

AN EXPLORATION OF THE RELATIONSHIP BETWEEN STUDENT ENGAGEMENT
AND ACADEMIC PERFORMANCE OF UNDERGRADUATE STUDENTS AT A PUBLIC
HISTORICALLY BLACK HIGHER EDUCATION INSTITUTION IN THE SOUTHEAST

by

MATTHEW ALEXANDER, JR.

A DISSERTATION

Submitted in partial fulfillment of the requirements
for the degree of Doctor of Education in the
Department of Educational Leadership,
Policy, and Technology Studies
in the Graduate School of
The University of Alabama

TUSCALOOSA, ALABAMA

2009

Copyright Matthew Alexander, Jr. 2009
ALL RIGHTS RESERVED

ABSTRACT

Many colleges and universities are grappling with the ever-increasing challenge of understanding the impact that college has on students. Research has validated the fact that student engagement has a significant impact on academic performance, satisfaction with college experience, and graduation rates. Student engagement is the connection that students have, both academically and extracurricular, to their institution. Beyond that, student engagement is the manner in which higher education institutions help to foster student success. Undeniably, African American students at Historically Black Colleges and Universities (HBCUs) seem to face greater, perhaps unique, challenges in their quest to obtain a degree. The number of barriers that many of these students face is surreal, and the impact that HBCUs have on the educational outcomes of their students warrants further exploration.

Exploratory in nature, this study examined the relationships between student engagement patterns and academic performance of undergraduate students at a public historically Black higher education institution in the Southeast. This study was ex post facto, since the data from students' responses to the survey items on the 2008 National Survey of Student Engagement (NSSE) had been collected prior to the design of this research study. In an effort to answer the research questions that were posed, the general linear model univariate analysis of variance statistical procedure was employed to model the relationships between the NSSE Benchmarks (i.e., academic challenge, active and collaborative learning, study-faculty interaction, supportive campus environment, and enriching educational experiences) and the outcome variable, student self-reported academic performance.

The findings support the conclusion that student engagement has multi-dimensional effects. While a particular independent variable in one model might have had a statistically significant linear relationship with the dependent variable, student self-reported academic performance, that independent variable might not have had a statistically significant linear relationship when other independent variables were added to the model. For the most part, in some models, several of the independent variables did not have an additive effect and failed to contribute to the statistical significance, relationship, or prediction of the dependent variable.

DEDICATION

This dissertation is dedicated to my mother, Barbara, who has sacrificed her life for my four sisters and me. Also, this work is dedicated to my first, dissertation chairperson, the late

Dr. Harold L. Bishop, Sr. Your spirit still lives on.

LIST OF ABBREVIATIONS AND SYMBOLS

<i>df</i>	Degrees of freedom: number of values free to vary after certain restrictions have been placed on the data
<i>F</i>	Fisher's <i>F</i> ratio: A ration of two variances
GPA	Grade Point Average
<i>M</i>	Mean: the sum of a set of measurements divided by the number of measurements in the set
<i>MS</i>	Mean square
<i>N</i>	Total number in the sample
<i>n</i>	Number in the subsample
η^2	Eta squared; measure of strength of relationship
NSSE	National Survey of Student Engagement
<i>p</i>	Probability associated with the occurrence under the null hypothesis of a value as extreme as or more extreme than the observed value
R^2	Multiple correlation squared; measure of strength of relationship
<i>SD</i>	Standard deviation
<	Less than
=	Equal to

ACKNOWLEDGMENTS

The completion of this dissertation could not have been possible without the support and encouragement of numerous individuals. I want to express my heartfelt appreciation to those who have been instrumental in helping me throughout this incredible journey. Without all of you, I could not have achieved this great milestone.

First and foremost, I want to thank God, for without Him, starting and completing this academic journey would not have been possible. To my mother, Barbara, thank you for always believing in me and motivating me to reach for higher heights of academic excellence and achievement. Also, thanks for always having a listening ear, regardless of what time of the morning or night it was, and for always having an encouraging word or scripture to say. Thanks for understanding when I wanted to come home to spend time with you but could not because of a deadline that I had to meet. Now that this journey is finally over, we have a lot of catching up to do. To my four sisters, Leticia, Anita, Candace, and Sophia, thanks for being my cheerleaders and for believing in me as well. For every journey that I have undertaken, all of you have always been there to cheer me on to the finish line. During the celebratory moments, as well as the challenging times, you have always been there to keep me grounded and hold me up. Together, all of you have been my rock and the wind beneath my wings! I love you all!

In addition, I want to thank my dissertation chairperson, Dr. Erevelles, for agreeing to chair my dissertation. If it were not for you, I could not have made it. Thanks for believing in me and pushing me when I needed it most. You are truly a blessing. To my committee members, Dr. Bray, Dr. Hardy, Dr. Mutua, Dr. Benson, and Dr. Urban, thank you for all of your

time, support, patience, and suggestions. Having known each of you has greatly impacted my life. Even though your schedules were full, all of you agreed to serve on my committee. I am indebted to all of you for the rest of my life.

I am especially grateful to my dissertation support group, Wynora and Carlton. I could not have made it without the two of you. The many days that we spent working, discussing, laughing, and most of all, encouraging one another will never be forgotten. This entire journey, through coursework, comprehensive exam, and dissertation, was made easier knowing that I could call on you whenever I needed support. Thanks for being there for me when I needed you most. For all of my past and present supervisors, Gwen, Angela, Liz, Janet, and Jim, thanks for being flexible and understanding when I needed to take off to go to UA. Also, thanks for encouraging me to finish this journey. To all of my colleagues who have traveled with me at some point along this journey, thank you for understanding, encouraging, and seeing me through. To my mentors and those whom I have mentored, thank you for believing in me and always giving me the support and encouragement that I needed. Words cannot express what your support has meant to me over these past years.

Furthermore, I must extend my sincerest appreciation to the Director of Institutional Research at the institution that was used for this study. Without your support, I would not have been able to obtain the data for this study. You are truly a blessing! To all of the librarians from the several states that I have traveled to utilize resources, thanks for your patience, insight, and direction. Because of your kindness and support, I always felt welcomed. To these individuals and countless others, from the bottom of my heart, I say thank you, and I will never forget the positive impact that you have had on my life.

