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The Effect of Academic Self-Efficacy on the Grade Point Average of Three Ethnic Groups at a Four-Year College

Linda L. Hogans

THE EFFECT OF ACADEMIC SELF-EFFICACY ON THE GRADE POINT AVERAGE OF THREE ETHNIC GROUPS AT A FOUR-YEAR COLLEGE

DISSERTATION

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By

Linda L. Hogans

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ABSTRACT

THE EFFECT OF ACADEMIC SELF-EFFICACY ON THE GRADE POINT AVERAGE OF THREE ETHNIC GROUPS AT A FOUR-YEAR COLLEGE

Linda L. Hogans

Barry University, 2008

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This study investigated the effect of academic self-efficacy on the grade point average of three ethnic groups at a four-year college. A total of 450 surveys were distributed. The ethnic groups identified to participate in this study were African-American, White, and Hispanic college students. To measure participants' academic self-efficacy, the researcher used the College Academic Self-Efficacy Scale, hereafter referred to as CASES, to assess participants' level of academic self-efficacy. The CASES instrument was developed by Owen and Froman (1988).

The significance of this study was rooted in educational achievement gap among racial groups (Kober, 2001) in the completion of postsecondary education. According to Harvey (2003), bachelor degree attainment rates among postsecondary students enrolled in 1989-90 after five years was 41.8 percent for African-American, 52.1 percent for White, and 44 percent for Hispanic students. Likewise, the U. S. Department (2002) tracked a cohort of bachelor degree seeking students beginning at a 4-year institution in 1995-96. The completion rates for African-American, White, and Hispanic students were 40.9 percent, 59 percent, and 41.4 percent respectively.

Given the disparity in completion rates of these ethnic groups, Lotkowski, Robbins, & Noeth (2004) recommended that in addition to academic factors such as academic achievement tests, aptitude tests, and grade point average, that non-academic factors should be considered. Factors such as self-confidence and achievement motivation should be considered, especially in college retention and performance in an effort to bridge the achievement gap. Eccles and Wigfield (2002) have also included, within the non-academic arena, a broad range of constructs as relating to the acquisition of knowledge that includes self-efficacy beliefs.

In addressing the self-efficacy beliefs of college students, the College Academic Self-Efficacy Scale was utilized to measure academic self-efficacy. The research questions for this study were the following: What is the effect of academic self-efficacy on the grade point average of African-American students at a four-year college?; What is the effect of academic self-efficacy on the grade point average of White students at a four-year college?; and What is the effect of academic self-efficacy on the grade point average of Hispanic students at a four-year college? The dependent variable was the grade point average of the participants, and the independent variable was academic self-efficacy as measured by the CASES instrument.

The CASES instrument was distributed to 450 college students. The instrument return rate was 56 percent or 253 surveys. Eighty-six percent or 218 CASES instrument were usable in this study. The count distribution for African-American students was 22, for White students 178, and for Hispanic students 18. The percentage of participation for each ethnic group in this study (i.e., 9.77, 82.2, and 6.7 for African-American, White, and

Hispanic students) closely mirrored the four-year institution's ethnic demographics of 10.5, 76.3, and 5.8 respectively.

The results of this study which was designed to demonstrate self-efficacy serving as a predictor of academic performance as measured by grade point average did not yield statistical significance in the effect of academic self-efficacy on the grade point average of three ethnic groups at a four-year college.

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I am ever grateful, and so very humbled by the richness of this journey, this was a life changing experience.

DEDICATIONS

This work is dedicated to the memory of my great grandmother, Clora Gregory, who, through the challenges of blindness and the amputation of one arm, dedicated her life to rearing six young granddaughters, Dorothy, Murdice, Elizabeth, Little Clora (my mother), Ophelia, and Bobbie. From these beginning I learned courage, perseverance, dedication, and the importance of family. Further, this work is dedicated to my three daughters, Tiffany, Lisa, and April through whose veins flow the strength of my past and my hope for the future, and to the first of my grandchildren to come, Cyrus, through whose eyes I have seen the years past my lifetime. I also dedicate this work to the memory of my father, John Henry Andrews, Sr., whose life here was far too short.

This work is dedicated to forever and lifelong friends that have helped to support my weary hands, heart, and soul through this journey without whom I would have surely yielded to the forces of this world. To the many individuals that I have been provided the opportunity to serve, I believe that you served me far greater.

In my current position as the director of the Office of Special Programs, it is my primary responsibility to administer programs that support middle and high school students in attaining their diplomas and entering college. It is further my responsibility to administer programs that support college students in attaining their college degree. Let it be known to all of you, those in my past, those in my present, and those who will come in my future, I dream of a world where there is no need for *special programs* and as a result I work hard in my reality.

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CHAPTER I

THE PROBLEM

Introduction

Statement of the Problem

One of the most important educational challenges facing the United States today is the elimination of the large educational achievement gaps among the nation's racial and ethnic groups (Bok, 2003; Krop, Rydell, & Vernez, 1999; Miller, 1999; Ruppert, 2003; Swail, 2003). The achievement gap is the disparity in school performance tied to race and ethnicity that is reflected in grades, test scores, course selection, and college completion. The achievement gap occurs in cities, suburbs, and rural school districts. The gaps were so pronounced that in 1996 several national tests found African-American and Hispanic 12th graders scoring at roughly the same levels in reading and math as White 8th graders (Johnston & Viadero, 2000).

A report by the U. S. Department of Labor's Bureau of Labor Statistics, which tracked thousands of Americans starting in the 1980's, has served as the basis for much research on the achievement gap (Haskins & Rouse, 2005; Herrnstein & Murray, 1994; Jencks & Phillips, 1998). The research has demonstrated that African-American, Latino, and Native-American students continue to lag behind their White and Asian-American counterparts (Banks & Banks, 2005; Bauman, Bustillos, Benisom, Brown, II, & Bartee, 2005; Bensimon, Hao & Bustillos, 2003; Burkman & Lee, 2002; Carneiro & Heckman, 2003; Carneval & Desrochers, 2003; Haskins & Rouse, 2005; Herrnstein & Murray,1994;

Jencks & Phillips, 1998; Kelly, 2005; Miller, 1999; NAACP Legal Defense and Education Fund, Inc., 2005; Torres, 2004; Zill, Resnick, Sorongon, Kim, O'Donnell, McKey, Samant, O'Brien, D'Elio, Vaden-Kiernan, & Tarullo, 2003). According to Kober (2001), on the 1999 reading trends test of the National Assessment of Educational Progress (NAEP), the average score of African-American students at age 17 was roughly the same as that of White students at age 13. In science the average score of African-American and Hispanic students at age 13 was lower than the average score of White students at age 9. On the 1999 NAEP's, mathematics trend test, the average score for African-American 13-year-olds was more than 30 points below that of White 13-year-olds, roughly the equivalent of three grade levels behind. In science the average score for Hispanic 9-year-olds was the equivalent of more than three grade levels behind that of White 9-year-olds (Kober).

In a study of the SAT, a college entrance exam with the 200 through 800 scale range in 2000, Kober (2001) noted that the gap between African-American and White average SAT scores was 123 points in math and 95 points in verbal. The Hispanic-White gap was 89 points in math and 70 points in verbal. An assessment of young children also revealed a sizable achievement gap even before children start school (Jencks & Phillips, 1998).

In the *Black-White Test Score Gap*, Jencks and Phillips (1998) posit that the achievement gap between African-American students and White students is apparent prior to entering kindergarten and continues on through secondary as well as postsecondary education. Most of the results of Jencks' and Phillips' assumptions are

based on vocabulary scores of Black and White three- and four-year-olds in the data from the Children of the National Longitudinal Survey of Youth (CNLSY) (Jencks & Phillips). The CNLSY encompassed all children born to 6,283 women in the National Longitudinal Survey of Youth (NLSY). The NLSY was a longitudinal study of people who were between the ages of fourteen and twenty-two in 1979 when the survey began. The NLSY focused on 1,626 African-American and European-American five and six-year olds who were administered the Peabody Picture Vocabulary Test-Revised (PPVT-R), an assessment that measures verbal comprehension and vocabulary. The CLNSY mothers also were administered the AFQT, or Armed Forces Qualification Test, which combined both academic and vocational skills that measured mathematics skills, reading comprehension and vocabulary. African-American mothers in the CNLSY sample scored about 14 points lower than white mothers on the AFQT. A mother's AFQT score was considered a product of her environment as well as her genes (Jencks & Phillips, 1998).

An increase in research has schools, school districts, and institutions of higher education focusing on psychosocial factors in closing the achievement gap (Howse, Lange, Farran, & Boyles, 2003; Linnenbrink & Pintrich, 2002; Schwatz, 2001). The clear implication that emerges from this conclusion is that researchers and school practitioners should look to students' self-beliefs about their academic capabilities because self-belief is an important component of motivation, self-regulation, and academic achievement (Pajares, 1997). Self-efficacy is a relatively new construct in academic research (Multon, Brown, & Lent, 1991; Schunk, 1991; Schunk 1994). Self-efficacy is how an individual

judges his or her personal capabilities to initiate and successfully perform specified tasks at designated levels, expends greater effort, and perseveres in the face of adversity (Bandura, 1977; Bandura 1986). Although self-efficacy is examined with much greater depth in therapeutic contexts, recent studies show that self-efficacy holds significant power for predicting and explaining academic performance in various domains (Bandura, & Martinez-Pons, 1992; Lent, Brown, & Larkin, 1986; Marsh, Walker, & Debus, 1991; Schunk, 1989; Schunk, 1994; Zimmerman, 1995). According to Pajares (1997), continued research on self-efficacy should provide a powerful contribution to educational practice, policy, and theory.

Purpose of the Study

This study sought to determine the effect of self-efficacy on academic achievement of three ethnic groups, i.e. African-American, White, and Hispanic students, at a four-year college as demonstrated by their grade point average (GPA). Self-efficacy has been acknowledged as an important component of academic motivation and has been insufficiently examined in studies of minority students (Graham, 1994; Britner & Pajares, 2001).

An integrative approach that includes academic and non-academic factors that influence college retention and performance also recognizes differences among student populations (Lotkowski, Robbins & Noeth, 2004). The lack of such integration limits a fuller understanding of academic achievement that can be derived as related to successful academic performance (Robbins, Le, Davis, Lauver, Langley, & Carlstrom, 2004). One example of such a limitation is the long standing tradition within the educational

literature of only referring to predictors of academic achievement that are reflected in standardized aptitude tests, and the GPA to measure academic performance. On the other hand, within the non-academic arena a broad range of constructs is viewed as relating to the acquisition of knowledge, including self-efficacy beliefs (Eccles & Wigfield, 2002). The goal of self-efficacy is to understand and predict individual and group behavior and to identify methods in which behavior can be modified or changed (Bandura, 1986).

Self-efficacy refers to beliefs about one's capabilities to learn or perform behaviors at designated levels (Bandura, 1986, 1997). Consistent relationships have been found between self-efficacy and performance, including academic motivation (Pintrich & Schunk, 2003), learning and achievement (Pajares, 1996; Pintrich & Schunk, 2003; Schunk, 1995; Wood & Lock, 1987). Interest in motivation theories within psychology has occurred in the past 20 years (Robbins, et al., 2004). The resurgence is a reflection of the important advance within the theories of self-regulation and expectancy value models of motivation. However, there has been little integration or research synthesis of the educational and psychological literature when looking at college outcomes (Robbins).

The level of effort determines if individuals will persist in the attainment of their education. Those individuals who lack education soon discover that they are qualified for a limited number of jobs and, as a result, find themselves living in poverty. The lack of an education creates a variety of economic and social problems (Hagy & Staniec, 2001; Lowell & Suro, 2002; Vernez & Abrahamse, 1996). Therefore, academic success and degree completion will continue to be a critical factor in determining upward economic mobility (Lowell & Suro, 2002). As a result, institutions of higher education must

continue to seek every measure to close or eliminate the large educational achievement gaps among the nation's racial and ethnic groups because postsecondary education is the major route to achieving social mobility (U. S. Department of Education, 2006). The achievement of social mobility, as a benefit of postsecondary education, ensures students of gainful employment opportunities as well as the ability to provide for the health and education of their children (McClenney, 2004).

