.0%	11.7%	6.8%	2.9%
Using a computer	First-Generation College Student	47.8%	35.8%	13.4%	3.0%	_
	Non-First Generation College Student	62.1%	31.1%	2.9%	1.9%	1.9%
Mastering most content in a math course	First-Generation College Student	22.4%	31.3%	22.4%	16.4%	7.5%
	Non-First Generation College Student	35.6%	26.9%	19.2%	10.6%	7.7%
Talking to a professor privately to get to know him or her	First-Generation College Student	9.1%	24.2%	43.9%	12.1%	10.6%
	Non-First Generation College Student	22.5%	38.2%	21.6%	12.7%	4.9%
Relating course content to material in other courses	First-Generation College Student	25.4%	28.4%	28.4%	11.9%	6.0%
	Non-First Generation College Student	31.1%	44.7%	19.4%	2.9%	1.9%

Table A.1. (continued)

Behaviors	Student Classification	Quite a Lot				Very Little
Challenging a professor's opinion in class	First-Generation College Student	3.0%	23.9%	22.4%	25.4%	25.4%
	Non-First Generation College Student	12.7%	27.5%	27.5%	15.7%	16.7%
Applying lecture content to a laboratory session	First-Generation College Student	10.4%	29.9%	28.4%	20.9%	10.4%
	Non-First Generation College Student	26.7%	35.6%	26.7%	8.9%	2.0%
Making good use of the library	First-Generation College Student	25.4%	28.4%	26.9%	14.9%	4.5%
	Non-First Generation College Student	24.3%	32.0%	31.1%	7.8%	4.9%
Getting good grades	First-Generation College Student	40.3%	28.4%	28.4%	3.0%	_
	Non-First Generation College Student	46.6%	34.0%	15.5%	1.9%	1.9%
Spreading out studying instead of cramming	First-Generation College Student	15.4%	21.5%	38.5%	15.4%	9.2%
	Non-First Generation College Student	17.5%	23.3%	35.9%	13.6%	9.7%
Understanding difficult passages in textbooks	First-Generation College Student	13.4%	37.3%	28.4%	16.4%	4.5%
	Non-First Generation College Student	26.2%	33.0%	30.0%	8.7%	1.9%
Mastering content in a course you're not interested in	First-Generation College Student	9.0%	34.3%	38.8%	14.9%	3.0%
	Non-First Generation College Student	25.2%	29.1%	28.2%	14.6%	2.9%

APPENDIX TABLE A.2.

General Demographics

General	First-Generation		Non-First-Generation		Total Sample	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Gender						
Male	25	37.3%	43	40.6%	68	39.3%
Female	42	62.7%	63	59.4%	105	60.7%
Total	67	100.0%	106	100.0%	173	100.0%
Age						
18-24	46	68.7%	71	67.0%	117	67.6%
25-34	7	10.4%	25	23.6%	32	18.5%
35-44	6	9.0%	6	5.7%	12	6.9%
45-54	5	7.5%	4	3.8%	9	5.2%
55 or older	3	4.5%	_	_	3	1.7%
Total	67	100.0%	106	100.0%	173	100.0%
Race						
Caucasian	49	73.1%	89	84.0%	138	79.8%
American-Indian	1	1.5%	1	.9%	2	1.2%
African-American	10	14.9%	8	7.5%	18	10.4%
Hispanic	3	4.5%	1	.9%	4	2.3%
Asian	4	6.0%	4	3.8%	8	4.6%
Other	_	_	3	2.8%	3	1.7%
Total	67	100.0%	106	100.0%	173	100.0%

APPENDIX TABLE A.3.

Family Unit Demographics

Family Unit	First-Generation		Non-First-Generation		Total Sample	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Married						
No	53	79.1%	78	73.6%	131	75.7%
Yes	14	20.9%	28	26.4%	42	24.3%
Total	67	100.0%	106	100.0%	173	100%
Single Parent						
No	59	88.1%	98	92.5%	157	90.8%
Yes	8	11.9%	8	7.5%	16	9.2%
Total	67	100.0%	106	100.0%	173	100.0%
Dependent Children						
No	48	71.6%	80	75.5%	128	74.0%
Yes	19	28.4%	26	24.5%	45	26.0%
Total	67	100.0%	106	100.0%	173	100.0%

APPENDIX TABLE A.4.