CONTENTS

ABSTRACT	ii
DEDICATION	iv
LIST OF ABBREVIATIONS AND SYMBOLS	v
ACKNOWLEDGMENTS	vi
LIST OF TABLES	x
LIST OF FIGURES	xii
1. INTRODUCTION	1
a. Statement of the Problem	6
b. Statement of the Purpose	9
c. Research Questions	9
d. Definition of Related Terms	11
2. REVIEW OF RELATED LITERATURE	16
a. Theoretical Framework	16
b. College Impact on Various Student Outcomes	20
c. A Brief History of the African American Experience in Higher Education	41
d. Summary	49
3. METHODOLOGY	51
a. Sample Population	53
b. Instrumentation	54
c. Validity and Reliability	56

d. Description of Variables in the Study.....	58
e. Data Collection Procedures.....	59
f. Data Analysis Procedures.....	59
g. Limitations of the Study.....	66
h. Summary.....	67
4. RESULTS.....	68
5. SUMMARY, CONCLUSIONS, RECOMMENDATIONS.....	103
a. Summary of the Study.....	104
b. Discussion of the Findings.....	106
c. Conclusions.....	116
d. Recommendations for Policy and Practice.....	119
e. Recommendation for Further Study.....	121
REFERENCES.....	122
APPENDIX A.....	137
APPENDIX B.....	142

LIST OF TABLES

1 Crosstabulation of Age by Student Classification	69
2 Crosstabulation of Sex by Student Classification.....	70
3 Crosstabulation of Enrollment Status by Student Classification	71
4 Descriptive Statistics Academic Grades, ACT, and SAT Scores by Student Status	72
5 GLM Analysis of Variance Summary for Academic Challenge and Academic Performance.....	74
6 GLM Analysis of Variance Summary for Active and Collaborative Learning and Academic Performance.....	75
7 GLM Analysis of Variance Summary for Student-Faculty Interaction and Academic Performance.....	76
8 GLM Analysis of Variance Summary for Supportive Campus Environment and Academic Performance.....	78
9 GLM Analysis of Variance Summary for Enriching Educational Experiences and Academic Performance.....	79
10 GLM Analysis of Variance Summary for NSSE Benchmarks and Academic Performance ..	81
11 GLM Analysis of Variance Summary for Academic Challenge, Sex, and Academic Performance.....	83
12 GLM Analysis of Variance Summary for Active and Collaborative Learning, Sex, and Academic Performance.....	84

13	GLM Analysis of Variance Summary for Student-Faculty Interaction, Sex, and Academic Performance	86
14	GLM Analysis of Variance Summary for Supportive Campus Environment, Sex, and Academic Performance	87
15	GLM Analysis of Variance Summary for Enriching Educational Experiences, Sex, and Academic Performance	89
16	GLM Analysis of Variance Summary for NSSE Benchmarks, Sex, and Academic Performance	91
17	GLM Analysis of Variance Summary for Academic Challenge, Classification, and Academic Performance	93
18	GLM Analysis of Variance Summary for Active and Collaborative Learning, Classification, and Academic Performance	95
19	GLM Analysis of Variance Summary for Student-Faculty Interaction, Classification, and Academic Performance	96
20	GLM Analysis of Variance Summary for Supportive Campus Environment, Classification, and Academic Performance	98
21	GLM Analysis of Variance Summary for Enriching Educational Experiences, Classification, and Academic Performance	99
22	GLM Analysis of Variance Summary for NSSE Benchmarks, Classification, and Academic Performance	101

LIST OF FIGURES

1 Five NSSE Benchmarks and Their Relationship to Academic Performance	20
---	----

CHAPTER I

INTRODUCTION

In order for higher education institutions to help their students realize successful educational outcomes, student engagement, student satisfaction, and academic performance are, by far, critical factors that must be considered (Astin, 1993b; Banta, 2002; Bean & Bradley, 1986; Kuh & Hu, 1999; Pascarella & Terenzini, 2005). Researchers have confirmed that student engagement has a positive impact on academic performance, satisfaction with college experience, and graduation rates (Astin, 1984, 1985, 1993a, 1993b; Pascarella & Terenzini, 2005; Tinto, 1987, 1993). Students pursue higher education for a number of reasons, and they hope that higher education will help them improve not only academically but personally and professionally also (Astin, 1977; Bowen, 1977; Kuh, 1993). Boyer (1987) notes that the aim of higher education, since its origin, has been to educate and develop as many, if not all, aspects of its student population. For decades, administrators, educators, and generations of scholarly researchers have incessantly explored the impact of college and the relationship of the collegiate experience to educational outcomes.

From a global perspective, American competitiveness depends upon higher education institutions discovering more creative ways to create a more skilled, educated, and culturally diverse society (Association of American Colleges and Universities, 2002).

For far too long, many higher education institutions in the United States have been perceived negatively by people in society who believe that what the United States and world need from them is not being afforded (Gray, 1997). Educators and policy makers in higher education have an interest with college impact that stems from the need to assist students in achieving their academic and career goals, while at the same time, ensure that transparency and public accountability exist. Today, higher education researchers and policy makers continue to maintain the highest level of interest in the issue of college impact as higher expectations of accountability, cost effectiveness, and positive educational outcomes cause institutions to analyze such issues more carefully (Toutkoushian & Smart, 2001).

Despite the fact that an increasingly higher number of students continue to enroll in higher education institutions throughout the country, successful educational outcomes continue to lag far behind (Astin, 1993a; Kuh, 1993; Pascarella & Terenzini, 2005; Tinto, 1993, Wilson, 2000). When considering this critical issue, student learning is not the only educational outcome that needs to be assessed. Colleges and universities must also concern themselves with student persistence, retention, and educational attainment. For the past several decades, research scholars and policy makers have contributed a vast amount of literature in an effort to ascertain the source of and solution for student attrition rates (Astin 1977, 1993a, 1993b; Bean, 1980, 1985, 1990; Braxton, 2000; Chickering, 1969; Choy, 2002; Pascarella & Terenzini, 1991, 2005; Tinto, 1975, 1987, 1993). Students who do not finish college miss out on a number of educational and economic benefits that are afforded by higher education. Beyond that, high attrition rates may also point to the fact that institutions are not successfully bridging the gap in an effort to ease possible academic and social challenges that their students might face as they transition to college (Bean, 1990; Moody, 1993; Tinto, 1987, 1993; Upcraft & Gardner, 1989).

Unfortunately, students leave college for a number of reasons such as lack of finances, change of career plans, family problems, poor grades, and desire to transfer to another institution (Braxton, 2000). The harsh reality that nearly half of all students who enter college never receive a degree is dismal (Feldman, 1997; Lloyd-Jones, 1992). Beyond that, Tinto (1987) argues that, contrary to popular opinion that most college students dropout because of their inability to perform well academically, a relatively low 15% of all student departures is related to academic dismissal. Strikingly, the majority of students who decide to leave college do so voluntarily; their reasons for leaving are most often related to personal, social, and financial issues (Braxton, 2000; Tinto, 1987). Several authorities in the area of student retention have also pointed out that minority students are far less academically prepared with low achievement levels and tend to have lower persistence and graduation rates (Elmers & Pike, 1997; Szelenyi, 2001).