Theoretical Framework

The impetus for this research was to support the current body of knowledge regarding student completion of postsecondary degrees and increase the number of educated individuals in the workforce. This study was conducted within the theoretical framework of self-efficacy as it relates to student academic performance. The self-efficacy theory was developed by Albert Bandura (1977). Self-efficacy is an individual's beliefs about his or her capabilities to activate the motivation, cognitive resources, and courses of action needed to exercise control over environmental demands (Bandura, 1977, 1997). Perceived self-efficacy is beliefs about whether one can produce certain actions required to produce given attainments (Bandura).

Utilizing the theory of self-efficacy for this study, the independent variable, i.e., academic self-efficacy, would more than likely influence or explain the dependent variable, grade point average, because this theoretical framework approaches the explanation of human behavior in terms of self-efficacy serving as a predictor of academic performance as measured by grade point average. (Schunk & Miller, 2002). The study was conducted utilizing the causal-comparative research methodology to

determine the effect of self-efficacy on the grade point average of African-American, White, and Hispanic college students.

Self-efficacy is grounded in a larger theoretical framework known as the social cognitive theory which postulates that human achievement depends on interactions between an individual's behaviors, personal factors (e.g., thoughts, and beliefs), and environmental conditions (Bandura, 1986; Bandura, 1997; Harrison, Rainer, Hochwarter, & Thompson, 1997). In the social cognitive theory, individual learners obtain information to appraise their self-efficacy from the actual performance of tasks, their vicarious experiences, the persuasions they receive from others, and their physiological reactions. Self-efficacy beliefs influence not only the performance of tasks, but also task choice, effort, persistence, resilience, and achievement (Bandura, 1997; Schunk, 1995). Compared to students who doubt their learning capabilities, those who feel efficacious in learning or performing a task participate more readily, work harder, persist longer when they encounter difficulties, and achieve at a higher level of success. Students feel self-efficacious when they are able to picture themselves succeeding in challenging situations, which in turn determines their level of effort toward the task (Martinez, 1995; Paris & Byrnes, 1989; Salomon, 1983, 1984).

The theory of self-efficacy was an unintended outgrowth of another line of investigation involved in the pursuit of an alternative theory premised on the view that human psychosocial functioning can be altered by empowering people with the coping competencies needed to gain mastery over their problems (Bandura, 1989). To this end, a powerful mastery modeling treatment had evolved that eliminated long-standing snake

phobia in all participants within a matter of a few hours (Bandura, Blanchard, & Ritter, 1969).

It was determined that the psychosocial treatment of allowing individuals to master their fear of snakes by engaging in activities that required being in the proximity of the snake not only eradicated phobic behavior, but also eliminated anxiety arousal, stress reactions, aversive ruminative thinking, and recurrent nightmares (Bandura, 1989). This type of research was extended to test the notion that human resilience toward the negative effects of phobic stressors can be enhanced through structured, self-directed, mastery experiences after coping capabilities have been fully restored (Bandura).

Having rapidly mastered the phobic nemesis that had impaired their lives for years, the participants reported such a heightened sense of efficacy that they could surmount other problems. They were acting on their new sense of efficacy and experiencing self-directed successes. The mastery modeling treatment was instilling and strengthening people's sense of personal efficacy (Bandura, 1989).

In addition to behavioral and environmental affects demonstrated in the treatment of snake phobia, there is much evidence documenting the significant relationship between self-efficacy beliefs and achievement in academic settings (Bandura, 1997; Multon, Brown, & Lent, 1991; Schunk, 1981; Schunk & Miller, 2002), athletics (Kitsantas & Zimmerman, 2002), health promoting behavior, and coping skills (Pajares & Urdan, 2006). Today students exercise substantial control over their own learning (Bandura & Zimmerman, 1994). They are agents of their own learning, not just recipients of information. The stronger the students' perceived efficacy to manage their own learning,

the higher their aspirations and accomplishments (Bandura & Zimmerman, 1994; Bandura, Martinez-Pons & Zimmerman, 1992).

Significance of the Study

Access to higher education in the United States is relatively open to all individuals. In an effort to ensure individual access to higher education, this distinctive system of higher education provides government-sponsored loans, and grant programs (Altbach, 2005). Yet, there continues to remain some racial and ethnic minorities that are underrepresented in the college-student population (Altbach; Aguirre & Martinez, 1993).

In 2001 the college dropout rate for African-American students was 11 percent and 27 percent for Hispanic students (Hawkins, Lautz, McDonough & Tierney, 2005). African-American and Hispanic students dropping out of high school is higher than the national average (Chapman, DeBell, Kienzl & Laird, 2007) (Table 1). Annual changes in the experiences of students in the U. S. school system are measured to yield the event dropout rate. The event dropout rate estimates the percentage of both private and public high school students who left high school between the beginning of one school year and the beginning of the next school year without earning a high school diploma or GED equivalent (Chapman, DeBell, Kienzl & Laird). The event dropout rates for Blacks and Hispanics were 7.3 percent and 5.0 percent, respectively, compared with rates of 2.8 percent for Whites and 1.6 percent for Asians/Pacific Islanders. Students who indicated more than one race had an event dropout rate of 4.9 percent. This was not measurably different from the rates for the other racial/ethnic groups (Chapman, DeBell, Kienzl, & Laird). As for high school graduation rates, there are significant and persistent gaps in

Table 1.

High School Drop Out Rate, by Race/Ethnicity

	Race/Ethnicity, 18 to 24 year-olds			
	All 18 to 24 year-olds	White, non-Hispanic	Black, non-Hispanic	Hispanic origin
1993	13.1	9.0	16.3	32.8
1994	13.3	8.8	15.4	34.7
1995	13.9	9.8	14.2	34.7
1996	12.8	8.0	15.3	34.5
1997	13.0	8.6	16.2	30.4
1998	13.9	9.0	16.6	34.4
1999	13.1	8.2	15.2	33.9
2000	12.4	7.6	15.0	32.3
2001	13.0	8.3	12.9	31.7
2002	12.3	7.5	13.4	30.1

Source: Bureau of the Census, Current Population Survey (CPS),October 1993 to October 2002 (Table A-5, Internet release date January, 2004); National Center for Education Statistics (NCES), Digest of Education Statistics 2003 (Table 108, available online at http://nces.ed.gov/edstats/)

postsecondary enrollment among racial/ethnic groups. Among high school graduates nationally, African-American and Hispanic students are less likely than White students to enroll in postsecondary education (Hawkins & Lautz, 2005). These groups are also heavily underrepresented among those who earn college degrees (Advisory Committee on Student Financial Assistance, 2001; Banks & Banks, 2005; Bensimon, Hao & Bustillos, 2003; Kelly, 2005; Miller, 1999; NAACP Legal Defense and Social Science Research Council Project, 2005). In the 1960s, efforts to increase a diverse student body, coupled with the growth of a number of community colleges with their open access admission policies (Bauman, Bustillos, Bensimon, Brown & Bartee, 2005) which embodies the commitment to broad and equal access to educational opportunities (Phelan, 2000), increased the number of African-Americans, Latino/as, Native-

Americans, and Asian-Americans going to college (Bauman, et al). The open access policy allows community colleges to focus on student outcomes rather than on SAT scores or entrance qualifications (McPhail, 2003). Yet the gaps in college participation and completion between African-Americans and Whites and between Whites and Latino/as grew larger (Bauman, et al) (Table 2).

The achievement gap has also been ascribed to genetics (Herrnstein, Murray, 1994), culture (Foley, 2005; Foster, 2005; Ogbu, 1978), poverty, socio-economic status (Duncan & Magnuson, 2005; Zill, et al., 2003), racial segregation, inadequate funding of schools, and family background (Jencks, Phillips, 1998). Clearly, the achievement gap is a serious issue and, as such, should not lead to the conclusion that the cause or causes are too far-reaching or illusive of remedy (Kober, 2001).

According to Harvey (2003), bachelor degree attainment rates among postsecondary students enrolled in 1989-90 after five years was 41.8 percent for African-American, 52.1 percent for White, and 44 percent for Hispanic students. Likewise, the U. S. Department (2002) tracked a cohort of bachelor degree seeking students beginning at a four-year institution in 1995-96. The completion rates for African-American, White, and Hispanic students were 40.9 percent, 59 percent, and 41.4 percent respectively.
Given the disparity in completion rates of these ethnic groups, Lotkowski, Robbins, and Noeth (2004) recommend that in addition to academic factors, such as academic achievement tests, aptitude tests, and grade point average (GPA), that non-academic factors, such as self-confidence and achievement motivation, be considered in

Table 2.

Percent distribution of 1995-96 beginning postsecondary students according to the highest degree attained and 6-year persistence status by 2001

			Still enrolled		
	Bachelor's degree	Associate's degrees and certificates	At a 4-year institution	At a less-than-4 year institution	Not enrolled, no credential
All beginning students	28.8	22.0	8.8	5.6	34.8
Race/Ethnicity					
White, non-Hispanic	31.6	21.4	8.6	5.4	33.0
Male	31.0	20.1	11.4	4.7	32.8
Female	32.4	22.7	6.1	6.0	32.9
Black, non-Hispanic	17.3	22.9	8.4	6.1	45.3
Male	13.8	25.5	9.8	4.7	46.2
Female	19.9	21.3	7.4	7.3	44.2
Hispanic	18.5	26.2	10.1	6.3	38.9
Male	17.8	25.0	8.4	7.1	41.7
Female	19.4	27.0	11.4	5.6	36.6
Asian/Pacific Islander	39.7	17.9	9.4	7.0	26.0
Male	38.7	17.7	12.2	9.9	21.5
Female	42.3	20.5	9.4	3.3	41.5
American Indian/Alaska Native*	34.9	12.1	8.0	3.4	41.5

*sample size too small to break out gender

Sources: Berkner, Lutz, Shirley He, and Emily Forrest Cataldi, 2002 Descriptive Summary of 1995-96 Beginning Postsecondary Students: Six Years Later. NCES 2003-151. Washington, DC.: GPO; National Center for Education Statistics, Beginning Postsecondary Students: 96/01, Data Analysis System.

college retention and performance in an effort to bridge the achievement gap. Eccles and Wigfield (2002) concur with Lotkowski, Robbins, & Noeth and also included within the non-academic arena a broad range of constructs relating to the acquisition of knowledge that includes self-efficacy beliefs. The significance of this study is rooted in the

educational achievement gap among racial groups (Kober, 2001) in the completion of postsecondary education.

Research Questions

According to Fraenkel and Wallen (2006), the research question must be of interest to the researcher, the topic must also be researchable, and the questions for the study must be tailored to specifically answer the underlying theme of the research. The research questions for this study were the following: What is the effect of academic self-efficacy on the grade point average of African-American students at a four-year college?; What is the effect of academic self-efficacy on the grade point average of White students at a four-year college?; and What is the effect of academic self-efficacy on the grade point average of Hispanic students at a four-year college? The dependent variable in this research was the grade point average of the participants, while the independent variable was academic self-efficacy as measured by the College Academic Self-Efficacy Scale (CASES) developed by Owen and Froman (1988).

Hypothesis

This study hypothesized that there was a relationship between self-efficacy and grade point average. Thus, the following null hypotheses were tested:

Ho_1: There is no difference in grade point average among African-American students based on academic self-efficacy.

Ho_2: There is no difference in grade point average among White students based on academic self-efficacy.

Ho_3: There is no difference in grade point average among Hispanic students based on academic self-efficacy.

The following alternate hypotheses for this study were the following:

Ha_1: There is a difference in grade point average among African-American students based on academic self-efficacy.

Ha_2: There is a difference in grade point average among White students based on academic self-efficacy.

Ha_3: There is a difference in grade point average among Hispanic students based on academic self-efficacy.

Definition of Terms

Academic Self-Efficacy -- in this study academic self-efficacy is a score on the College Academic Self-Efficacy Scale (CASES) (Appendix A). Further academic self-efficacy is defined as an individual's level of belief in his/her capability to successfully complete academic tasks by mobilizing the motivation, cognitive resources, and courses of action needed to exercise control over task demands successfully (Bandura, 1990; Zimmerman, 1995).