Employment Demographics

Employment	First-Generation		Non-First-Generation		Total Sample	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Employment Status						
Unemployed	24	35.8%	22	20.8%	46	26.6%
Working Part-Time	23	34.3%	55	51.9%	78	45.1%
Working Full-Time	20	29.9%	29	27.4%	49	28.3%
Total	67	100.0%	106	100.0%	173	100.0%
Hours Worked						
(Last Week)						
None	21	33.9%	15	15.0%	36	22.2%
< 10 Hrs	4	6.5%	7	7.0%	11	6.8%
11-20 Hrs	9	14.5%	21	21.0%	30	18.5%
21-30 Hrs	8	12.9%	20	20.0%	28	17.3%
31-40 Hrs	14	22.6%	28	28.0%	42	25.9%
> 40 Hrs	6	9.7%	9	9.0%	15	9.3%
Total	62	100.0%	100	100.0%	162	100.0%
No Data Available	5	_	6	_	11	_
Total	67	_	106	_	173	_

APPENDIX TABLE A.5.

Social Demographics

Social	First-Generation		Non-First-Generation		Total Sample	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Mother's Highest						
Educational Level						
< High School (HS)	19	28.8%	2	1.9%	21	12.2%
HS Graduate	42	63.6%	12	11.3%	54	31.4%
Some College	5	7.6%	34	32.1%	38	22.1%
Associate Degree	–	–	17	16.0%	17	9.9%
Bachelor or 4-yr	–	–	30	28.3%	30	17.4%
Graduate Degree	–	–	11	11.9%	12	7.0%
Total	66	100.0%	106	100.0%	172	100.0%
No Data Available	1	–	–	–	1	–
Total	67	–	–	–	173	–
Father's Highest						
Educational Level						
< High School (HS)	23	37.1%	4	3.9%	27	16.4%
HS Graduate	35	56.5%	17	16.5%	52	31.5%
Some College	4	6.4%	26	25.2%	29	17.6%
Associate Degree	–	–	22	21.4%	22	13.3%
Bachelor or 4-yr	–	–	27	26.2%	27	16.4%
Graduate Degree	–	–	7	6.8%	8	4.8%
Total	62	100.0%	103	100.0%	165	100.0%
No Data Available	5	–	3	–	8	–
Total	67	–	106	–	173	–

Table A.5. (continued)

Social	First-Generation		Non-First-Generation		Total Sample	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Mother's Parental Occupation						
Professional/ Manager	5	7.9%	35	33.7%	40	24.0%
Clerical/Sales/ Service	15	23.8%	22	21.2%	37	22.2%
Industrial/Public Services	4	6.3%	12	11.5%	16	9.6%
Production/ Laborer	14	22.2%	7	6.7%	21	12.6%
Others	25	39.7%	28	26.9%	53	31.7%
Total	63	100.0%	104	100.0%	167	100%
No Data Available	4	_	2	_	6	_
Total	67	_	106	_	173	_
Father's Parental Occupation						
Professional/ Manager	8	12.3%	35	34.3%	43	25.7%
Clerical/Sales/ Service	1	1.5%	3	2.9%	4	2.4%
Industrial/Public Services	10	15.4%	23	22.5%	33	19.8%
Production/ Laborer	35	53.8%	23	22.5%	58	34.7%
Others	11	16.9%	18	17.6%	29	17.4%
Total	65	100.0%	102	100.0%	167	100.0%
No Data Available	2	_	4	_	6	_
Total	67	_	106	_	173	_

Table A.5. (continued)

Social	First-Generation		Non-First-Generation		Total Sample	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Main Reason for						
Attending College						
Improve Job Skills	5	7.5%	3	2.9%	8	4.7%
Obtain a 2-Year Degree	21	31.3%	30	28.6%	51	29.7%
Transfer to 4-Year College	41	61.2%	72	68.6%	113	65.7%
Total	67	100.0%	105	100.0%	172	100.0%
No Data Available	_	_	1	_	1	_
Total	_	_	106	_	173	_

APPENDIX TABLE A.6.