In fact, African American undergraduate students at historically Black colleges and universities (HBCUs) seem to face greater, perhaps unique, challenges in their quests to obtain a degree from higher education institutions. Hall and Rowan (2001) note that achievement motivators are among the most reliable predictors of success in higher education. Too often, these motivations decline for African American students as a whole due to what transpires in the progressions from elementary to junior high or high school. McWhorter (2000) proposes a theory that he refers to as the “Cult of Anti-Intellectualism,” which he believes infects Black America (p. 125). McWhorter (2000) goes further to note that “the main reason that Black students lag behind all others starting in kindergarten and continuing through postgraduate school is that a wariness of books and learning for learning’s sake as ‘white’ has become ingrained in Black American culture” (p. 125). Beginning in grade school, many African

American students tease and harass their African American peers who show an affinity for school, a number of African American parents have lower expectations as it relates to their children's engagement and performance in school, and there is a certain comfort level that permits low bars being set for African American students in school and society (McWhorter, 2000).

Research scholars and policy makers have come up with a host of recommendations that suggest what is necessary for higher education to improve. Regardless of the outlook that various stakeholders have with respect to higher education, the level of performance of a significant number of students is mediocre, an inordinate number of students are failing to complete college, and far too many students are having an unpleasant college experience (Association of American Colleges and Universities, 2002). To combat these issues, a number of research scholars have made the following recommendations for higher education: focus on the use of various assessment tools in order to determine their students' academic and developmental gains (Astin, 1991); promote values, make student learning a priority, and develop lifelong, global thinkers (Wingspread Group on Higher Education, 1993); devote more resources in order to promote scholarship, particularly in the arts, science, and literature (Kuh, 1999); change the instructional focus from one that is currently center around teaching to one that is centered around learning (Barr & Tagg, 1995; Huba & Freed, 2000); evaluate the quality of the institution by examining how successful it is in terms of its response to the needs of the general public as well as the global society (Shapiro, 1997); and focus more resources on programs that are centered around helping students adjust during their first year in an effort to improve student persistence as well as academic and social development in the first year (Braxton, 2000; Gardner, 2001; Upcraft & Gardner, 1989).

Various process indicators that measure student engagement have emerged as a promising source of evidence of student success and institutional quality (Kuh, 2001a; Kuh, Pace, & Vesper, 1997). Although education can be viewed as a process and a product, assessments in higher education have focused customarily on products such as graduation rates, grades, graduate school exam scores, career placements, and so on (Pace, 1984). These various outcome data measure what students have learned but fail to convey information about how they got there. Even with abundant evidence of educational outcomes, higher education institutions still need to know what programs, processes, activities, and student efforts produced those outcomes (Banta, 2002; Kuh et al., 1997). Understanding how student- and institution-driven engagement are related to desired student outcomes will guide higher education institutions as they think about how and where they should exert their influence. Problems related to this challenge have included the need for better and more responsive institutional practices, as well as better information about the changing demographic of students.

Realizing these challenges, Pascarella and Terenzini (1998) forewarned researchers to be cognizant of these new challenges by acknowledging the new wave of students entering the academy, realizing the danger in overestimating public support, and understanding the harm in underestimating the desire to be accounted for. Research scholars have concluded that there are a number of student characteristics and environmental measures that positively relate to particular student learning and educational outcomes (Astin, 1977, 1993b; Pascarella & Terenzini, 1991; Terenzini, Lorang, & Pascarella, 1981). In particular, academic preparation, level of development, living on-campus, socio-economic background, and parents' level of education have all been determined to be critical influences with regard to college impact (Astin, 1993b; Pascarella & Terenzini, 1991). From the enormity of evidence, research scholars have

collectively confirmed that what happens to students while they are in college does indeed have a significant impact on their educational outcomes. In fact, the benefits and educational outcomes connected with student engagement have been reliably investigated and well-documented.

Beyond that, there is a need for more ongoing, applied research studies to understand specific factors that are related to college impact on African American students enrolled at HBCUs. College impact is an important issue of concern in higher education because it has significant bearing on institutional interventions not only to increase and retain student enrollment but also to create institutional programs, policies, and services that are effective, student-centered, centralized, and efficient. Without a doubt, HBCUs are connected to these issues. Sherman, Giles, and Williams-Green (1994) note, “It appears that while research implications may be transferable from one institution to another, specific retention programs may not be transferable” (p. 176). Consequently, unique campus characteristics and differing institutional goals require the development of situation-specific retention programs. One might argue that this notion of situation-specific retention programs can be justifiably applied to the various college impact variables, specifically related to student engagement programs and environmental factors, which influence various educational outcomes.

Statement of the Problem

Today’s growing demand for accountability in higher education mandates a critical investigation into the determinants of successful educational outcomes for college students. Many colleges and universities are grappling with the ever-increasing challenge of understanding the impact that college has on students. The factors that impact educational outcomes are important to identify because they can give direction to those in higher education who design programs and policies aimed at improving educational outcomes of African American students,

particularly males, as well as all other students. Understanding how students devote time and energy in the institution and understanding how institutions can facilitate support for students' learning can help prospective students, policy makers, and institutional leaders make decisions, improve student learning outcomes, and improve the quality of practices in higher education.

As stated earlier, a great deal of research has determined that student engagement has a positive impact on academic performance, satisfaction with college, and graduation rates. Unfortunately, only a modest amount of research has explored the relationship between student engagement and academic performance at HBCUs. The present research study helped to add to the literature by exploring the relationship between students' various engagement patterns, which include student engagement (academic and social), quality of effort put forth by students, use of campus services, and other in- and out-of-class experiences, and their impact on academic performance.

Beyond that, existing impact research has been conducted primarily based upon the experiences of White, traditional-aged, full-time students attending four-year, residential institutions (Kuh, 1993; Pace, 1990; Pascarella & Terenzini, 1991; Terenzini, Pascarella, & Blimling, 1996; Watson & Kuh, 1996). As a result, there is a lack of research that explores the impact of college on African American students attending HBCUs. Unquestionably, this leaves a considerable number of undergraduate students understudied. In their book, which chronicles the past thirty years of research on college impact, Pascarella and Terenzini (2005) appeal for increased consideration of today's diverse student body by stating that "the increased heterogeneity of American undergraduates, particularly in race or ethnicity, spurred – indeed required – closer attention to what we have called conditional effects, or the possibility that any given college experience may have a different effect on different kinds of students" (p. 626).

Without a doubt, the students to whom they refer include African American students. In addition to this call to action, Watson and Kuh (1996) also appealed to research scholars to focus their attention on relationships between ethnic composition, student involvement, and educational gains.

As HBCUs attempt to improve persistent educational disparities among African American students, a better understanding is needed of the factors that influence the quality of the undergraduate experience of these students in order to inform best practices that will increase the chances of their educational success. Understanding the critical factors that might predispose African American students to become actively engaged in their college experience and to obtain their educational objectives would equip institutions of higher education to better serve and educate these students. In order to improve educational outcomes for students who attend HBCUs, ongoing studies must be conducted in order to provide specific recommendations to assist in creating a more comprehensive and integrated approach to learning and student development that will lead to the advancement of situation- and institution-specific programs. To further validate the need for additional research studies focusing on single institutions, Braxton, McKinney, and Reynolds (2006) note, "... for each college and university to understand and reduce its own rates of student departure, each individual college and university should conduct studies of sufficient methodological and statistical rigor" (p. 30). Beyond that, Kuh, Kinzie, Buckley, Bridges, and Hayek (2007) point out that "single institution and consortia studies are needed to learn more about interventions that are effective with different groups of students at different points in time" (p. 103).