Ethnicity -- is ethnic traits, background, allegiance, or association (Nichols, 2000). In this study ethnicity is what the individual self-declares himself/herself to be, i.e., African-American, White, or Hispanic.

Grade Point Average -- is a measure of scholastic attainment computed by dividing the total number of grade points received by the total number of credits or hours of course work taken. The grade point average is also called quality point average

(Nichols, 2001) which is a numerical calculation or report of grade averages based on a four-point-system with grades of an A equated to 4.00 points, grades of F equated to 0.0 points, and other grades scaled accordingly. In this study the participants' cumulative grade point average will serve as the dependent variable.

Assumptions

This study included several assumptions. One assumption was that students would honestly answer the College Academic Self-Efficacy Scale. It was also assumed that the CASES instrument is valid and reliable. An additional assumption was that self-efficacy is related to academic performance as measured by students' grade point averages.

Limitations of the Study

This study included three limitations. These limitations were related to the use of student perceptions as a tool to study self-efficacy. The first such limitation was that the sample would include individuals who had experienced academic deficiency throughout their education, thus resulting in a poor outlook when utilizing resources to improve academics. The second limitation was that the sample was not random and, therefore, the results may not be generalizable to other institutions. The third limitation was that college students at the four-year institutions might have different beliefs and experiences that would influence the results.

Organization of the Study

Chapter One explained the purpose of the study and rationale for this research. This research was grounded in the self-efficacy theory of Bandura (1977) as it relates to addressing the educational achievement gap among racial groups (Kober, 2001) and their

completion of postsecondary education. Chapter Two provides background information and a review of the literature. Chapter Three includes a description of the purpose of the research, sampling and sampling procedures, design of study, data collection and analysis, and ethical consideration. Chapter Four outlines the results of the study and Chapter Five a discussion of the findings.

Chapter Summary

This chapter served as an orientation to the research study by briefly reviewing the challenges facing institutions of higher education in the 21st Century and the notion that an academic achievement gap exists between African-American, White, and Hispanic college students and purporting possible alternative for eliminating. To that end this study sought to measure academic self-efficacy and its effect on academic achievement of three ethnic groups, i.e., African-American, White, and Hispanic students, at a four-year college. The final portion of this chapter included the purpose of the study, the research questions, null and alternate hypotheses, definitions, assumptions, and limitations of the study and, concludes with how the study was organized.

CHAPTER II

LITERATURE REVIEW

Introduction

This chapter reviews literature pertinent to self-efficacy beginning with the definition and background review. Emphasis is placed on the works of Albert Bandura, the pioneer researcher in the area of self-efficacy, and the sources of self-efficacy development. Supporting research studies were incorporated that related self-efficacy to ethnicity and academic performance, as measured by grade point average (GPA) of college students.

Self-Efficacy Defined

Self-efficacy is the following:

> People's judgments of their capabilities to organize and execute a course of action required to attain designated types of performances. It is not concerned with the strategies one has but with judgments of what one can do with whatever strategies one possesses. (Bandura, 1986, p. 391)

Individuals feel self-efficacious when they are able to picture themselves succeeding in challenging situations, which in turn determines their level of effort toward the task (Paris & Byrnes, 1989; Salomon, 1983; Salomon, 1984). Bandura (1977, 1986) asserted that self-percepts of efficacy highly influence whether individuals believe that they have the coping strategies to successfully deal with challenging situations. Self-efficacy refers to subjective judgments of one's own capabilities to organize and execute a course of action to attain desired goals (Bandura, 1977, Bandura, 1997). Thus, self-

efficacy is a belief that a person possesses regarding what he or she can do rather than a personal judgment about his or her physical or personality attributes.

Background of Self-Efficacy

The publication of the article *Self-efficacy: Toward a Unifying Theory of Behavioral Change* prompted widespread application of self-efficacy theory to diverse areas of biological, psychological and social functioning (Bandura, 1977). In the article Bandura presented two major divergent trends in the field of behavioral change. One trend focused on the method by which human behavior is acquired and regulated in terms of cognitive processes, i.e., the methods of acquiring knowledge by the use of reasoning, intuition, and perception (Bandura). The other trend focused on performance-based procedures that have proven to be most powerful in affecting psychological changes through successful performance (Bandura, 1977).

Bandura (1989) stated:

> The research on perceived self-efficacy was an unintended outgrowth of another line of investigation. Conventional modes of treatment have relied heavily on the interview as the principal vehicle of personality change. I had been pursuing an alternative theory premised on the view that human psychosocial functioning can be altered more fundamentally by empowering people with the coping competencies needed to gain mastery over their problems. (p.14)

Bandura (1989) demonstrated the notion of empowering people with coping competencies during a mastery modeling treatment to eliminate long-standing and severe snake phobic dysfunctions in adults. In an effort to determine how to overcome the

phobia, the adult treatment was administered for the same length of time by either participant modeling, modeling alone, or no treatment. In participant modeling, which operates through direct mastery experiences, participants were assisted by whatever inducting aids were needed to engage in progressively more threatening interactions with a boa constrictor. After completing all the tasks of holding the snake, placing open hands in front of its head as it moved about the room, holding the snake in front of their faces, and allowing it to crawl freely in their laps, the participants engaged in a brief period of self-directed mastery with the snake. In the experiment, the modeling aid was used only briefly if the participant needed help to initiate performance (Bandura).

Participants receiving the modeling treatment alone merely observed vicariously the therapist perform the same activities for an equivalent period. These participants did not engage in any behavior themselves. On the other hand, participants assigned to the control group (i.e., those receiving no intervening treatment and who failed to achieve mastery of their phobias, received the participant modeling treatment) (Bandura, 1989).

It was in the context of this research that participants were exhibiting remarkable changes in other domains of functioning unrelated to the treated phobic dysfunction. Having rapidly mastered the phobic nemesis within a few hours that had impaired their lives for years, participants reported a heightened sense of efficacy that they could surmount other problems. Participants were acting on their new self-percepts of efficacy and experiencing self-directed successes. The mastery modeling treatment was instilling and strengthening people's sense of personal efficacy (Bandura, 1989). Bandura (1989) redirected the research program to gain a better understanding of the sources of self-

efficacy beliefs and the process through which they affect human thought, motivation, and action.

Applications of the self-efficacy theory have been utilized in a variety of domains. Self-efficacy is included in domains such as academic performance (Elias & Loomis, 2002; Pintrich & DeGroot, 1990; Schunk, 1991; Solberg, O'Brien, Villareal, Kennel, & Davis, 1993); success, persistence, and range of career options (Chemers, Hu, & Garcia, 2001; Holland, 1997; Lent, Brown, & Hackeett, 1994; Lent, Brown, & Larkin, 1984, 1986; Solberg, O'Brien, Villareal, Kennel, & Davis, 1993; Wood & Locke, 1987); vocational behavior (Betz & Hackett, 1981; Holland, 1997; Lent, Brown, & Hackett, 1994; Lent & Hackett, 1987); health promoting behaviors (Bandura, 1991; Baranowski, Baranowski, Cullen, Marsh, Islam, Zakerei, et al., 2003; Hanson, Downing, Coyle & Pederson, 2004; Holschneieder & Alexander, 2003; Pajares & Urdan, 2004); clinical functioning (Bandura, 1977; Bandura, 1997; Benight, Antoni, Kilbourn, Ironson, Kumar, Schneiderman-Redwinge, Baum, & Schneidman, 1996; Wallace & Alden, 1995); and athletics (Bandura, 1977; Martin & Gill, 1995; Treasure, Munson, & Lox, 1996; Weiss, Wiese, & Klint, 1989; Vealey, 2001). The self-efficacy theory is widely recognized, according to Bandura (1989), because the theory provides guidelines for how to measure the level of strength and generality of the self-percepts of efficacy or perceived efficacy.

Perceived self-efficacy, as defined by Bandura (1977, 1986), is individuals' judgment of their capabilities to organize and execute courses of action required to attain designated types of performances. Perceived self-efficacy is concerned not with the skills one has but with the judgments of what an individual can do with whatever skills he

or she possesses. Bandura contended that an individual's belief in his or her ability to accomplish various tasks is highly influential on whether he or she will actually accomplish the task or succeed in a given area.

The concept of self-efficacy has it roots in the social cognitive theory (formerly the social learning theory) of Bandura (1997) which analyzes human motivation, thought, and action from a social cognitive perspective. According to the social cognitive view, people are not driven or motivated by inner forces, nor are they automatically shaped and controlled by external stimuli in the environment. Instead the social cognitive view is that human functioning is explained in terms of a model of triadic reciprocality in which behavior, cognitive and other personal factors, and environmental events all operate as interacting determinants of each other (see Figure 1). This concept forms the foundation of what Bandura (1986) has termed reciprocal determinism (i.e., the view that the ability to acquire knowledge or cognition, behavior, and environmental influences create interactions that result in triadic reciprocality). This reciprocal causation or interaction provides individuals with opportunities to exercise some control over their destinies, as well as set limits of self-direction (Bandura,).

The choices or direction that an individual's life takes is shaped by the reciprocal interplay between personal factors and diverse influences (Bandura, 1986; Pajares & Urban, 2006). Thus, the environment in which people live is a series of transactions of events in which individuals play a role in shaping the course of their personal development (Baltes, 1983; Bandura, 1997; Hultsch & Plemons, 1979).

In this process individuals' judgments of their capabilities to deal effectively with different realities is more central. It is partly on the basis of the self-percepts of efficacy that individuals choose what to do, how much effort to invest in activities, how long to

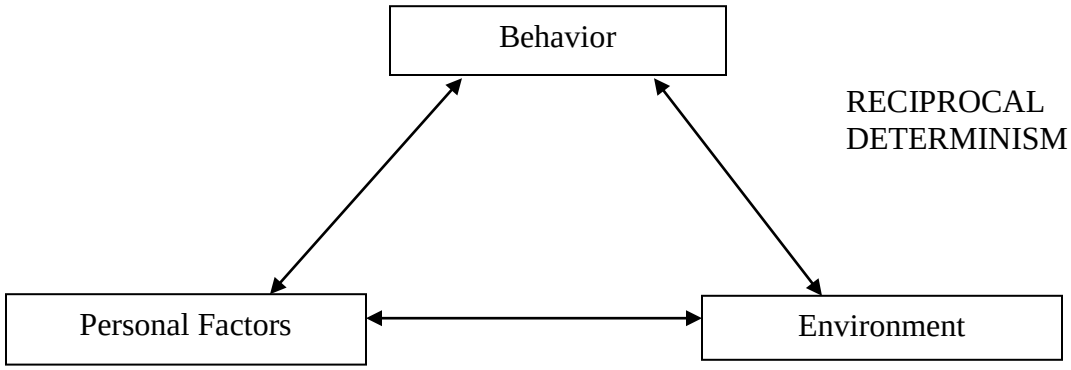

Figure 2.1: Model of the Relationships between the Three Classes of Determinants (Bandura, 1997)

persevere in the face of disappointing results, and whether tasks are approached anxiously or self-assuredly (Bandura, 1982).

Personal efficacy belief serves as the foundation of human motivation, well-being, and accomplishments. Beliefs in one's efficacy are an answer to an individual's personal response in self-development, successful adaptation, and change. Personal efficacy operates through its impact on cognitive, motivational, affective, and decisional processes. Efficacy beliefs affect whether individuals think optimistically or pessimistically or in self-enhancing or self-debilitating ways (Bandura, 1986). These beliefs affect an individuals' goals and aspirations and how well they motivate themselves. It also affects their perseverance and expectations of whether their efforts will produce favorable outcomes or adverse ones. In addition, efficacy beliefs determine

how environmental opportunities and challenges are perceived by the individual. Individuals who have low efficacy are easily convinced of the uselessness of their effort in the face of difficulties. They give up trying. Those with high efficacy view challenges as difficulties to be overcome by self-development and perseverant effort. They continue their course in the face of difficulties and remain resilient to adversity (Bandura, 1986; Pajares & Urban, 2006).