Academic Demographics

Academics	First-Generation		Non-First-Generation		Total Sample	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Educational Attainment						
Some High School	3	4.5%	2	1.9%	5	2.9%
GED Recipient	12	17.9%	5	4.7%	17	9.8%
High School Diploma	52	77.6%	99	93.0%	151	87.3%
Total	67	100.0%	106	100.0%	173	100.0%
Enrollment Delay						
No Delay	27	40.3%	65	61.3%	92	53.2%
< 1 Year	7	10.4%	4	3.8%	11	6.4%
1 – 2 Years	12	17.9%	10	9.4%	22	12.7%
3 – 5 Years	6	9.0%	5	4.7%	11	6.4%
> 5 Years	15	22.4%	22	20.8%	37	21.4%
Total	67	100.0%	106	100.0%	173	100.0%
Enrollment Status						
Part-Time	25	37.3%	27	25.5%	52	30.1%
Full-Time	42	62.7%	79	74.5%	121	69.9%
Total	67	100.0%	106	100.0%	173	100.0%
Student Classification						
First-Generation	67	100.0%	_	_	67	38.7%
Non-First-Generation	_	_	106	100.0%	106	61.3%
Total	67	100.0%	106	100.0%	173	100.0%

Table A.6. (continued)

Academics	First-Generation		Non-First-Generation		Total Sample	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
First-Semester GPA						
First-Semester GPA (Less than 2.5)	22	32.8%	20	18.9%	42	24.3%
First-Semester GPA (2.5 or higher)	45	67.2%	86	81.1%	131	75.7%
Total	67	100.0%	106	100.0%	173	100.0%
Learning Disability						
No	57	85.1%	87	82.1%	144	83.2%
ADD/ADHD	6	9.0%	8	7.5%	14	8.1%
Dyslexia	3	4.5%	2	1.9%	5	2.9%
Other Learning Disability	1	1.5%	9	8.5%	10	5.8%
Total	67	100.0%	106	100.0%	173	100.0%
Program of Study						
Business Administration.	16	23.9%	10	9.6%	26	15.2%
Computer Info Technology	10	14.9%	11	10.6%	21	12.3%
Associate in Arts (College Transfer)	28	41.8%	48	46.2%	76	44.4%
Associate in Science (College Transfer)	13	19.4%	35	33.7%	48	28.1%
Total	67	100.0%	104	100.0%	171	100.0%
No Data Available	–	–	2	–	2	–
Total	–	–	106	–	173	–

APPENDIX B

Socio-Demographic Survey and College Academic Self-Efficacy Scale (CASES)

Socio-Demographic Survey and College Academic Self-Efficacy Scale (CASES)

Directions: This survey consists of two sections: 1) Demographic Survey, and 2) College Academic Self-Efficacy Scale (CASES).

To complete Section 1, please "click" or darken the circle for the most appropriate response. Please choose only one answer for each question.

SECTION 1: SOCIO-DEMOGRAPHIC SURVEY

GENERAL DEMOGRAPHICS

1.Gender:	2.Age:	3.Race/Ethic Origin:
○ Male	○ 18-24	○ Caucasian
○ Female	○ 25-34	○ American Indian
	○ 35-44	○ African American
	○ 45-54	○ Hispanic
	○ 55 or older	○ Asian
		○ Other

FAMILY UNIT DEMOGRAPHICS

4. Are you Married?	5. Are you a Single Parent?	6. Do you have Dependent Children?
○ Yes	○ Yes	○ Yes
○ No	○ No	○ No

EMPLOYMENT DEMOGRAPHICS

7. What is your Employment Status while attending college?	8. If employed, how many Hours (on average) do you work per week?
○ Unemployed	○ None
○ Working Part-Time	○ Less than 10 hours
○ Working Full-Time	○ 11- 20 hours
	○ 21 - 30 hours
	○ 31 – 40 hours
	○ Over 40 hours

SOCIAL DEMOGRAPHICS

9. What is the <u>Highest Education Level</u> obtained by your mother and father?	Mother	Father
Less than High School	○	○
High School Graduate	○	○
Associate Degree or some college	○	○
Bachelor's or four-year degree	○	○
Graduate or professional degree	○	○

10. What best describes your mother and father's (or guardian's) <u>Occupation</u>?	
Mother	**Father**
○ Professional/Managerial	○ Professional/Managerial
○ Clerical/Sales/Service	○ Clerical/Sales/Service
○ Industrial/Public Services	○ Industrial/Public Services
○ Production/Laborers	○ Production/Laborers
○ Other	○ Other