With this intention, the utilization of the results of this study should help institutional officials study current and future students' needs and make appropriate organizational and programmatic changes to enhance the educational outcomes of African American students who attend HBCUs.

Statement of the Purpose

The unique experiences of African American students who attend HBCUs require further exploration, with a detailed focus on their relationship to educational outcomes that are usually linked with academic success in college. The rationale for the study of African American students at an historically black higher education institution in the Southeast comes from the researcher's past experiences as a student, instructor, mentor, and researcher at both private and public HBCUs. The number of barriers that many of these students face is surreal, and the positive and/or negative impact that HBCUs have on the educational outcomes of their students warrants further exploration.

The purpose of this study was to investigate the relationship between the patterns of engagement behavior and self-reported academic performance of male and female first-year freshman, sophomore, junior, and senior undergraduate students at a public historically Black higher education institution in the Southeast.

Research Questions

The following research questions guided this study:

1. Is there a statistically significant relationship between undergraduate students' perceived level of academic challenge and self-reported academic performance?
2. Is there a statistically significant relationship between undergraduate students' perceived level of active and collaborative learning and academic performance?

3. Is there a statistically significant relationship between undergraduate students' perceived level of student-faculty interactions and academic performance?
4. Is there a statistically significant relationship between undergraduate students' perceived level of supportive campus environment and academic performance?
5. Is there a statistically significant relationship between undergraduate students' perceived level of enriching educational experiences and academic performance?
6. Is there a statistically significant relationship between undergraduate students' patterns of engagement behavior and academic performance?
7. Is there a statistically significant difference between male and female students' perceived level of academic challenge and academic performance?
8. Is there a statistically significant difference between male and female students' perceived level of active and collaborative learning and academic performance?
9. Is there a statistically significant difference between male and female students' perceived level of student-faculty interactions and academic performance?
10. Is there a statistically significant difference between male and female students' perceived level of supportive campus environment and academic performance?
11. Is there a statistically significant difference between male and female students' perceived level of enriching educational experiences and academic performance?
12. Is there a statistically significant relationship between male and female students' patterns of engagement behavior and academic performance?
13. Is there a significant difference between first-year freshman, sophomore, junior, and senior students' perceived level of academic challenge and academic performance?

14. Is there a significant difference between first-year freshman, sophomore, junior, and senior students' perceived level of active and collaborative learning and academic performance?
15. Is there a significant difference between first-year freshman, sophomore, junior, and senior students' perceived level of student-faculty interactions and academic performance?
16. Is there a significant difference between first-year freshman, sophomore, junior, and senior students' perceived level of supportive campus environment and academic performance?
17. Is there a significant difference between first-year freshman, sophomore, junior, and senior students' perceived level of enriching educational experiences and academic performance?
18. Is there a statistically significant relationship between first-year freshman, sophomore, junior, and senior students' patterns of engagement behavior and academic performance?

Definition of Related Terms

For the purpose of this study, the terms listed below have the following operationalized definitions:

Academic Integration: Grade performance in accordance with the academic standards of the institution and the student's "identification with the norms of the academic system" (Tinto, 1975, p. 194). This also relates to academic performance, involvement with curriculum, and contact with faculty and staff (Tinto, 1993).

Academic Performance: Academic performance is a broad measure which can include grade point average (GPA), standardized test scores, graduation rates, honors or ranks. This study will focus on undergraduate students' self-reported academic performance, which will be based on the following letter grades: A, A-, B+, B, B-, C+, C, and C- or below, as indicated on the National Survey of Student Engagement (NSSE) (Astin, 1977; Pascarella & Terenzini, 2005).

Academic Preparedness: Knowledge, cognitive skills, and habits of mind essential to post-secondary success, which are often developed during a student's high school years and are sometimes shaped by other variables, such as educational and/or social background, motivational factors, and socioeconomic status (Adelman, 1999, 2006; Conley, 2006).

African American: An American citizen whose cultural base and ancestral connection is found on the continent of Africa. Historically, the ancestors of African Americans were brought to North America from the continent of Africa and were subjected to legal enslavement until 1865. This fact distinguishes African Americans from other hyphenated American groups that either immigrated or migrated to America or who were originally on the continent of North America. This term is used interchangeably with the term "Black" (Moore & Carpenter, 1985).

Attrition: An indicator or measure of an institution's holding power or inability to keep students enrolled until they graduate. This term also refers to the reduction in student population as a result of transfers or dropouts. This term is used interchangeably with "dropout" and "student departure" (Pascarella & Terenzini, 1991, 2005; Tinto, 1975, 1987, 1993).

College Impact: This term refers to the effects that colleges and universities have on educational outcomes (Astin, 1970, 1985, 1993a, 1993b).

Dropout: A student who voluntary or involuntary leaves a higher education institution for at least one semester and does not return (Tinto, 1975, 1987, 1993).

Engagement: The time and effort that students put into activities and practices that lead to outcomes that constitute student success, as well as the ways in which institutions of higher education foster success (Kuh, Kinzie, Schuh, & Whitt, 2005a). For this study, engagement is defined as students' connection to their college, both academic and extracurricular. It includes participation in clubs or organizations; attending campus activities; using student services; frequent and educationally purposeful interactions with faculty, administration, and peers; demanding coursework; inclusive environments; library and technology usage; working; deep learning; amount of time spent reading and writing; and other involvement on campus that is encouraged by the institution in an effort to reach desired educational outcomes. In addition, the term engagement includes students' perceptions of the level of supportive learning environments facilitated in institutions such as the students' perception regarding academic and social support from the institution (Astin, 1984; Gonyea, 2005; Kuh, 2006; Pace, 1988).

Graduation Rate: The percentage of students in a given entering cohort who graduated within a specified period of time (Astin, 1993a, 1993b; Bean, 1990; Braxton, 2000).

Historically Black College or University (HBCU): These are institutions of higher education dating back more than 150 years, when emancipation occurred. These institutions were established after the American Civil War and prior to 1964 with the mission of giving primarily African Americans an opportunity to receive separate, advanced training and educational certification (Ehrenberg & Rothstein, 1994; Jackson, 2001; Jackson & Nunn, 2003; Roebuck & Murty, 1993).

Involvement: “The physical and psychological energy that a student devotes to the academic experience” (Astin, 1984, p. 297).

National Survey of Student Engagement: This survey provides colleges and universities with valuable information about students’ views of collegiate quality by annually administering a specially designed survey, *The College Student Report*. This instrument is widely used in the United States, and survey results provide indicators of quality for undergraduate education (Kuh, Kinzi, Schuh, & Witt, 2005b).

Persistence: This term refers to the action of a student who remains in college without interruption until he or she completes an academic degree (Pascarella & Terenzini, 1983).