Sources of Self-Efficacy

People make judgments about their capabilities, accurate or not. These judgments are based on four main sources of influence. These four main sources are mastery experiences in overcoming obstacles through trial and error and determination, vicarious experiences by observing others, social or verbal persuasion, and physiological and emotional states (Bandura, 1986; Martinez, 1995; Schunk, 1996). Overcoming obstacles through mastery experiences, according to Bandura (1994), is the most effective way of creating a strong sense of efficacy. These mastery experiences serve as indicators of one's capability. The performance accomplishments provide an individual with the most influence of efficacy information because the individual has mastered or has attained success. Success increases efficacy, while repeated failures lowers self-efficacy. This is especially true if failure occurs early in the course of an event. A person's ability to persist through difficulties increases his or her sense of efficacy, as well as his or her sense of what it takes to succeed (Bandura, Adams, & Beyer, 1977). However, after a strong sense of self-efficacy is developed through repeated successful experiences, occasional failures are unlikely to have much effect on judgments of one's capabilities.

Failure, then, is more likely to be ascribed to faulty strategies rather than to one's inability. In this situation, failure can be seen to raise confidence that better strategies will yield success in the future (Anderson & Jennings, 1980; Bandura, 1986).

In addition to mastery experiences, individuals also rely on vicarious experiences. Vicarious experiences are those experiences that are mediated through modeled attainments that serve as an effective tool for promoting self-efficacy (Bandura, 1997). Vicarious experiences of observing others who are similar to one's self succeed through sustained efforts and also raise the observers' belief that he or she also possesses the ability to master comparable situations and succeed.

Another source self-efficacy development is verbal persuasion. Verbal or social persuasion occurs when individuals are encouraged verbally by others that they have the capability to master given activities. Verbal persuasion, however, is widely used to try to talk people into believing they possess the capabilities that will enable them to achieve what they seek. This type of persuasion alone is limited in its power to create enduring increases in self-efficacy, but it can contribute to successful performance if the heightened appraisal is within realistic bounds (Bandura, 1986; Bouffard-Bouchard, 1989).

Capabilities are also judged from information attained from the physiological and emotional states, especially in the areas of physical accomplishments, health functioning, and coping with stressors (Bandura, 1997). In this state when an individual perceives himself or herself as vulnerable as a result of some tension, agitation, or fear, performance is usually debilitated. However, individuals are more inclined to expect

success when they are not beset with such emotions (Bandura, 1986; Jerusalem & Mittag, 1995). Therefore, eliminating emotional reactions to subjective threats through mastery experiences heightens beliefs in coping efficacy with corresponding improvements in performance (Bandura, 1988). As a result, these individuals are more likely to mobilize greater effort and sustain it than if they harbor self-doubts and dwell on personal deficiencies when problems arise (Bandura, 1997).

An individual's reaction to stress in the physiological or emotional state must be reduced by altering negative emotional responses, as well as the interpretations acquainted with the individual's physical state as the result of stress (Bandura, 1994; Kavanagh & Bower, 1985). It is not the sheer intensity of emotional and physical reactions that are important, but rather how they are perceived and interpreted. Individuals who possess a high sense of efficacy are more likely to view their state of emotional arousal or irritation as an energizing facilitation of performance, unlike those who are inundated by self-doubts and who regard their arousal as debilitating (Bandura).

Although everyday life is beset with adversities, setbacks, frustrations, and inequities, possessing a robust sense of efficacy influences the effort an individual will expend to succeed (Bandura, 1994). Any influence that may be exerted on self-efficacy from these four sources of efficacy information will yield significant information that allows an individual to appraise his or her cognitive ability (Bandura, 1986; Schunk, 1996). An individual's self-efficacy is assessed and strengthened by weighing and combining such factors as perceptions of ability, difficulty of the task, effort expended, external assistance received, number and pattern of successes and failures, perceived

similarity to models, and persuader credibility (Schunk, 1989). These factors contribute to Bandura's (1997) sources of self-efficacy.

The sources of self-efficacy beliefs were researched in a study conducted by Hutchison (2006) on the factors influencing the self-efficacy beliefs of first-year engineering students at Purdue University. A survey incorporating qualitative measures was administered to 1,387 first-year engineering students, 81.9 percent male, and 18.9 percent female, enrolled in ENGR 106-Engineering Problem-Solving and Computer Tools. The survey was designed to prompt participants to identify factors that affect their confidence in success and to rank those factors based on the degree to which their self-efficacy beliefs were influenced.

The categories, as outlined by Hutchison (2006) in the survey were understanding/learning, drive and motivation, teaming, computing abilities, help, working assignments, problem solving, enjoyment, interest, satisfaction, and grades. The study focused on the sources of self-efficacy, master experiences, vicarious experiences, verbal persuasion, and physiological or emotional states as they related to gender because of the declining number of females entering the engineering field. The results for each factor are as follows: understanding/learning, 55 percent men and 72 percent women; drive and motivation were expressed by a large number of participants; teaming was described as positive efficacy influenced by many male and female students based on the discovery that they could work well in a team; computing ability reflected few men who indicated computing as negatively affecting their self-efficacy beliefs, in contrast to the nearly one-third of women who did; help was significantly indicated by more women (38

percent) than men (19 percent) who discussed getting help influenced their confidence in ENGR 106 success; working assignments were cited by students indicating their ability to complete assignments as influencing their efficacy beliefs. Students expressed, “I can usually finish the homework assignments, even though it takes me a long time to understand them” and “I complete all of my assignments on time and to the best of my ability” (Hutchinson, p. 5). Problem-solving abilities seemed to influence nearly equal percentages of men and women; enjoyment, interest, and satisfaction produced similar percentages of men and women who discussed their enjoyment regarding their interest, and satisfaction with ENGR 106 as being influential; and scores on graded course materials including homework assignments, projects, quizzes, and exams, as well as overall course grades and grading policies, affected nearly equal percentages of men and women (Hutchinson).

The study of Hutchison (2006) supported Bandura’s (1986) notion of the sources of self-efficacy beliefs. The mastery experiences yield the majority of the responses. The mastery experience responses that were reflected in the factors influencing self-efficacy beliefs were understanding/learning course material, teaming skills, computing abilities, problem-solving, working assignments, seeking help, and grades. Vicarious experiences were reflected in factors of teaming and seeking help. The influence of verbal persuasion was exhibited by students seeking help from others and the discourse of conversation that occurred during their communication. In addition, the verbal persuasion of others was represented by student grades which are seen as communicating the professor’s judgment of participants’ abilities. The physiological or emotional states of enjoyment, interest, and

satisfaction are the factors associated with students struggling to master engineering problem-solving. This was reflected by one of the participants who stated, "The things holding me back are that I have troubles with some of the problems, and get frustrated; I am worried that if I am having troubles from the start that I won't make it to the end" (Hutchinson, 2006).

Understanding the construct of self-efficacy and its sources is critical to understanding the vital role of the influences exerted by those sources. The sources are mastery experience, vicarious experiences, verbal persuasion, and the physiological or emotional states. In an effort for post secondary institutions to implement strategies to impact closing the achievement gap for minority student which leads to academic success, non-academic factors such as these influences of academic self-efficacy must be a considered (Rodriquez, 1996).

Self-Efficacy and Ethnicity

People who are cast into subordinate roles, or assigned inferior labels that imply limited competence, perform activities at which they are highly skilled less well than when they are not labeled negatively or placed in a subordinate role (Bandura, 1997). Thus, African-American students who are asked to identify their race tend to perform more poorly on standardized college entrance exams than those not asked to give their racial status (Bandura). Once people develop a mind-set about their efficacy in given situations, they act on their established self-beliefs without further reappraising their capabilities (Bandura). A study conducted by Collins (1982) suggested that perceived

efficacy beliefs contributed independently to intellectual performance rather than simply reflecting cognitive skills.

In this study, Collins (1982) selected children who judged themselves to be of high or low efficacy at each of three levels of mathematical ability. They were then given difficult mathematical problems to solve. Within each level of ability, children who had the stronger belief in their efficacy were quicker to discard faulty strategies, solved more problems, chose to rework more of those they failed, and did so more accurately than children of equal ability who doubted their efficacy. Children's causal attributions for their academic success and failures were unrelated to their mathematical performances. These findings were corroborated by Bouffard-Bouchard, Parents, and Larivée (1991) who stated that regardless of whether children were of superior or average cognitive ability, those with a high sense of efficacy were more successful in solving conceptual problems than were children of equal ability but lower perceived efficacy.

When viewing self-efficacy as a construct that predicts academic performance and that leads to successful completion of postsecondary education, the data reveal that self-efficacy is especially important for minority student success given the large achievement gap (Rodriquez, 1996). However, research on self-efficacy, as related to minorities, is scarce (Bandura, 1997; Graham, 1994; Jonson-Reid, Davis, Saunders, Williams, & Williams, 2005). Literature review conducted by Graham (1994) consisted of 140 studies that focused on African-American motivation and determined that only 18 of the studies focused on ability or self-concept with no mention of the term self-efficacy. Of the 18 studies, 7 were published in the 1980s, 8 in the 1970s, and 3 in the 1960s or before. All of

the studies reviewed by Graham were race-comparative in that the confidence and performance of African-American students were compared to those of White students (Graham).

Graham (1994) in a study entitled *Motivation in African Americans*, found evidence that the academic self-beliefs of African-Americans are strong, even in the face of low achievement. Moreover, the academic self-beliefs of African-American students are as strong, and sometimes stronger, than those of their White peers. Similar findings were reported with the Hispanic- American population (Lay & Wakstein, 1985; Britner & Pajares, 200; Stevenson, Chen, & Uttal, 1990). Graham (1994) acknowledged that self-efficacy is an important component of academic motivation but noted that it has been too barely examined in studies of minority students (Britner & Pajares, 2001).

An additional study conducted by Pajares and Kranzler (1995) found that the mathematics self-efficacy of African-American students was lower than that of their White peers, while Pajares and Johnson (1996) found that the writing self-efficacy of Hispanic high school students was lower than that of non-Hispanic White students. Although each study reported minority students as having positive mathematics self–concepts, it is important to know that self-concepts and self-esteem are not synonymous with self-efficacy. Self-concept refers to the self-worth associated with one's self-perception as a student in a particular domain. Self-esteem refers to an individual's sense of value or self-worth, or the extent to which people value, appreciate or like themselves. These constructs differ from self-efficacy beliefs in that self-concept and self-esteem include judgments of self-worth (Pajares & Shunk, 2001). The studies conducted by

Graham (1994) and Collins (1982) address two constructs of the self system, self- belief and self-concept of African-American and Hispanic students compared to White students. Neither of these studies addresses self-efficacy beliefs as it relates to academic performance. Self-efficacy is key to promoting student engagement and learning (Linnenbrink & Pintrich, 2003). Self-concept is typically a less accurate predictor of performance than is self-efficacy (Pajares, 1997).

Consistent relationships have been found between self-efficacy and performance, including academic performance (Kerlinger & Lee, 2000; Lev-Arey, Orvis, & Ingerick, 2001; Pascarella & Terenzini, 2005; Solberg, O'Brien, Villareal, Kennel, & Davis, 1993; Wood & Locke, 1987). This is evident by Zorkina and Nalbone's (2003) proposal that individuals with high self-efficacy tend to pursue more challenging goals than individuals with lower self-efficacy. They are better at seeking new solutions and more persistent in working on difficult tasks, whereas students with low self-efficacy give up more easily (Bandura, 1985).

Self-Efficacy and Academic Performance

Self-efficacy has been foremost in educational research where scholars have reported that regardless of previous achievement or ability, self-efficacious students work harder, persist longer, persevere in the face of adversity, have greater optimism and lower anxiety, and achieve more (Bandura, 1997; Pajares, 1996; Pajares & Urban, 2006; Schunk, 1981; Schunk & Hanson, 1985). Several researchers (Pajares & Miller, 1994; Schunk, 1981; Zimmerman & Bandura, 1994) examined achievement and found that students' self-efficacy beliefs made a powerful and independent contribution to the

prediction of their academic performance. Pajares and Urban (2006) found a 25 percent variance in most academic outcomes related to academic self-efficacy beliefs. According to Pajares and Urban, it is not simply a matter of how capable one is; it is also a matter of how capable one believes one is.