11. What is your <u>College Aspiration</u> or main reason for attending a community college? Please choose only one.
○ Improve Job Skills
○ Obtain an Associate Degree
○ Transfer to a four-year college

ACADEMIC DEMOGRAPHICS

12. <u>Educational Attainment</u> before enrolling in college:	13. <u>Delay in Enrollment</u> from high school to college:	14. <u>Enrollment Status:</u>
○ Some High School	○ No delay – enrolled at college directly out of high school	○ Part-time
○ GED Recipient	○ Less than 1 year	○ Full-time
○ High School Diploma	○ 1 - 2 years	
	○ 3 - 5 years	
	○ Over 5 years	

15. **What is your <u>College Classification</u>?**	16. **What was your <u>First-Semester GPA</u>?**
○ First-Generation College Student (*neither of the your parents had college experience*)	○ First-semester GPA (2.5 or higher on a 4.0 scale) or Grade of "C+" or higher
○ Non-First-Generation College Student (*at least one of the your parents had college experience*)	○ First-semester GPA (Less than 2.5 on a 4.0 scale) or Grade of "C" or less

17. According to the National Institutes of Health, approximately fifteen (15) percent of the U.S. population, or one in seven Americans, has some type of learning disability. Have you ever been "<u>Diagnosed</u>" with a <u>Learning Disability</u> which has made it more difficult for you to succeed in school? If so, please choose one?

○ No

○ Attention deficit disorder (ADD) / Attention deficit hyperactivity disorder (ADHD)

○ Dyslexia

○ Other learning disabilities not listed

18. My <u>Program of Study is</u>:

○ Business Administration

○ Computer Information Technology

○ Associate in Arts (college transfer degree option)

○ Associate in Science (college transfer degree option)

19. Please indicate the extent to which you disagree or agree with the following statements by circling the most appropriate response for EACH question:	Strongly Disagree ←→ Strongly Agree
a. My parents (or guardians) support me in college?	1 2 3 4 5
b. My peers (friends/classmates) support me in college?	1 2 3 4 5
c. My instructors support me in college?	1 2 3 4 5
c. My family demands make it difficult to succeed in college?	1 2 3 4 5
d. My job demands make it difficult to succeed in college?	1 2 3 4 5
e. My financial resources make it difficult to succeed in college?	1 2 3 4 5
f. I am involved socially at college (e.g. extracurricular activities)?	1 2 3 4 5
g. I feel my study skills are poor?	1 2 3 4 5
h. I feel academically prepared for the rigors of college?	1 2 3 4 5

| 20.	**I am enrolled at:**
○	Caldwell Community College & Technical Institute (Hudson, NC)
○	Catawba Valley Community College (Hickory, NC)
○	Fayetteville Technical Community College (Fayetteville, NC)
○	Forsyth Technical Community College (Winston-Salem, NC)
○	Pitt Community College (Greenville, NC)
○	Cape Fear Community College (Wilmington, NC)

Note: When you have completed filling out the above survey, please complete Section 2. If you feel that any of the questions invade your privacy, you may decline to answer them. Be assured your confidentiality will be respected.

SECTION 2: COLLEGE ACADEMIC SELF-EFFICACY SCALE (CASES)
Owen, S. & Froman, R. (1988).

DIRECTIONS. We are interested in learning more about you to help us improve our program. Your responses are strictly confidential and will not be shown to others. Do not sign your name. We hope you will answer each item, but there are no penalties for omitting an item.

How much confidence do you have about doing each of the behaviors listed below? Circle the letters that best represent your confidence.

A	B	C	D	E
Quite				Very
A Lot	←	*CONFIDENCE*	→	Little
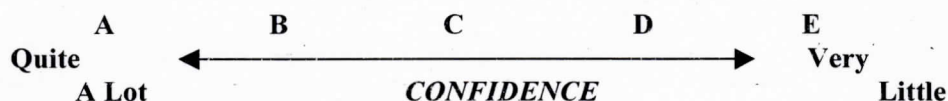
Lots   *Little*