Predominately White Institution (PWI): An institution of higher education in which the student body is historically and predominately White.

Retention: This term refers to the percentage of first-time bachelor’s degree-seeking undergraduates from the previous fall term/semester who enroll in the next fall term/semester at the same institution. It can also be defined as a higher education institution’s ability to retain students who are successfully progressing toward degree attainment (Braxton, 2000; Pascarella & Terenzini, 1983, 1991, 2005; Tinto, 1987, 1993).

Social Integration: Interaction with and the successful incorporation of students with various social systems of the institution. This relates to involvement with peers, campus activities, and involvement in extracurricular activities (Pascarella & Terenzini, 1991, 2005; Tinto, 1993).

Student Outcomes: Student outcomes are the aspects of students' development that higher education institutions influence or attempt to influence. Specifically, outcomes refer to measures of student achievements, knowledge, skills, values, attitudes, aspirations, interests, and daily activities (Astin, 1977). Student outcomes include "the ways an individual changes during the time in which he or she attends a higher education institution, where the changes or developments are results of that institution's attendance" (Pascarella & Terenzini, 2005, p. 9).

Undergraduate Student: Undergraduate students are those in post-secondary education who have not yet earned a bachelor's degree. They are in this group based upon enrollment status.

CHAPTER II

REVIEW OF RELATED LITERATURE

Higher education literature has a number of theoretical frameworks and relevant research in which the study of college student engagement may be conducted. Numerous studies have tackled tough questions about college impact, both conceptually and empirically. The literature review for this study focused on three areas: (1) the theoretical framework for this study; (2) the impact of college on students, with reference to various educational outcomes relative to specific points of influence related to student engagement, the quality of effort put forth by students, institutional characteristics, and students' place of residence while in college; and (3) a brief history of the African American experience in higher education.

Theoretical Framework

One theoretical perspective that provides an appropriate framework for the investigation of college student engagement is based on the conceptual framework of Kuh (n.d., 1981, 1993, 1999, 2001, and 2006) and Kuh et al. (2005a, 2005b). First and foremost, as a result of the conceptual overlap that exists throughout the student involvement, engagement, and persistence literature, it is critically important to bear in mind that enormous difficulties exist when one attempts to interpret and explain these theoretical models, both individually and collectively. However, the most important fact is that the theoretical models that are discussed in this chapter reflect the belief that academic and social development transpires through students being actively engaged in various campus environments with administrators, faculty, staff, and peers.

There is a substantial amount of literature that analyzes the degree to which student engagement impacts student outcomes. Many researchers have put forward the notion that student engagement with peers, with faculty (informally), and with the institution facilitates success (Astin, 1984, 1993a; Bowen, 1977; Chickering, 1969; Pascarella, 1980; Pascarella & Terenzini, 2005; Thomas & Chickering, 1984; Tinto, 1993). Kuh et al. (2005a) have gone further to note that student engagement is a critical factor for student success. Beyond that, Zhou and Kuh (2004) assert that student engagement is positively related to student self-reported outcomes and overall satisfaction with college. These researchers have made the connection between college students' experiences and outcomes. Student engagement can be characterized by the time and energy that students devote to educationally purposeful activities, as well as the students' perceptions and level of supportive learning environment facilitated in institutions (Astin, 1984; Gonyea, 2005; Kuh, 2006; Pace, 1988).

Other research on student engagement has consistently noted that the degree to which a student is engaged in academic and academic-related tasks and activities positively impacts academic development (Kuh & Hu, 1999; Watson & Kuh, 1996). After conducting several extensive interviews with students, Kuh (1993) discovered that students' experiences beyond the classroom make "substantial contributions to student learning and personal development" (p. 300). For the majority of the seniors surveyed, the learning and development outcomes related to confidence, academic skills, vocational competence, altruism, critical thinking ability, aesthetic appreciation, sense of purpose, social and practical competence, autonomy, and knowledge acquisition were significantly increased by out-of-class experiences (Kuh, 1993).

In fact, Hu and Kuh (2002) point out that “the most important factor in student learning and personal development during college . . . that contributes directly to desired outcomes” is the level of student engagement in activities both inside and outside of the classroom or the quality of effort put forth therein (p. 555). Other studies also highlight the significance of the level of student engagement on the measure of a student’s academic ability or achievement (Astin, 1985; Boyer, 1987; Pace, 1974). These studies reveal that the higher a student’s level of engagement in academic and academic-related activities, the more knowledge acquisition and skill development that student has.

Similarly, Kuh (2006) purports that “perhaps the best known set of engagement indicators is the *Seven Principles of Good Practice in Undergraduate Education* (Chickering & Gamson, 1987)” (p. 1). These principles include the following: (1) contact between students and faculty, (2) peer cooperation, (3) active learning, (4) prompt feedback from professors, (5) time engaged on task, (6) high expectations for tasks, and (7) respect for diverse talents and ways of learning (Kuh, 2006, p. 1). Beyond that, Umbach and Wawrzynski (2005) discovered that college students engage and learn significantly more when faculty use learning strategies that center around active, collaborative, and higher-order thinking activities.

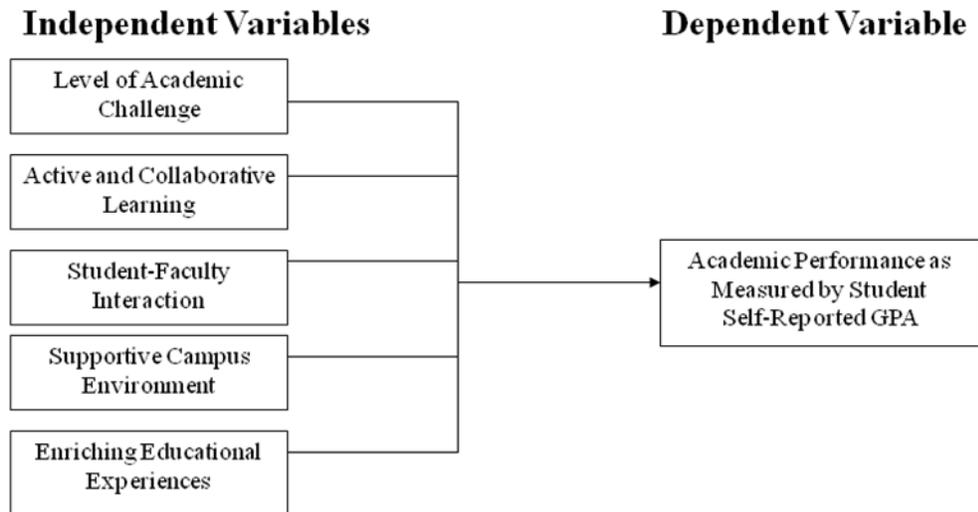
By the same token, based upon educational psychologist Lev Vygotsky’s theoretical framework that reveals how social interaction impacts cognitive development, Samaras (2000) notes that “students gain insight from their intellectual and affective interactions with their peers, cooperative teachers, and professors” (p. 23). Furthermore, Braxton (2000) maintains a similar belief that students involved in active learning activities in the classroom have better social integration skills, retention, and institutional commitment. Moreover, Tinto (1987, 1993) asserts that active learning is positively associated with students’ level of academic integration.