Researchers (Lent, Brown, & Larkin, 1986; Multon, Brown & Lent, 1991; Schunk, 1994) have investigated the relationship of self-efficacy to learning and academic achievement, but research in the area of academic performance is still developing. The literature indicates, however, that there are consistent relationships that have been found between self-efficacy and performance, including academic performance (Kerlinger & Lee, 2000; Lev-Arey, Orvis, & Ingerick, 2001; Pascarella & Terenzini, 2005; Wood & Locke, 1987). This is evident also by Zorkina and Nalbone (2003) who proposed that individuals with high self-efficacy tend to pursue more challenging goals than individuals with lower self-efficacy. Individuals with higher self-efficacy are better at seeking new solutions and are more persistent in working on difficult tasks, whereas students with low self-efficacy tend to give up more easily.

The manner in which individuals behave is greatly influenced by the beliefs that they hold about their abilities and about the outcome of their efforts or performance (Bandura, 1985; Pajares, 1996; Schunk & Meece, 2006). People with low self-efficacy may believe that a situation is worst than it really is, a belief that fosters stress, depression, and a very narrow vision of how best to solve the problem or situation. On the other hand, high self-efficacy helps to create feelings of serenity in approaching difficult tasks and activities. As a result of these influences, self-efficacy beliefs are

strong determinants and predictors of the level of accomplishment that individuals finally achieve (Pajares, 1996; Pajares & Urdan, 2006). This view is consistent with that of theorists who have argued that the deep-seated nature of an individual's beliefs allows those beliefs to serve as a filter through which new experiences are viewed and interpreted (Bandura, 1985; Pajares, 1996). The interpretation will then mediate the behaviors that will follow (Pajares & Urdan, 2006; Schunk & Meece, 2006).

The manner in which individuals interpret the results of their performance informs and alters their environments, as well as their beliefs about themselves, which conversely informs and alters their future performances (Bandura, 1986). As a result, individuals are viewed both as products, as well as producers of their own environments and their social systems. Individuals, according to Bandura, possess the unique human capacity of self-reflection. Through this form of self-reflective thought, people evaluate and alter their own thinking and behavior. These evaluations of oneself include perceptions of self-efficacy. Bandura (1994) contends that an individual's belief in his or her ability to accomplish varying tasks is highly influential on whether he or she actually accomplishes the task or succeeds in any given area.

Self-Efficacy and Grade Point Average (GPA)

Academic self-efficacy remains the best predictor of grade point average (GPA) according to a study conducted by Robbins, Le, Davis, Lauver, Langley, and Carlstron (2004). Robbins et al. conducted a study that examined the relationship between psychosocial and study skills factors and college outcomes by meta-analyzing 109 studies. Nine broad constructs, achievement motivation, academic goals, institutional

commitment, perceived social support, social involvement, general self-concept, academic-related skills, and contextual influences were identified which included academic self-efficacy. Two college outcomes were targeted in the study: Performance as measured by the cumulative GPA and retention. The results of the meta-analysis revealed that the best predictors for GPA were academic self-efficacy (Pascarella & Terenzini, 2005; Nettles, Thoeny, & Gosman, 1986) and achievement motivation (Robbins, et. al.).

Relative predictive validity viewed across academic performance is diminished by the lack of integration of educational and psychological literature (Robbins et al., 2004). One example of such a limitation is the long standing tradition within the educational literature of only referring to predictors of academic achievement that is reflected in standardized aptitude tests, and the GPA to measure academic performance. However, within the psychological literature a broad range of constructs are viewed as cognitive measures including self-efficacy beliefs (Eccles & Wigfield, 2002).

Self-efficacy was most predictive of academic accomplishments when post-treatment efficacy beliefs were used as predictors. Thus, assessing students' efficacy prior to instruction, although important, will not be as predictive of academic accomplishments as measuring these beliefs following instruction or modeling experiences (Pajares & Urban, 2006).

Chapter Summary

This chapter served as a review of the literature for the theoretical foundation of this study, i.e. self-efficacy. The literature review provided the definition, and sources of

self-efficacy. The review also incorporated self-efficacy and ethnicity, as well as self-efficacy and academic performance. The chapter concluded with an emphasis on self-efficacy and grade point average (GPA).

CHAPTER III

RESEARCH METHODOLOGY

Introduction

The primary focus of this chapter is to describe the purpose of the research methodology, the research question with the null and alternate hypotheses, population and sampling procedures, instrumentation, design of the study, procedures for data-collection methods, and data-analysis procedures. The causal-comparative research methodology (Fraenkal & Wallen, 2006; Kerlinger & Lee, 2000) and the quantitative paradigm (Fraenkal &Wallen; Schwandt, 2001) was utilized to conduct this study.

Purpose of Research

The purpose of this research was to determine the effect of academic self-efficacy on the grade point average of three ethnic groups, i.e., African-American, White, and Hispanic students at a four-year college in Florida. The instrument that was used to measure academic self-efficacy is the College Academic Self-Efficacy Scale (CASES) developed by Owen and Froman (1988). Academic self-efficacy was the independent variable and the students' grade point average (GPA), the dependent variable. A comparison was made among the ethnic groups.

Research Questions

The research problem is usually posed as a question which serves as the focus of the researcher's investigation (Fraenkal & Wallen, 2006). Because the research question is the focus of a research investigation, it is particularly important that the question be clearly stated to indicate what is being investigated (Fraenkal & Wallen). The research

questions for this study were the following: What is the effect of academic self-efficacy on the grade point average of African-American students at a four-year college?; What is the effect of academic self-efficacy on the grade point average of White students at a four-year college?; and What is the effect of academic self-efficacy on the grade point average of Hispanic students at a four-year college?

Sample and Sampling Procedures

The population for this study consisted of students at a four-year college. This study included a purposive, non-random selection of 450 students among the ethnic groups. Sampling refers to taking a portion of a population and considering it as a representation of that population (Kerlinger & Lee, 2000). Purposive sampling was utilized to select the participants for this research. Purposive sampling requires the researcher to determine, based on his or her judgment, the sample believed to provide the data needed for the study (Fraenkal & Wallen, 2006). In this study participants were selected from the College Algebra, MAC 1105, classes. Students in this class traditionally will have acquired a minimum of 24 to 60 plus college-level credit hours toward an associate of arts degree leading to the completion of a bachelor's degree. For the purpose of this study, students self-disclosed ethnicity.

The college selected for this study is one of the Florida's oldest institutions of higher education. Founded in 1927 as a private institution today, it stands as a multi-campus public institution with 10 locations situated throughout the county with services administered throughout the nation and beyond. The new campus site now includes a University Partnership Center which opened in partnership with half a dozen four-year

institutions, thus enabling students through the technology of distance education to earn university degrees without leaving the county.

Instrumentation

Instrumentation involved the instruments or devices for systematically collecting data, such as a test, a questionnaire, or an interview schedule, as well as the procedures used in collecting data in a study (Creswell, 2005; Fraenkal & Wallen, 2006). The instrument used in this study was the College Academic Self-Efficacy Scale (CASES) (Appendix A). The scale was developed by Owen and Froman (1988) using three university faculty members who devised a pool of what they considered to be routine academic behaviors for college students. After being reviewed by seven graduate teaching assistants, the pool was revised and finally pilot tested by 93 undergraduate students majoring in education and psychology. After the pilot test, the instrument was revised once more and now consists of 33 items. Without hierarchical composition each question begins with "How much confidence do you have about performing each behavior listed below?" participants were asked to respond using a 5-point Likert-type scale. The Likert scale ranged from E or "very little," to A or "quite a lot." Owen and Froman (1988) calculated CASES results by computing the mean score (Appendix B). Computing the mean provided an allowance for any question items that may have been omitted by participants. Owen and Froman's method of calculation was utilized in this study.

Reliability for the CASES instrument was established by using test-retest methods, administering the test twice. The scale was administered twice to 88 psychology

students over an eight-week period. The internal consistency reliability was measured using Cronbach's alpha. The two testing sessions yielded alphas of .90 and .92 respectively. At the eight-week stability point, alpha was estimated at .85 for the study (Owens & Froman, 1988).

Validity for the CASES instrument was assessed in several ways. Enjoyment of task and frequency of task, both suggested by self-efficacy theory (Owen & Froman, 1988), were used to establish concurrent validity. In two separate studies, students were asked to rate frequency and enjoyment for the 33 items in the CASES instrument. The studies were arranged as incremental validity research, and grade point averages were placed into the regression equation followed by frequency or enjoyment, depending on which study was analyzed (Owen & Froman).

To establish factorial validity, the study asked a new sample of 122 students to rate the difficulty of performing tasks highlighted in the 33-item CASES instrument. Researchers analyzed responses and determined that items students found relatively easy to accomplish were those in which students most likely had more experience; those items they found most difficult to accomplish were most likely the result of having less experience or success with the task. Owen and Froman (1988) contended that the analysis was in keeping with Bandura's self-efficacy theory as related in Bandura, Barbaranelli, Caprara, & Pastorelli (1996).

Owen and Froman's (1988) College Academic Self-Efficacy Scale was selected for this study because it investigates feelings of academic self-efficacy in the areas of English, mathematics, and reading. Mathematics was the course selected for this study,

College Level Algegra, MAC 1105. Owen and Forman also believed that CASES can give specific diagnostic findings that can influence holistic change to increase overall academic self-efficacy.

Design of the Study

The design of the study expresses both the structure of the research problem and the plan of investigation used to obtain the empirical or observed evidence of the problem (Creswell, 1998; Kerlinger & Lee, 2000). The research design has two basic purposes. These are to provide answers to research questions and to control variance. The design helps the investigator to obtain answers to the questions of research and also to control the experimental, extraneous, and error variances of the research problem under study (Kerlinger & Lee, 2000; Creswell, 2003; Patton, 2002).

The design of the research serves as the skeleton of the study which implies how the study is controlled, as well as how the data was analyzed (Kerlinger & Lee, 2000). The design is embedded within the paradigms, or worldviews, of differences in the basic set of beliefs or assumptions that guide the way researchers approach their investigation (Fraenkel & Wallen, 2006; Slife & Williams, 1995).

To ensure the best possible data-gathering for the research question, the design selected was causal-comparative (Fraenkal & Wallen, 2006). Causal-comparative research attempts to determine the cause or consequences of differences that already exist between or among groups of individuals (Fraenkal & Wallen). Causal-comparative research is sometimes viewed along with correlational research as a form of associational research since both describe conditions that already exist (Fraenkal & Wallen). Basic

causal-comparative design involves selecting two or more groups that differ on a particular variable of interest and comparing them on another variable or variables (Fraenkal & Wallen).

Data Collection and Processing Procedures

Data collection for this study of the effect of self-efficacy on the grade point average of three ethnic groups at a four-year college was initiated during the spring session of 2008 with the identification of classes at a four-year college in Florida. The course selected for this study was College Algebra, MAC 1105. College Algebra classes consisted of the ethnic composition of students who were seeking an associate of arts degree toward the completion of a bachelor's degree. These students would have registered for the Spring Session of 2008 and also had attained 24 to 60 college-level credits toward a bachelor's degree.

Identification of specific classes and instructors was determined by the program directors of the mathematics department for participation in this study. Upon identification of specific classes of College Algebra, MAC 1105, instructors of those classes received faculty communication (Appendix G). The faculty communication in Appendix G indicated that student participation was strictly voluntary and that instructors would not coerce students for participation or non-participation in this study. Also, instructors received a third party confidentiality agreement (Appendix C) for their signature which was required for participation in this study. Securing the assistance of the classroom instructors to distribute and retrieve CASES ensured a higher rate of

response returns as opposed to mail-out which is considered a weak method of securing data (Fraenkal & Wallen, 2006).