A B C D E   1. Taking well-organized notes during a lecture.
A B C D E   2. Participating in a class discussion.
A B C D E   3. Answering a question in a large class.
A B C D E   4. Answering a question in a small class.
A B C D E   5. Taking "objective" tests (multiple-choice, T-F, matching)
A B C D E   6. Taking essay tests.
A B C D E   7. Writing a high quality term paper.
A B C D E   8. Listening carefully during a lecture on a difficult topic.
A B C D E   9. Tutoring another student.
A B C D E   10. Explaining a concept to another student.
A B C D E   11. Asking a professor in class to review a concept you don't understand.
A B C D E   12. Earning good marks in most courses.
A B C D E   13. Studying enough to understand content thoroughly.
A B C D E   14. Running for student government office.
A B C D E   15. Participating in extracurricular events (sports, clubs).
A B C D E   16. Making professors respect you.
A B C D E   17. Attending class regularly.
A B C D E   18. Attending class consistently in a dull course.
A B C D E   19. Making a professor think you're paying attention in class.
A B C D E   20. Understanding most ideas you read in your texts.
A B C D E   21. Understanding most ideas presented in class.
A B C D E   22. Performing simple math computations.
A B C D E   23. Using a computer.
A B C D E   24. Mastering most content in a math course.
A B C D E   25. Talking to a professor privately to get to know him or her.
A B C D E   26. Relating course content to material in other courses.
A B C D E   27. Challenging a professor's opinion in class.
A B C D E   28. Applying lecture content to a laboratory session.
A B C D E   29. Making good use of the library.
A B C D E   30. Getting good grades.
A B C D E   31. Spreading out studying instead of cramming.
A B C D E   32. Understanding difficult passages in textbooks.
A B C D E   33. Mastering content in a course you're not interested in.

Thank you so much for completing this survey! Please return this survey in the self-addressed, stamped envelope.

APPENDIX C

Survey Cover Letter and Reminder Postcard

<Code
#>

<Date>

<Name >
<Mailing address>
<City, State, and Zip>

Dear <First Name>:

I need your help! My name is Mark Barber and I am a doctoral student at Appalachian State University. My doctoral research focuses on the relative effects and impact of academic self-efficacy and socio-demographic factors on academic achievement, as determined by first-semester GPA, on first-generation community college students. As part of this research, I really need your involvement in completing this survey. It should take only about 7-10 minutes to complete. I hope you will take part.

I'd like to thank you, in advance, for participating in this survey. Of course, doing so is entirely voluntary, but I do hope that you will choose to complete the survey. Also, be assured that your response to the survey will be kept strictly confidential. You will note that I have included a code on the survey. This is so I can keep track of who has responded and who has not. I am not interested in identifying individuals.

If I do not hear from you within two weeks, I will send you a reminder card. I will only do this one time, however. If you do not want to participate, simply ignore the reminder.

<Name of community college> has given me permission to include you in this survey. In addition, this study has been reviewed and approved by Appalachian State University's Institutional Review Board (IRB). The IRB has determined that this study meets the ethical obligations required by federal law and University policies. If you have questions about the study or procedures, you may contact me, Mark E. Barber, at mbarber@cccti.edu or 828-726-2359.

PLEASE NOTE: If you prefer, you can respond to this survey online at http://www.cccti.edu/surveys/CASE_Survey.htm . If you respond online, you do not need to return this survey in the self-addressed, stamped envelope.

Once again, your participation in this survey will help me considerably in my studies.

With kindest regards,

Mark E. Barber
Department Chair, Industrial & Public Services
Caldwell Community College and Technical Institute
2855 Hickory Blvd.
Hudson, NC 28638
Phone: 828- 726-2359
Fax: 828- 726-2489

Survey Reminder!

Dear Sir/Ma'am:

About two weeks ago, I sent you a survey on the effects of academic self-efficacy and socio-demographic factors on academic success of first-generation community college students. **If you have already completed the survey and returned it, thank you!** If not, I would certainly appreciate it if you could do so at your earliest convenience.

Your participation is crucial to the validity of the study! I realize you're very busy, so this will be the only reminder card I send you.

With kindest regards,

Mark E. Barber

APPENDIX D

College Academic Self-Efficacy Scale (CASES) Scoring Sheet

Mark E. Barber
Department Chair, Industrial & Public Services
Caldwell Community College and Technical Institute
2855 Hickory Blvd.
Hudson, NC 28638

7 January 2008

Dear Mark,

Thank you for your inquiry about the College Academic Self-Efficacy Scale (CASES). You are certainly welcome to use CASES. I've attached a copy of the scale. Here are a few summary points about the scale.
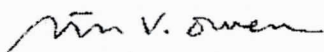
Items are scored as A ("quite a lot") = 5…E ("very little") = 1. On the other hand, because we read from right to left, data entry is faster letting A = 1, and E = 5. If you enter data with A = 1, then let the computer recode the values so that A becomes 5, B becomes 4, etc. In calculating an overall CASES score, we prefer calculating a mean rather than a sum.