On the whole, these scholars have determined that the most critical factor that influences student engagement is the amount of active and collaborative learning.

Undoubtedly, there is a host of research that has reliably confirmed that recurring and significant student-faculty interaction accounts for the development of students' competence and engagement in learning (Chickering & Reisser, 1993; Kuh et al., 2005a; Pascarella & Terenzini, 1991, 2005; Tinto, 1987, 1993). Chickering and Reisser (1993) note four important elements that are present in positive student-faculty relationships. These elements are "accessibility, authenticity, knowledge, and an ability to communicate with students" (p. 335). In the same way, Kuh et al. (2005a) propose that "meaningful interactions between students and their teachers are essential to high-quality learning experiences" (p. 207). From this collective body of research, a theoretical framework has been developed for this study. The theoretical framework for this study focuses on the independent variables, which include students' level of academic challenge, active and collaborative learning, student-faculty interaction, supportive campus environment, and enriching educational experiences in an effort to determine how they might relate to the dependent variable as measured by students' self-reported academic performance. The theoretical framework for this study is illustrated in *Figure 1*.

Figure 1

Five NSSE Benchmarks and Their Relationship to Academic Performance



College Impact on Various Student Outcomes

With the increasing educational outcomes realized by students and society, a number of taxonomies of outcomes have been developed throughout the years in an effort to categorize these measures (Astin 1977, 1993a; Bowen, 1977; Chickering, 1969; Pascarella & Terenzini, 1983, 2005; Tinto, 1975, 1993). With regard to student outcomes, Astin (1993a) notes that “students outcomes refer to those aspects of the student’s development that the institution either does influence or attempts to influence through its educational programs and practices” (p. 38). Moreover, Kuh (1981) defines outcomes as “measures of cognitive and affective changes associated with college attendance” (p. 10). Astin’s (1993a) student involvement theory stems from his own research interests involving student retention and is along the lines of Pace’s (1984) research on student effort. Both of these researchers’ work with student involvement theory emphasizes the impact of the influence that the college environment has on student

development, while at the same time, makes the connection between institutional effectiveness and increased student involvement.

With regard to Astin's (1993a) I-E-O model, the *input* component is linked to the student's pre-entry characteristics such as background, personal, and educational characteristics that a student might bring with him or her to college. More specifically, some of these characteristics might include aspirations, standardized test scores, talents, parents' educational level, socio-economic status, pre-college social and academic achievement, as well as a plethora of other demographic variables such as gender, ethnicity or race, and age. Astin (1993a) has divided these input measures into the two categories of fixed elements as well as those characteristics that change over time. The category that is identified as fixed student elements might also be referred to as the demographic characteristics of students that were mentioned above. While in college, these students' demographic characteristics will not change over time. However, Astin (1993a) goes on further to note that even though a student's age changes with time, his or her age remains invariant in comparison to others.

Astin (1993a) notes that the second category can be broken down into "six subcategories: cognitive functioning, aspirations and expectations, self-ratings, values and attitudes, behavioral patterns, and educational background characteristics" (p. 70). Inputs are believed to shape outcomes directly and indirectly based upon a student's engagement patterns (Astin, 1984). Pascarella and Terenzini (2005) note that Astin does recognize that students are equally responsible for active involvement, but Astin highlights the fact that the institution plays a critical role in offering students a host of opportunities that will allow for them to fully engage in academic and social activities.

It is quite apparent that simply analyzing the various changes that students undergo throughout their college experience is inadequate. With that being said, the *environment* component of the I-E-O model refers to the range of educational experiences that students encounter while in college. This includes various aspects of the institution that can have an effect on students such as administrative and institutional policies and practices, curricular issues, facilities, affiliations with peers, teaching styles, and institutional characteristics. Astin (1993a) has categorized the various environmental measures into two separate groups: between-institution measures and within institution measures. Between-institution measures refer to “the characteristics of the total institution which can, in theory at least, affect all students at the institution” (p. 85). Various structural characteristics include the following: selectivity, type, enrollment, proportion of graduates, tuition, student-faculty ratio, proportion of minority students, and proportion of graduate students (Astin, 1993a).

On the other hand, within-institution measures capture “particular educational experiences within the institution to which only some of the students at a given institution are exposed” (Astin, 1993a, p. 85). These within-college measures “cut across the formal organizational subunits within the institution” (Astin, 1993a, p. 92). A number of these environmental experiences include “utilization of campus services..., the amount of time devoted to various activities (studying, outside reading, recreation, sleeping, etc.), the type of counseling and advisement received, participation in special educational programs..., and participation in student organizations and other campus activities” (Astin, 1993a, p. 92). The *environment* component specifically looks at the variables mentioned above that impact student development in an effort to uncover why and how students change throughout their college experience.

The final component of the I-E-O model is *outcome*, the preferred results of college. In essence, *outcome* can be described as the characteristics of the student after he or she has been exposed to the college environment. Without a doubt, college outcomes are quite varied and highly complex. Many researchers focus on the obvious and most straight-forward to measure such as grade point average, retention and graduation rates, rather than more complex outcomes related to student development such as self-concept, moral development, and cognitive ability (Upcraft & Schuh, 1996). Astin (1991) does caution against higher education institutions taking credit for student outcomes that are positive, yet unexplored, when they admit students who have the highest standardized test scores and have benefited from educational and demographic privileges for most, if not all, of their lives. He goes on to point out that outcome measures cannot be a significant, determining factor in terms of how higher education institutions evaluate their quality; however, outcome measures must be considered in conjunction with inputs in an effort for higher education officials to estimate the amount that students learn, develop, and mature as they move throughout their college career.

When considering the preferred effects of college, higher education administrators and policy-makers must bear in mind the level of intricacy with respect to the various possible student outcomes. Astin's (1984) theory of student involvement has concluded that the more involved a student is in his or her college experience the more likely that student's learning, personal development, and persistence will increase.

Astin's model has served as a catalyst for the development of subsequent theoretical models in studies of student involvement. In examining the impact of student involvement on student outcomes at institutions of higher education, Astin (1984) offers a theory that emphasizes behavioral aspects of student involvement, not merely what a student thinks or feels. Astin

(1984) presents five basic tenets to help guide his theoretical model: (1) involvement requires the investment of psychological energy; (2) involvement is a continuous concept; different students will invest varying amounts of energy in “objects” such as tasks, people, or activities; (3) involvement has both quantitative and qualitative features; (4) the amount of learning or development is directly proportional to the quality and quantity of involvement; and (5) educational effectiveness of any policy or practice is related to its capacity to induce student involvement (p. 135-136). Simply put, Astin (1984) refers to student involvement as “the amount of physical and psychological energy that the student devotes to the academic experience” (p. 247). The bottom line, Astin (1984) notes, is that students learn by becoming involved.