In addition, the instructor also received large, sealed envelopes to distribute to students in their classes. The packets included a participant cover letter (Appendix I), informed consent (Appendix D), the College Academic Self-Efficacy Scale (CASES) (Appendix A), and a registration card (Appendix J). Also included were three labeled envelopes for the return of the signed consent form, the registration card, and CASES. The consent form, the registration card, and CASES were numbered from 1 to 450 to ensure that each completed CASES instrument had a corresponding registration card and a signed informed content.

During the class period, the instructor distributed the sealed envelope packet to each student in the class. The instructor read the following statement: "Participation in this study is strictly voluntary and confidential. There are no penalties for non-participation. You may refrain from participating at any time." Students desiring to participate signed the consent form, completed the registration card, and completed the CASES instrument. Each completed document was placed in the three designated envelopes. Participants sealed the envelopes and returned them to the instructor by the end of the class period. The instructor collected the envelopes, placed them in a large self-seal envelope and delivered them to the third party of the Student System Support of the PeopleSoft Enterprise Campus Solutions (2005).

The Student System Support of the PeopleSoft Enterprise Campus Solutions (2005) is a department within the college that manages the student database system which

houses student grades. A member of the team served as the third party for this study by signing the Third Party Confidentiality Agreement. Upon receipt of the signed consent forms, CASES, and the registration cards, the third party of the PeopleSoft Team retrieved the current GPA for each participant. The third party of the PeopleSoft team provided the CASES instrument and the current GPA of the participants to the researcher. The researcher began analyzing the data.

The researcher did not have access to student names or identifying information during any portion of the study which ensured anonymity of participants. The cover letter to the participants explained how the data would be maintained and safeguarded in the researcher's locked file cabinet. The data will be maintained for the appropriate five-year period, according to the Internal Review Board, IRB, of Barry University, after which time the data will be destroyed.

Data Analysis Procedures

The data was analyzed by using the Software Package of Social Science (SPSS). The CASES instrument was scored manually by the researcher and rechecked to ensure for accuracy. Upon entry of the data in SPSS, the mean, standard deviation, and t-test were determined for each ethnic group. The self-efficacy scores were placed into high or low self-efficacy. A score of 99 and below was considered low self-efficacy whereas a score of 100 and above was considered high self-efficacy. Participants' grade point averages was also divided into high and low categories. Grade point averages equal to or less than 2.50 were considered low. Those grade point averages greater than 2.50 were

classified as high. An independent t-test was used to test each of the null hypotheses at the .05 level of significance.

Ethical Considerations

The idea of ethics basically refers to the questions of right or wrong (Fraenkal & Wallen, 2006). There are a number of ethical considerations that all researchers should note and apply to their study. These include protecting participants from physical or psychological harm. All participants were assured that any data collected from or about them would be held in confidence and that there would be no intentional misinforming of participants as to some or all aspects of the research topic.

The following considerations of participant assurances are noted below and were utilized for this research.

- That this research with "human subjects" is being conducted under the oversight of the Internal Review Board of Barry University toward a doctoral degree with permission granted from the Internal Review Board of St. Petersburg College.
- That participants were provided an informed consent document with the acknowledgement that as volunteer participants they may withdraw from the research study at any time or choose not to participate.
- That written consent must be obtained as the names and student identification numbers were utilized to identify participants for purposive, random sampling used in this study.
- That each participant would be notified of the plan for the use of the data gathered, as well as safety monitoring procedures.

- That privacy of the data gathered relating to participants would be respected and maintained.
- That data would be used, stored, and disclosed in a way that insures the privacy of individual research participants according to IRB protocol as outline by Barry University.
- That reported conclusions were based on accurately recorded data revealed in the study.

Chapter Summary

This chapter has described the methods and methodology used in the study of the effect of academic self-efficacy on the grade point average of three ethnic groups at a selected four-year college. The methods and methodology began with the philosophical framework or paradigm in the quantitative research methodology (Kerlinger & Lee, 2000; Berg, 2004). The research question was to determine the effect of academic self-efficacy on the grade point average of three ethnic groups at a four-year college.

The causal-comparative research design was selected for this study because the causal-comparative research design attempts to determine the cause or consequences of differences that already exist between or among groups of individuals (Fraenkal & Wallen, 2006). The alternative hypotheses stated that there is a difference in GPA among three ethnic groups based on academic self-efficacy. However, the null hypothesis stated that there is no difference in GPA among three ethnic groups based on academic self-efficacy in this study.

Purposive sampling was utilized to select the participants in the study. The three ethnic groups represented in this study were African-Americans, White, and Hispanic college students that had acquired 24 to 60 plus college-level course credits. The Owen and Froman (1988) College Academic Self-Efficacy Scale (CASES) was the instrument used to collect the data. The instrumentation process also included the procedures and conditions under which this instrument was administered (Fraenkal & Wallen, 2006).

CHAPTER IV

RESULTS

Introduction

The purpose of this study was to determine the effect of academic self-efficacy on the grade point average of three ethnic groups (i.e., African-American, White, and Hispanic) at a four-year college. Self-efficacy was defined in this study as one's self-judgments of personal capabilities to initiate and successfully perform academic tasks (Bandura, 1977; 1986). The dependent variable was the grade point average of participants, and the independent variable was academic self-efficacy. Academic self-efficacy was measured by the College Academic Self-Efficacy Scale (CASES) (Owen & Froman, 1988). The CASES instrument is a 33-item scale (Appendix A) which measures the confidence level of participants according to the behaviors listed.

This study hypothesized that there was a relationship between self-efficacy and grade point average. The null hypotheses stated that:

Ho_1: There is no difference in grade point average among African-American students based on academic self-efficacy.

Ho_2: There is no difference in grade point average among White students based on academic self-efficacy.

Ho_3: There is no difference in grade point average among Hispanic students based on academic self-efficacy.

The alternate hypotheses stated that:

Ha_1: There is a difference in grade point average among African-American students based on academic self-efficacy.

Ha_2: There is a difference in grade point average among White students based on academic self-efficacy.

Ha_3: There is a difference in grade point average among Hispanic students based on academic self-efficacy.

Description of Sample

This study was conducted during the Spring Session of 2008. The sample for this study consisted of college students enrolled in the College Level Algebra course, MAC 1105, at a four-year college. The college-level algebra course was selected to reflect students having completed 24 to 60 credit hours of college-level courses toward a bachelor's degree.

Instructors of the college-level algebra course were identified by program directors of the Mathematics Department. The instructors that agreed to participate were provided the Faculty Communication (Appendix G) and Third Party Confidentiality Agreement (Appendix C) for their signatures. The instructors were also provided the survey packets for each student. The packets contained a Cover Letter (Appendix I), an Informed Consent (Appendix D), a College Academic Self-Efficacy Scale (Appendix A), and a Registration Card (Appendix J).

The total number of survey packets distributed was 450. Of those survey packets distributed, 253 surveys were returned, i.e., 22 African-American, 185 White, 18 Hispanic, and 28 that identified ethnicity in the other category. Participation by students

consisted of signing the Informed Consent (Appendix D), providing student identification number (Appendix J) and completing the 33-item College Academic Self-Efficacy Scale. (Appendix A).

Each of the fully completed survey packets was eligible for inclusion in this study. There were 22 for African-American students, 178 for White students and 18 for Hispanic students that were fully completed. The 35 remaining survey packets were incomplete (i.e., students did not indicate ethnicity, ethnicity was indicated in the other category, students failed to sign the consent form and/or failed to provide student identification number).

Findings

The primary investigation of this study was to determine the effect academic self-efficacy had on the grade point average of three ethnic groups attending a four-year college. Participants were given the 33-item College Academic Self-Efficacy Scale (CASES). The CASES instrument was designed to ask students how confident they were that they could complete given tasks associated with college academics. The responses to each item on CASES was rated on a 5-point Likert scale with a confidence range of A which indicates “quite a lot” of confidence to E indicating “very little” confidence. The instrument was scored manually by the researcher. The scores were analyzed utilizing the Statistical Package for Social Science (SPSS) to determine the mean score, and a *t*-test was computed on the mean scores.

There are two reasons to prefer a mean score. On a 33-item scale, the person who skips any items had his/her mean calculated on the number of items completed with no

penalty for missing data. Second, utilizing the mean score puts the overall score in the same metric as the original response scale. The internal consistency reliability analysis for the CASES instrument measured Cronbach's alpha at .90 and .92 respectively (Owen & Froman, 1988).

Participants had the ability to score between a range of 33 points ("very little" confidence) and 165 points ("quite a lot" of confidence). The scores of each ethnic group were placed into either high or low academic self-efficacy. High and low determinations were based on the total number of points that could be attained on the CASES. The minimum number was 33 points, and the maximum was 165 points. The mid-point was selected at 99 points. In applying these points to SPSS - Version 15.0, the researcher determined the cut-off score to be 3 which represents 99 points. Any scores equal to or less than 3 (i.e., 99 points) were calculated as low academic self-efficacy. Any scores greater than 3 (i.e., 99 points) were calculated as high academic self-efficacy. Utilizing SPSS, the researcher calculated the independent samples t-test which was performed to determine the effect of academic self-efficacy on the grade point average, GPA, of college students from three ethnic groups (i.e., African-American, White, and Hispanic).

Research Question #1

The first research question was the following: What is the effect of academic self-efficacy on the grade point average of African-American students at a four-year college? This section will discuss the results related to the question.

There were 22 CASES instruments scored for African-American participants. The mean academic self-efficacy score for African-American participants above the cut-score of 3 was 2.6295, while the mean self-efficacy score for students below the cut-score was 2.6408. Seventeen participants rated high academic self-efficacy, and five rated low academic self-efficacy (Table 3).

An independent samples t-test was conducted to determine if there was a significant difference between the grade point average, GPA, of African-American students with high academic self-efficacy scores and those with low academic self-efficacy scores. The significance level was set at the .05 level for a two tailed t-test. The null hypothesis stated the following: There is no difference in grade point average among African-American students based on academic self-efficacy. The alternate hypothesis stated the following: There is a difference in the grade point average among African-American students based on academic self-efficacy.

Table 3.

Group Statistics for African- American Participants

	Academic Self-Efficacy Score	N	Mean	Std. Deviation	Std. Mean
GPA	>=3.00	17	2.6295	.67414	.16350
	<3.00	5	2.6408	.76415	.34174

For a two-tailed t-test with equal variances assumed, a significance value of .975 was acquired (Table 4). This value indicates that 975 times out of 1000, or approximately a 98 percent possibility, that the results occurred due to chance are greater than the accepted alpha level of .05. Therefore, no significant difference was found (t(20) = -.032,

p>.05). The mean academic self-efficacy score attained on the CASES instrument for African-American participants with low academic self-efficacy (m = 2.6408, sd = .76415) was not significantly different from the mean academic self-efficacy scores attained on the CASES instrument for participants with high academic self-efficacy (m= 2.6295, sd = .67414). The null hypothesis could not be rejected, and it is concluded that academic self-efficacy has no effect on the grade point average among African-American college students.

Table 4.

Independent Samples t-test for Equality of Means for African American Participants

		t-test for Equality of Means						
		t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Difference	
							Lower	Upper
GPA Point Average	Equal Variance Assumed	-.032	20	.975	-.01127	.35260	-.74679	.72424

Research Question #2

The second research question was the following: What is the effect of academic self-efficacy on the grade point average of White students at a four-year college? This section will discuss the results related to the question.

There were 178 CASES instruments scored for White participants. The mean academic self-efficacy score for White participants above the cut-score of 3 was 2.57919. The mean academic self-efficacy score for White research participants above the cut-score of 3 was 2.57919. The mean self-efficacy score for students below the cut-score

was 2.9932. One-hundred sixty-two White participants were rated as having high academic self-efficacy, and 16 were rated as having low academic self-efficacy (Table 5).

Table 5.

Group Statistics for White Participants

	Academic Self-Efficacy Score	N	Mean	Std. Deviation	Std. Mean
GPA	>=3.00	162	2.96632	.890823	.06990
	<3.00	16	2.57919	.857810	.214452

In a two-tailed *t-test* with equal variances assumed, a significance value of .098 was acquired (Table 6). This value indicates that 98 times out of 1000 or approximately a 9 percent possibility, the results occurred due to chance are greater than the accepted alpha level of .05. Therefore, no significant difference was found ($t(176) = 1.664$, $p>.05$). The mean academic self-efficacy score attained on the CASES instrument for White participants with low academic self efficacy ($m=2.57919$, $sd = .857810$) was not significantly different from the mean academic self-efficacy score attained on the CASES instrument for participants with high academic self-efficacy ($m=2.96632$, $sd = .890823$). The null hypothesis could not be rejected, and it is concluded that academic self-efficacy has no effect on the grade point average among White research participants.