You may wish to modify Survey instructions to best fit your application. For example, if you need informed consent, you might say something like "Filling out this Survey is completely voluntary and confidential. There are no penalties for not participating, and you may quit at any time."

The next page shows the CASES items. Following that is a conversation about scoring CASES, plus some normative data.

Best wishes in your research.

Sincerely,

Steven V. Owen, Professor
Department of Epidemiology & Biostatistics
University of Texas Health Science Center at San Antonio
7703 Floyd Curl Dr., MC 7802
San Antonio, TX 78229-3900

Ph: 210-567-5866
Fax: 210-567-6305
Internet: OwenSV@uthscsa.edu

APPENDIX E

Permission to use College Academic Self-Efficacy Scale (CASES)

Mail From: Mark Barber

File   Edit   View   Actions   Tools   Window   Help

✕ Close   Reply   ⤷ Forward   ▾

Mail | Properties | Personalize

From: Mark Barber   1/7/2008 3:03 pm
To: owensv@uthscsa.edu
Subject: Permission to use CASES

Dr. Owen,

Good afternoon! My name is Mark Barber, doctoral student, at Appalachian State University located in beautiful Boone, NC. I'm currently doing research for my dissertation and searching for a consistent and reliable instrument to measure academic self-efficacy. I am very interested in using your College Academic Self-Efficacy Scale (CASES) instrument for my study on "The Impact of Academic Self-Efficacy and Socio-Demographic Factors on Academic Success of First-Generation Community College Students". Therefore, I'm asking for your permission to use CASES? If permission is granted, would you be so kind as to email me the CASES along with all applicable instructions for scoring, etc.?

Thanks so much your time and consideration,

//Signed//

Mark E. Barber
Department Chair, Industrial & Public Services
Caldwell Community College and Technical Institute
2855 Hickory Blvd.
Hudson, NC 28638
Phone: 828- 726-2359
Fax: 828- 726-2489
Email: mbarber@cccti.edu

Mail From: "Owen, Steven V" <OwenSV@uthscsa.edu>

File   Edit   View   Actions   Tools   Window   Help

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Mail | Properties | Personalize | Message Source

From: "Owen, Steven V" <OwenSV@uthscsa.edu>   1/7/2008 3:11 pm
To: "Mark Barber" <mbarber@cccti.edu>
Subject: RE: Permission to use CASES

Greetings, Mark.

I am attaching the relevant documents for you. Good luck in your
dissertation work!