The underlying goal of college impact is to assess the college environment on student outputs (Astin, 1970). One of the advantages of the I-E-O model is its notion of the relationship between student inputs, outputs, and the college environment, which is important in discovering the predictors of student outcomes. Using this model, higher education institutions can ascertain the extent of development and change that their students experience by simply comparing the input characteristics to the relevant outcome characteristics, allowing for the environment to serve as the intervening factor between the input and outcome components. One might look at involvement as occurring on a continuum, being measured qualitatively and quantitatively, and having a direct impact on the extent to which student learning and development is maximized.

Statistically, the I-E-O model affords researchers the ability to correct for input differences when examining the effects of different environments on educational outcomes by entering the groups of variables as blocks according to proper temporal sequencing (Astin, 1993a).

Having knowledge of these various interactions between college impact variables, Astin (1993b) advises the ordering of the independent variables into blocks as indicated: (1) input (entering freshmen) characteristics, (2) “bridge” (input-environment) variables, (3) between-college environmental variables (institutional characteristics), and (4) involvement (within-college environmental variables) and other outcome variables (p. 91). Pascarella (1985) proposed a theoretical model that confirmed a direct relationship between institutional characteristics to the college environment, as well as from the college environment to the within-college characteristics. In addition, Astin (1993b) identifies what he refers to as a bridge measure, which is a type of bridge characteristic that can be regarded as an input and an environmental measure. These bridge characteristics can be considered input characteristics, in the sense that they reflect the student’s personal preference and financial situation at the point of entry to college, but they can also be considered environmental characteristics, in the sense that the student’s subsequent development in college can be affected by both the type and amount of financial aid received, as well as by the student’s chosen major (p. 90). Additional bridge measures include place of residence, part-time or full-time status, and other forms of involvement ascertained at the time of entry into the college experience (Astin, 1993a, 1993b).

Essentially, student engagement is linked to student success with regard to academic performance, as well as engagement in out-of-class activities (Astin, 1993a; Koljatic & Kuh, 2001; Kuh, 2001). Unfortunately, this process is not as simple as it seems on the surface. Astin (1993a) cautions that specifying the relevant inputs, outputs, and environmental experiences might be rather problematic. Gonyea (2005) goes further to suggest that the I-E-O model demonstrates a certain level of inadequacy with respect to the complex interrelationships that exist among the various input, environment, and outcome variables.

Student Engagement

Many scholars have developed taxonomies that propose the desired student outcomes of college such as student voices (Kuh, 1993), psychology (Chickering, 1969; Chickering & Reisser, 1993; Bowen, 1977), and assessment and institutional improvement (Ewell, 1984). Astin (1993a) has noted that there are numerous college student outcomes, which can be categorized as either cognitive or non-cognitive. He refers to non-cognitive outcomes as “affective” (Astin, 1993a). These affective outcomes consist of behavior, values, and attitudes. Astin (1993a) refers to cognitive outcomes as “intellective.” These intellective outcomes consist of reasoning skills and knowledge of subject fields.

When attempting to measure a student’s cognitive performance, one method that is used, in most cases, assesses a student’s academic performance by looking at his or her grade point average (GPA). While it appears quite evident that a student’s GPA does not precisely measure his or her cognitive ability, GPA is one of the most extensively used measures of academic performance (Pascarella & Terenzini, 1991). Without a doubt, grades are a key factor in higher education. Pascarella and Terenzini (1991) note that grades most often reflect learning and are our most readily available measure of learning. Beyond that, by the end of the first year of college, grades have been strongly related to student persistence and proven to be the most critical factor in the decision to drop out of college (Bean, 1980; Choy, 2002; Pascarella & Chapman, 1983; Pascarella, Smart, & Ethington, 1986; Tinto, 1975).

Respectively, there are a number of scholars who disagree with the validity of grades as a measure of learning and are cautious of the overemphasis on their importance (Pascarella & Terenzini, 1991). Others have gone even further to note that the GPA is not measured in a standardized way, and therefore, is not reliable when used between instructors, departments, and

institutions (Miller, Imrie, & Cox, 1998). Pascarella and Terenzini (1991) suggest that grades are not solely dependent on a student's ability; however, grades can be influenced by a number of other factors such as personal motivation, organization, study habits, and quality of effort.

Most importantly, grades have been determined to be a measure of a student's successful academic integration into the college campus and reveal the outcomes of academic achievement, as well as the product of a student's work habits and attitudes (Pascarella & Terenzini, 1991; Tinto, 1987, 1993). In fact, when assessing the outcomes of students of color, the extent of their predisposition to college (e.g., college preparedness or social capital) is noteworthy (Astin, 1993a). While many scholars make a case that college environment influences students' GPAs, for a number of students, cultural expectations are important in their aspiration for a high GPA as an indicator their scholastic success. In the I-E-O model, Astin (1984) identifies such an aspiration as a student's input, mediated by the college environment with academic success as a possible outcome.

There is relatively mixed evidence that concludes the extent to which GPA is affected by student engagement. For example, with regard to impact that students' out-of-class experiences have on their grades, Pike (1989) discovered that student participation in cultural activities is unrelated to grades. Moreover, earlier research confirms mixed results about the effect of student-faculty interaction (Bean & Kuh, 1984; Pascarella, 1980) and peer interaction (Aitken, 1982; Bean & Bradley, 1986) on grades. After controlling for student background and environmental characteristics, Astin (1993b) notes the following engagement variables with a net effect on GPA: (1) tutoring other students, (2) hours per week spent studying or doing homework, (3) participating in an internship or study abroad, (4) hours per week spent talking with faculty outside of class, (5) giving presentations in class, (6) enrolling in interdisciplinary

courses, and (7) getting married. When analyzing some of the involvement effects, Astin (1993b) does note that prudence should be exercised. Because of temporal ambiguity, a number of the involvement effects may be caused by the student's GPA rather than vice-versa. For instance, students who do well academically might be more likely to tutor other students and talk with faculty members outside of class. In the same way, poor grades earned in the beginning of a course may possibly drive the negative association with receiving tutoring.

One critically researched outcome of the first-year experience is the improvement of intellectual skills (Cuseo, 2000; Gardner, Barefoot, & Swing, 2001; Moody, 1993). The *College Student Experiences Questionnaire* accounts for a number of these intellectual skills by having students self-report regular academic tasks such as using computers and information technology, critical thinking, writing effectively, public speaking, and analyzing quantitative problems (Gonyea, Kish, Kuh, Muthiah, & Thomas, 2003). To illustrate, Moody (1993) conducted a study of about 336 first-year students and found that students' inherent tendencies toward learning and the approach they utilized (acquired skills) affect learning. When considering the impact of variables related to communication skills, Astin (1993b) discovered that there was a negative correlation with regard to students taking remedial courses and receiving tutorial services.