Research Question #3

The third research question was: What is the effect of academic self-efficacy on the grade point average of Hispanic students at a four-year college? This section will discuss the results related to the question.

Table 6.

Independent Samples t-test for Equality of Means for White Participants

		t-test for Equality of Means						
		t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Difference	
							Lower	Upper
GPA Point Average	Equal Variance Assumed	1.664	176	.098	.387133	.232720	-.072147	.846414

The mean academic self-efficacy score for Hispanic students above the cut-score of 3 was 3.3393, while the cut-score below 3 could not be computed because there were no participants below the cut-score of 3 (Table 7). The independent samples t-test utilizing the Statistical Package for Social Science (SPSS, 2005) 15.0 Version software could not determine if there was a significant difference between the participant GPA of the Hispanic students with high academic self-efficacy scores and those with low academic self-efficacy scores. As a result, the level of significant difference could not be determined.

Table 7.

Group Statistics for Hispanic Participants

	Academic Self-Efficacy Score	N	Mean	Std. Deviation	Std. Mean
GPA	>=3.00	18	3.3393	.63306	.14921
	<3.00	0(a)			

a. *t* cannot be computed because at least one of the groups is empty.

Summary of Findings

There were no significant findings for the effect of academic self-efficacy on the grade point average of three ethnic groups (i.e., African-American, White, or Hispanic) at a four-year college. Therefore, based on the t-test statistical analyses, the hypotheses, stated in the null were not rejected for the three ethnic groups.

Chapter Summary

This chapter presented the results of the statistical analyses of data collected in an effort to determine the effect of academic self-efficacy on the grade point average of three ethnic groups (i.e., African-American, White, and Hispanic) at a four-year college. A description of the sample population, CASES response rate, and characteristics of the participants were also discussed.

CHAPTER V

DISCUSSION OF THE FINDINGS

Introduction

Access to higher education in the United States is relatively open to all individuals (Altbach, 2005; Aguirre & Martinez, 1993). Yet, achievement gaps in college participation and completion between African-Americans and Whites and between Whites and Hispanics remain large (Bauman, et al., 2005). The achievement gap represents the disparity in school performance tied to race and ethnicity that is reflected in grades, test scores, course completions and college completions (Johnson & Viadero, 2000).

Education provides the key to closing the achievement gap and opening the gates of opportunity (NAACP Legal Defense and Educational Fund, Inc.,2005) for African-American and Hispanic students as well as White students. Education is a foundation of our democracy and the means for ensuring that every individual reaches his or her full potential. Moreover, for America to be prepared for the economic and other challenges facing it in the 21st Century, there is no other alternative but to close the gap in educational achievement.

Although some progress has been made, severe gaps in access to and graduation from higher education institutions continue. If we are to achieve our full potential as a nation, we must address this problem and not just with rhetoric, but with actions also (NAACP Legal Defense and Educational Fund, Inc., 2005). One of the strategies to closing the achievement gap is to develop methods of assessing individual behavior and

beliefs toward academic achievement. One such method is found in academic self-efficacy.

The goal of self-efficacy is to understand and predict individual and group behavior and to identify methods in which behavior can be modified or changed (Bandura, 1986).The purpose of this study was to determine the effect of academic self-efficacy on the grade point average of three ethnic groups (i.e., African-American, White, and Hispanic) at a four-year college. The procedures for this study began by distributing the College Academic Self-Efficacy Scale to 450 college students enrolled in a college algebra course, MAC 1105.

Summary of the Findings

The theoretical framework for this study was based on Bandura's (1977, 1986) theory of self-efficacy. Bandura defines self-efficacy as people's judgments of their capabilities to organize and execute a course of action required to attain designated types of performances. Self-efficacy is not concerned with the strategies one has but with judgments of what one can do with whatever strategies one possesses (Bandura, 1986, p. 391).

This study focused primarily on academic self-efficacy in college students. Academic self-efficacy is defined as an individual's level of belief in his/her capability to successfully complete academic tasks by mobilizing the motivation, cognitive resources, and courses of action needed to exercise control over task demands successfully (Bandura, 1990; Zimmerman, 1995).

For purposes of this study, academic self-efficacy was measured by the College Academic Self-Efficacy Scale (CASES) (Owen & Froman, 1988). The independent variable was the grade point average (GPA), while the dependent variable was academic self-efficacy. The academic self-efficacy score was divided into high and low scores. These scores were determined to range from 33 to 165. The minimum score was 33, and the maximum score was 165 with a score of 99 serving as the mid-range. A cut-score of 3 represented the 99 point mid-range for academic self-efficacy in the SPSS statistical analysis.

Relying on quantitative analysis, the study was designed to answer three research questions. The research questions were central to the study, and the CASES instrument was utilized to produce measurable results that would respond to the questions. The research questions were as follows:

1. What is the effect of academic self-efficacy on the grade point average of African-American students at a four-year college?
2. What is the effect of academic self-efficacy on the grade point average of White students at a four-year college?
3. What is the effect of academic self-efficacy on the grade point average of Hispanic students at a four-year college?

As a result, this study hypothesized that there was a relationship between self-efficacy and grade point average. The null hypotheses stated that:

Ho_1: There is no difference in grade point average among African-American students based on academic self-efficacy.

Ho_2: There is no difference in grade point average among White students based on academic self-efficacy.

Ho_3: There is no difference in grade point average among Hispanic students based on academic self-efficacy.

While the alternate hypotheses stated that:

Ha_1: There is a difference in grade point average among African-American students based on academic self-efficacy.

Ha_2: There is a difference in grade point average among White students based on academic self-efficacy.

Ha_3: There is a difference in grade point average among Hispanic students based on academic self-efficacy.

The impetus for this study is rooted in an attempt to address the high achievement gap between African-American and Hispanic college students that continue to lag behind their White counterparts. The theory of self-efficacy, as the research framework, is considered because it provides explicit guidelines on how to equip people with competencies, self-regulatory capabilities, and a resilient sense of efficacy that enable them to enhance their well-being and accomplishments. Academic self-efficacy, in particular, addresses a student's individual level of belief in his or her capability to successfully complete academic tasks by mobilizing the motivation, cognitive resources, and courses of action needed to exercise control over task demands successfully (Bandura, 1990; Zimmerman, 1995).

The CASES instrument was administered during the Spring Semester of 2008 and included students enrolled in college level algebra, MAC 1005. There were 450 surveys provided to program directors for the Mathematics Department. These surveys were distributed to classroom instructors to administer to students. A total of 253 students responded to the survey. Those surveys eligible (i.e., completed CASES, signed informed consent, and submitted student identification number) for this study yielded 22 for African-American students, 178 for White students, and 18 for Hispanic students. The remaining 35 surveys were not eligible (i.e., ethnicity was identified in the other category or not identified, students did not sign the informed consent or identify ethnicity, or students did not provide identification number).

The means of two ethnic groups (i.e. African-American and White) were compared using the *t*-test. The means for the Hispanic participants could not be compared because there were no participants below the cut-score of 3. The cut-score of 3 indicated that participants had low academic self-efficacy. As a result, the level of significance could not be determined for Hispanic participants.

However, the *t*-test for African-American participants yielded a significance value of .975, therefore no significant difference was found at the .05 level. In other words, the mean academic self-efficacy of participants was not significantly different from the mean grade point average. The null hypothesis could not be rejected, and it is concluded that there is no difference in academic self-efficacy and grade point average among African-American participants.

The *t*-test for White participants yielded a significance value of .098, therefore no significant difference was found at the .05 level. The mean academic self-efficacy of participants, therefore, was not significantly different from the mean grade point average. Thus the null hypothesis could not be rejected, and it is concluded that there is no difference in academic self-efficacy and grade point average among African-American participants.

Although research has demonstrated that academic self-efficacy affects grade point average, in this study whether students had high academic self-efficacy or low academic self-efficacy, the results did not indicate an effect on the grade point average among the ethnic groups. This might be due to the timing of the distribution of the CASES instrument which occurred just prior to the end of the semester when a number of students with low academic self-efficacy had dropped the College Level Algebra course, MAC 1105. The greatest limitation of this study was the timing of the administration of the CASES instrument. Another limitation included differences among faculty who administered the CASES instrument. Although faculty were provided instructions for the administration of the CASES instrument, faculty teaching and administration style of CASES, and length of experience in the classroom could have influenced student willingness to participate as well as responses.

Recommendations for Further Research

The quantitative method was the only method utilized in conducting this study. Incorporating a qualitative component could have tremendously supplemented the findings of this study. A qualitative analysis might have included Bandura's sources of

self-efficacy (i.e., mastery experiences, vicarious learning, persuasion, and physiological state) and their influence on participant response to the CASES instrument. In addition, participants might have been asked to also indicate their future academic goals, the timeline for their attainment, and their overall outlook for academic success. These responses would have provided a much more in depth awareness of participants' academic self-efficacy.

It is recommended that this study be conducted utilizing a qualitative component in addition to quantitative. Further, it is recommended that this study be conducted at the beginning of the semester for the College Level Algebra course, MAC 1105. Conducting the study at the beginning of the semester might provide greater opportunity for more students to participate, especially, African-American and Hispanic students.

Another recommendation that might prove beneficial, and especially in light of the low number of minority students participating in this study, conduct a pre- and post-administration of the CASES instrument which might prove to be more predictive of academic accomplishments as indicated by the grade point average.

This study did not consider if any of the participants had repeated the College Level Algebra course, MAC 1105. Nor did it contemplate any participants who had repeat experience in developmental mathematics courses. Both of these might have influenced confidence levels of academic self-efficacy. Research on self-efficacy, as related to minorities, is scarce (Bandura, 1997; Graham, 1994; Jonson-Reid, Davis, Saunders, Williams, & Williams, 2005). A literature review conducted by Graham (1994) consisted of 140 studies that focused on African-American motivation and determined

that only 18 of the studies focused on ability or self-concept with no mention of the term self-efficacy.

The primary focus of this study was to determine the effect of academic self-efficacy on the grade point average of three ethnic groups (i.e., African-American, White, and Hispanic) at a four-year college. According to Rodriquez (1996), when viewing self-efficacy as a construct that predicts academic performance and that leads to successful completion of postsecondary education, the data reveal that self-efficacy is especially important for minority student success given the large achievement gap. In addition, a meta-analysis conducted by Pascarella and Terenzini (2005) and Nettles, Thoeny, and Gosman (1986) revealed that the best predictors for GPA were academic self-efficacy. Although this study did not support the research questions and the null hypotheses could not be rejected, it is highly recommended that this study be replicated, and research on academic self-efficacy in minority students continues to be explored.

Chapter Summary

This chapter presented a summary of the study, discussion of findings, and recommendations. It was concluded that there was no significant effect of academic self-efficacy on the grade point average of three ethnic groups (i.e., African-American, White, and Hispanic) at a four-year college.

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APPENDICES

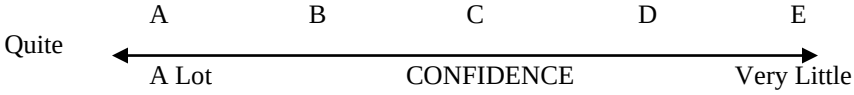
APPENDIX A: College Academic Self-Efficacy Scale

College Student Questionnaire

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.

Ethnicity:_____

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



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.

Thanks for your help!

APPENDIX B: Scoring Considerations

Scoring Considerations. Many measurement specialists suggest creating a total scale score by summing the item responses. But whenever there are missing data, the sum score is incorrect. That is, a person who omits an item or two gets a lower score, but it is simply an artifact of missing data and not actually "less" of whatever the scale is measuring.