Best wishes,

steve

Steven V. Owen, Professor

Dept. of Pediatrics, School of Medicine, and

Dept. of Epidemiology & Biostatistics

Univ. of Texas Health Science Center at San Antonio

7703 Floyd Curl Dr., MC 7802

San Antonio, TX 78284-7802

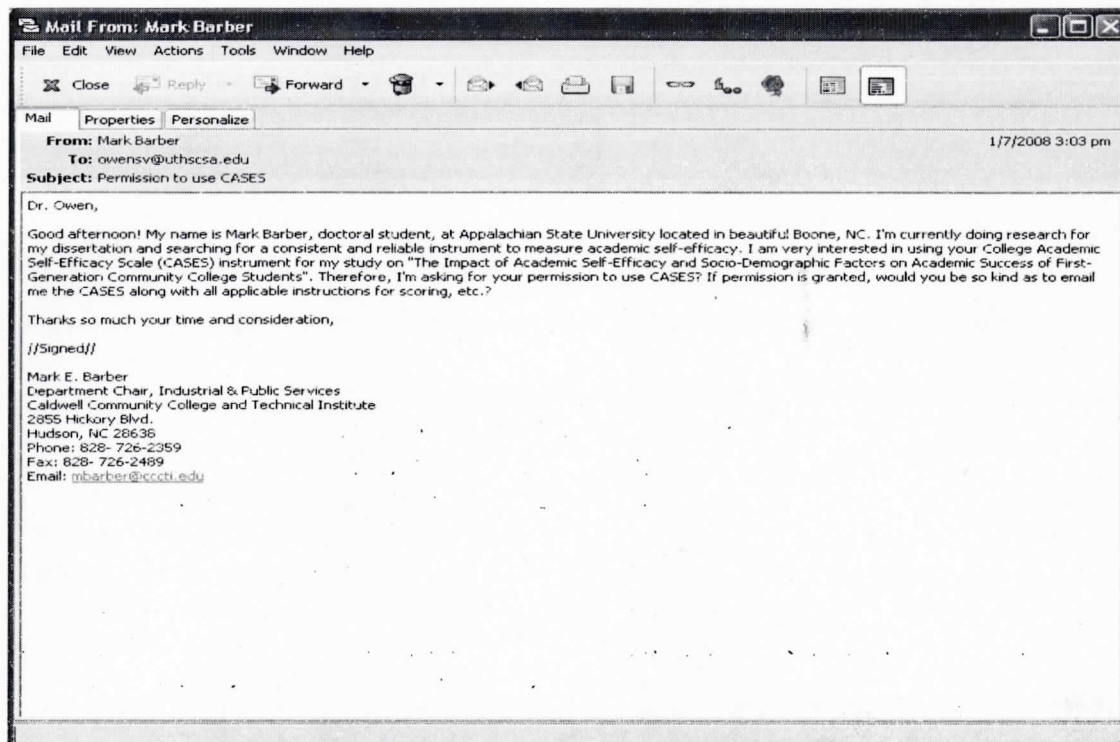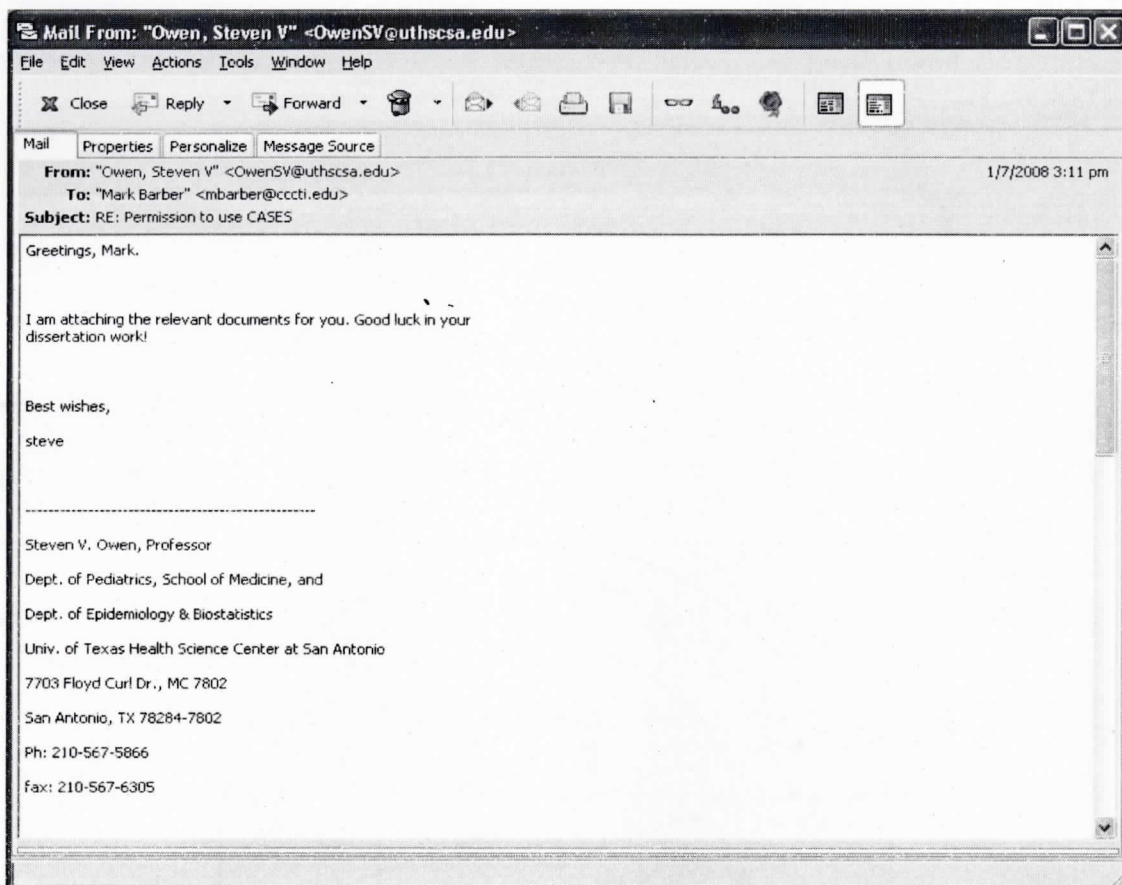Ph: 210-567-5866