There are two reasons to prefer a mean score, averaging across the items. One, it compensates for missing data. On a 33-item scale, the person who skips two items has her mean calculated on 31 items, and there is no penalty for missing data. Second, it puts the overall score in the same metric as the original response scale, usually 1-5. I have a pretty good sense what an overall score of 4.0 means on a 5-point scale, but it is confusing to think of what a total score of 26.4 refers to on the 33-item scale. (Those two scores are actually equivalent if there are no missing data).

A couple of years ago, a doctoral student using CASES doubted that there was only one overall dimension. I combined 21 data sets and did a series of exploratory factor analyses. A two-factor structure looked good, implying two sub-scores. However, when I tested both the 1-factor model and the 2-factor model with confirmatory factor analysis, it was the 1-factor model that showed the best fit with the data.

So, we stick with the original scoring protocol, which is to calculate mean scores across all the items. Below are some summary data from our large CASES file, so you can get a sense of how University of Connecticut undergraduate students scored across a 5-year period.

APPENDIX C: Third Party Confidentiality Agreement

As a member of the research team investigating *The effect of self-efficacy on the grade point average of three ethnic groups at a four-year college*, I understand that I will have access to confidential information about participants in this research project. By signing this statement, I am indicating my understanding of my obligation to maintain confidentiality and agree to the following:

- I understand that names and any other identifying information about study participants are strictly confidential.
- I agree not to divulge, publish, or otherwise make known to unauthorized persons or to the publisher any information obtained in the course of this research project that could identify the persons who participated in the study.
- I understand that all information about study participants obtained or accessed by me in the course of my work is confidential. I agree not to divulge or otherwise make known to unauthorized persons any of this information unless specifically authorized to do so by office protocol or by a supervisor acting in response to applicable protocol or court order, or public health or clinical need.
- I understand that I am not to read information and records concerning participants in this research project, or any other confidential documents, nor ask questions of research participants for my own personal information but only to the extent and for the purpose of performing my assigned duties on this research project.
- I understand that a breach of confidentiality may be grounds for disciplinary action, and may include termination of employment.
- I agree to notify my supervisor immediately should I become aware of an actual breach of confidentiality or situation that could potentially result in a breach, whether this is on my part or on the part of another person.

_____	_____	_____
Signature - Third Party	Date	Printed Name

_____	_____	_____
Signature - Researcher	Date	Printed Name

APPENDIX D: Informed Consent Form

Dear Research Participant:

Your participation in a research project is requested. The title of the research study is the effect of self-efficacy on the grade point average of three ethnic groups at a selected four-year college. The research is being conducted by Linda L. Hogans, a doctoral student in the education department of Barry University, and is seeking information that will be useful in the field of higher education. The aim of the research is to determine the effect of self-efficacy and the grade point average of three ethnic groups at a four-year college in an effort to develop strategies to improve students' ability to successfully obtain a college degree. Four-hundred students are projected to be surveyed in this research project.

Your participation is strictly voluntary. However if you decide to participate in this research project, you will be asked to do the following: sign and date this informed consent form and maintain the enclosed copy for your records, and complete the college student scale. Place the college student scale and the signed consent form in the return self-sealed envelope and return to the instructor. The entire process should take approximately 10 minutes.

Your consent to be a participant in this research project is strictly voluntary and should you decline to participate or should you choose to drop out at any time during the project, there will be no adverse effects on your performance.

Any risk of identifying individual students by the researcher is minimized by the following procedures: the college student scale can only be identified by the student identification number which is self-disclosed. The grade point average will be retrieved by a third party, and this researcher will not have access to any student names. Although there are no direct benefits to you, your participation in this research project furthers our understanding of the theory of self-efficacy and its effect on grade point averages of these three ethnic groups.

As a participant in this research project, information you provide will be held in the strictest confidence as required by law. Any published results of the research will only refer to group averages, and no names will be used in this research project. All data utilized in this research project will be kept in a locked file in the researcher's office. Your signed consent form will be kept separate from the data. All data will be destroyed after five years.

If you have any questions or concerns regarding the study or your participation in the study, you may contact me, Linda L. Hogans, at, (727) 341-3537, my supervisor Dr. Lars Hafner at 341-4656, or the Institutional Review Board point of contact, Ms. Nildy Polanco, at (305) 899-3100. If you are satisfied with the information provided and are willing to participate in this research project, please signify your consent by signing and dating this consent form.

Voluntary Consent

I acknowledge that I have been informed of the nature and purpose of this research project by Linda L. Hogans, that I have read and understand the information presented above, and that I have received a copy of this form for my records. I give my voluntary consent to participate in this research project.

Signature of Participant: _____ Date_____

APPENDIX E: Instrument Permission

Linda Hogans
Barry University

5 July 2007

Dear Linda,

Thank you for your inquiry about the College Academic Self-Efficacy Scale (CASES). Your student is certainly welcome to use CASES. I've attached a copy of the scale. Here are a few summary points about the scale.

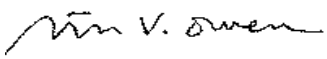
Items are scored as A ("quite a lot") = 5…E ("very little") = 1. On the other hand, because we read from right to left, data entry is faster letting A = 1, and E = 5. If you enter data with A = 1, then let the computer recode the values so that A becomes 5, B becomes 4, etc. In calculating an overall CASES score, we prefer calculating a mean rather than a sum.

You may wish to modify questionnaire instructions to best fit your application. For example, if you need informed consent, you might say something like "Filling out this questionnaire 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,



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APPENDIX F: Descriptive Statistics

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
c1	3147	1	5	2.72	1.130
c2	3143	1	5	2.89	1.155
c3	3141	1	5	3.13	1.177
c4	3139	1	5	2.59	1.188
c5	3142	1	5	2.56	1.126
c6	3141	1	5	2.82	1.092
c7	3135	1	5	2.89	1.070
c8	3140	1	5	2.78	1.047
c9	3140	1	5	3.10	1.083
c10	3138	1	5	2.83	1.073
c11	3144	1	5	2.91	1.087
c12	3141	1	5	2.79	1.042
c13	3142	1	5	2.72	1.025
c14	3130	1	5	3.40	1.301
c15	3141	1	5	2.74	1.350
c16	3133	1	5	2.63	1.117
c17	3147	1	5	2.34	1.500
c18	3142	1	5	2.45	1.335
c19	3124	1	5	2.55	1.169
c20	3135	1	5	2.70	1.056
c21	3128	1	5	2.65	1.076
c22	3137	1	5	2.46	1.423
c23	3134	1	5	2.87	1.254
c24	3133	1	5	2.83	1.204
c25	3128	1	5	2.87	1.132
c26	3126	1	5	2.86	1.110
c27	3134	1	5	3.14	1.193
c28	3109	1	5	3.03	1.012
c29	3134	1	5	2.75	1.144
c30	3130	1	5	2.72	1.115
c31	3137	1	5	2.93	1.083
c32	3131	1	5	2.91	.904
c33	3135	1	5	2.95	.916
CASES	3149	1.19	4.91	2.8041	.65143
Valid N (listwise)	2911				

APPENDIX G: Faculty Communication

September 15, 2007

Dear «Faculty_Member»,

As partial fulfilment of the requirements for the degree of Doctor of Philosophy, I am conducting a quantitative study and I am asking for your voluntary support in the distribution and retrievel of the envelopes.

The purpose of this study is to determine *the effect of academic self-efficacy on the grade point average of three ethnic groups at a four-year college*. Self-efficacy as defined by Albert Bandura (1977) is an individual's judgment of her or his own ability to accomplish tasks, and specifically academic self-efficacy for the purposes of this research project.

The effect of self-efficacy on the grade point average may provide practical educational applications. Those students with low academic self-efficacy may be at risk for academic failure or not completing a post secondary degree. The results of this research project may provide valuable information toward developing strategies to improve postsecondary completion rates.

If you give your permission, please return the form below indicating the date and time that you will distribute the information to your class. The information will enclosed in a 11x14 inch sealed envelope for the students in your class. Student participation is strictly voluntary and no form of coercion should be exerted for participation or non-participation. The students that agree to participate will read the contents of the envelope and return to you self-sealed envelopes to be mailed to a third party in the self-address envelope. The entire process should take approximately 10 minutes.

Your participation and that of your students are greatly appreciated. If you have any questions, you may contact me at (727) 341-3537.

Sincerely,

Linda L. Hogans, M. Ed.
Director Office of Special Programs
St. Petersburg College
St. Petersburg Gibbs Campus – AD209
(727) 341-3537
Hogans.linda@spcollege.edu

Faculty: «Faculty Member» Course: «Course Title»

☐Check here if you prefer NOT to participate.

Date: _____ Time: _____ Room: _____
Date: _____ Time: _____ Room: _____

APPENDIX H: Communication Between SPC IRB and Campus Provost

Dear Dr. Hafner:

I am writing to inform you of a study being conducted at St. Petersburg College to determine *the effect of academic self-efficacy on the grade point average of three ethnic groups*. Specifically, the intent is to determine if academic self-efficacy has an effect on the grades of African-American, White, and Hispanic students whose program of student is associates of arts, and are enrolled in College Algebra, MAC 1105.

In the next two weeks, Linda Hogans, the Director of the Office of Special Program for St. Petersburg College, is going to contact program directors and faculty who teach College Algebra, MAC 1105. Your participation in this study, and that of your faculty, are voluntary and would amount to allowing 10 minutes of classroom time for students to complete the brief survey (see attached). Upon delivery of the survey to Linda, faculty will not be requested for any further assistance in this research project. Individual student names or numbers, of course, will not be displayed in the research project findings or reports.

While Linda is conducting this quantitatiave study for her dissertation, it also presents a valuable opportunity for St. Petersburg College to gain a better understanding of how to further improved students' colleges experience and postsecondary completion rates. We hope you will encourage your Campus Program Directors to, in turn, encourage their faculty to participate.

Please feel free to contact Linda directly if you have any concerns or questions. And let her know if you would like a copy of the full study proposal. Thanks in advance for your interest and encouragement.

SPC IRB

APPENDIX I: Cover Letter

Dear Research Participant:

Your participation in a research project is requested. The title of the study is *the effect of self-efficacy on the grade point average of three ethnic groups at a four-year college*. The research is being conducted by Linda L. Hogans, a student in the education department of Barry University, and is seeking information that will be useful in the field of higher education. The aims of the research are to determine the effect of self-efficacy on the grade point average of three ethnic groups at a four-year college to develop strategies to improve students' ability to successfully complete college. In accordance with these aims, the following procedures will be used: a faculty member will distribute sealed envelopes that contain the survey instrument, and two copies of a consent form (one for your records, the other to be signed and returned with the survey in the enclosed self-sealed envelope). Completion of the survey should take 10 minutes. Upon receipt the researcher will compile and correlate your grade point average by a third party according to your student number. No names will be associated with your responses in this survey. We anticipate the number of participants to be 400.

Your consent to be a research participant is strictly voluntary and should you decline to participate or should you choose to drop out at any time during the study, there will be no adverse effects on your class performance. There are minimal risks associated with your involvement in this study. The following procedures will be used to minimize these risks: the survey questionnaire will be number coded according to your student number which you provided. Your grade point average will not be associated with your name but only to your student identification number. Although there are no direct benefits to you, your participation in this study may help our understanding of self-efficacy and its effect on the grade point average of three ethnic groups at a four-year college.

As a research participant, information you provide will be held in confidence to the extent permitted by law. Any published results of the research will refer to group averages only, and no names will be used in the study. Data will be kept in a locked file in the researcher's home office for five years according to legal requirements. Your signed consent form will be kept separate from the data. All data will be destroyed after five years.

If you have any questions or concerns regarding the study or your participation in the study, you may contact me, Linda L. Hogans, at, (727) 341-3537, my supervisor Dr. Lars Hafner at 341-4656, or the Institutional Review Board point of contact, Ms. Nildy Polanco, at (305) 899-3100. If you are satisfied with the information provided and are willing to participate in this research, please sign the enclosed consent form.

Sincerely,
Linda L. Hogans

APPENDIX J: Registration Card Information

Student Code	#1
College ID Number (student self-discloses)	00000000