fax: 210-567-6305

APPENDIX F

IRB Approval

Appalachian
STATE UNIVERSITY

Research and Graduate Studies
ASU Box 32068
Boone, NC 28608-2068
(828) 262-2130
Fax: (828) 262-2709
www.graduate.appstate.edu

TO: Dr. George Olson
          Department of LES
          Mr. Mark Barber
          Department of LES

FROM: Robert L. Johnson, Administrator
          Institutional Review Board

DATE: April 18, 2008

SUBJECT: Institutional Review Board
          Request for Human Subjects Research

REFERENCE: *"The Impact of Academic Self-Efficacy and Socio-Demographic
            Factors on Academic Success of First-Generation Community
            College Students"*

            IRB Reference #08-181

            Initial Approval Date – April 04, 2008
            End of Approval Period – April 03, 2009

Your request for Review of Human Subjects Research has been approved.

OHRP Guidelines stipulate that projects may be approved for a maximum of one (1) year. During this period, you should contact this office to:

1. report any unanticipated problems involving risks to subjects or others,
2. request modification in the approved protocol,
3. request an Extension beyond the one (1) approval, and/or
4. inform the IRB of the completion of the project.

Best wishes with your research.

RLJ/lab

A MEMBER INSTITUTION OF THE UNIVERSITY OF NORTH CAROLINA — AN EQUAL OPPORTUNITY EMPLOYER

BIOGRAPHICAL INFORMATION

Mark Eric Barber was born on December 23, 1964, in Lenoir, North Carolina, to Carson Pitts Barber and Virginia Eloise Barber. He grew up in Caldwell County and graduated from South Caldwell High School in Hudson, North Carolina in 1983. In October 1988, he married Pamela Marie Welch of Hudson. Today, Mark and Pam live in Granite Falls, North Carolina, with their two sons, Tyler and Alex.

In 1985, Barber joined the United States Air Force, which proved to be a turning point in his life. While serving in the Air Force, he got to travel to foreign lands, meet fascinating people, and learn an occupational trade (all while developing and honing his leadership skills). While serving our country (and that service still continues today as an Air Force Reservist), he realized the importance of furthering his education and simultaneously enrolled in the Community College of the Air Force, earning an Associate in Applied Science in 1989. He continued on with his education and completed his Bachelor of Science degree in Management from the University of South Carolina at Coastal Carolina College in 1990. In 1991, he enrolled at Webster University and earned a Master of Arts degree in Human Resource Development in 1992.

In 1996, Barber began his career in the North Carolina Community College System when he accepted the position of Director of Human Resources at Caldwell Community College and Technical Institute in Hudson, North Carolina. In 2006, while looking for a new challenge, he was offered the position of Department Chair, Industrial

and Public Services at Caldwell Community College and Technical Institute. In this role, he is responsible for direction, planning, and coordination of the largest curriculum department at the college containing fourteen (14) academic departments; he is also responsible for over 1,100 students annually and manages a $2 million budget. Later on that same year, he completed the Department Chair Institute program, and in 2008, completed the Executive Leadership Program, both sponsored in part by the North Carolina Community College System and North Carolina State University. In May 2009, Barber completed his Doctorate Degree in Educational Leadership at Appalachian State University under the direction of Dr. George Olson.

Barber is very active in his community and serves as the Chairman of Caldwell County for the North Carolina Committee Employer Support for the Guard and Reserve (ESGR), Past President for Caldwell County/Lenoir Crimestoppers Association, Past President of the North Carolina Chapter of College and University Professional Association of Human Resources, (includes all 16 public universities, 58 community colleges, & private colleges), Past Chairperson for Caldwell County Job Service Employer Committee, Past Board of Director for Caldwell Advocacy for Disabled Employees, and the recipient of the Outstanding Young Americans for 1998.