After controlling for pre-college and campus environment variables, Terenzini (1995) identified several measures of student engagement that have a positive correlation with the ability to think critically such as the number of courses that emphasize writing skills, discussing ethnic and racial issues, interdisciplinary courses, taking science and history, and having class papers reviewed by instructors. Terenzini (1995) went further to conclude that an overall emphasis on writing, presentations, debates and discussions across the curriculum would probably lead to more positive outcomes for the development of critical thinking skills. In fact, a

significant number of similar items related to involvement were a positive contribution to Astin's (1991) Overall Academic Development factor which involves a student's ability to think critically, to possess knowledge of a particular field, to possess general knowledge, to possess analytical and problem-solving skills, and to possess writing skills. Beyond that, Pascarella and Terenzini (2005) report that in-class and out-of-class experiences, which include the number of hours that students spend studying and the number of non-assigned textbooks they read, show evidence of increasing critical thinking skills.

In his student development model, Chickering (1969) illustrates how higher education institutions can effectively educate the whole student. Chickering (1969) presents seven vectors to guide his model and provide conceptual lenses through which higher education administrators, faculty and staff can monitor their students, as well as their students' courses and programs more intentionally: (1) developing competence, (2) managing emotions, (3) moving through autonomy toward interdependence, (4) developing mature interpersonal relationships, (5) establishing identity, (6) developing purpose, and (7) developing integrity. Chickering and Reisser (1993) assert that one of the important vectors that students need to attain is that of developing competence. They categorize competence in three domains: (a) intellectual competence, (b) physical and manual competence, and (c) interpersonal competence. Chickering and Reisser (1993) describe the three domains of competence as follows:

Intellectual competence involves using the mind's skills to comprehend, reflect, analyze, synthesize, and interpret the most important information, developing the ability to reason, solve problems, weigh evidence, think originally, and engage in active learning. Physical and manual competence involves using the body as a healthy vehicle for high performance, self-expression, and creativity. Interpersonal competence is skill in communicating and collaborating with others. (pp. 53-54)

The seven vectors can be used by higher education institutions as a framework for change. In an effort to develop and record what, at the present time, were considered commonly accepted goals of higher education, Bowen (1977) proposed a detailed taxonomy cataloging what were considered chief responsibilities of higher education institutions. These goals are divided into two categories: goals for individual students and goals for society. Having significant relevance to this study, the three groups that represent goals for individual students are (a) cognitive learning (e.g., verbal skills, intellectual tolerance, creativeness, lifelong learning), (b) emotional and moral development (e.g., personal self-discovery, psychological well-being, values and morals, and religious interest), and (c) practical competence (e.g., citizenship, economic productivity, and health). With a focus on assessment and institutional improvement, Ewell (1984) offers a taxonomy of outcomes that consists of the following four elements: (a) knowledge, skills, attitudes/values, and relationships with society; (b) meaningful use of assessment data to improve curricula; (c) instruction; and (d) management.

Pascarella and Terenzini (2005) have compiled the most current and exhaustive synthesis of college student outcomes. With regard to college student success, a number of impact models emphasize the influence of institutional and student characteristics on learning and personal development (Pascarella, 1985; Pascarella & Terenzini, 2005; Tinto, 1993; Weidman, 1989). As noted earlier, a significant amount of research in the field draws on Astin's (1970) I-E-O model to illustrate college impact on students. Pascarella and Terenzini (2005) report that students' academic involvement has a statistically significant impact on their cognitive development. Pascarella and Terenzini (2005) go further to note that academic involvement, both in- and out-of-class, has positive effects on self-reported gains in writing and thinking skills and in understanding the arts and humanities. In addition, the amount of voluntary time and effort that

a student devotes to non-assigned reading positively influences standardized measures of reading comprehension, writing skills, and science reasoning (Pascarella & Terenzini, 2005, p. 120).

Collecting data from extensive interviews with seniors from twelve institutions, Kuh (1993) identified fourteen categories of learning and personal development that students attributed to their in-class and out-of-class experiences. The categories are as follows:

1. Self-awareness (includes self-examination and spirituality);
2. Autonomy and self-directedness (includes decision-making, taking initiative and responsibility for one's personal affairs and learning, and movement from dependent to independent thinking);
3. Confidence and self-worth (includes self-esteem and self-respect);
4. Altruism (includes interest in the welfare of others, awareness of and empathy and respect for the needs of others, and tolerance and acceptance of people from racial, ethnic, cultural, and religious backgrounds that are different from one's own);
5. Reflective thought (includes critical thinking, ability to synthesize information and experiences, seeing connections between thinking and experiences, seeing different points of view, and examining one's own thinking);
6. Social competence (includes capacity for intimacy, working with others, teamwork, leadership, dealing with others, assertiveness, flexibility, public speaking, communication, and patience);
7. Practical competence (includes organizational skills such as time management, budgeting, and dealing with systems and bureaucracies);
8. Knowledge acquisition (includes academic and course-related learning and content mastery);

9. Academic skills (includes learning how to study, write, and conduct independent research);
10. Application of knowledge (includes relating theory to practice and using skills learned in the classroom, laboratory, library, etc.);
11. Esthetic appreciation (includes appreciation for cultural matters as in the arts, literature, theatre, and esthetic qualities of nature);
12. Vocational competence (includes acquiring attitudes, behaviors, and skills related to post-college employment);
13. Sense of purpose (includes clarifying life goals and the work one will do after college, sometimes by discovering what one is not well suited to do); and
14. Other concepts (includes notions of personal growth and change in physical features, and growing apart from a spouse)

From these interviews, Kuh (1993) chronicles a number of the students' in-class and out-of-class experiences that led to their development in the aforementioned categories. For example, with regard to self-awareness, autonomy, confidence, social competence, and sense of purpose, one student from UC Davis noted that she, as well as others, had noticed that she was more mature. Another student from Mount Holyoke attributes attending a women's college to helping her be accountable for who she is. In addition, a Stanford woman expressed that she was very insecure when she first arrived to campus, but now she has developed a higher level of confidence and skill in meeting others. Moreover, with respect to developing personal competence, a student athlete from Iowa State mentioned that he felt like he had to prove to himself and others that he could make it. As a result, he worked even harder to succeed.

Without a doubt, a substantial amount of research supports in- and out-of-class experiences having a significant influence on students' academic and intellectual development; however, it is imperative to take note of the fact that not all experiences have positive influences on student outcomes. Terenzini et al. (1996) reveal a rather striking finding:

Compared to their peers, the students who show smaller gains on various measures of academic, intellectual, or cognitive growth are those who live at home while in college, belong to a fraternity or sorority, participate in men's football or basketball, work full-time, spend more hours socializing with friends, or have fewer academically or intellectually related out-of-class encounters with faculty members and other students. (p. 157)

Beyond that, a multitude of research studies support the value of these factors, signifying that these factors are categorically associated with student satisfaction and achievement (Astin, 1984, 1985, 1993a; Bruffee, 1993; Goodsel, Maher, & Tinto, 1992; Johnson, D. W., Johnson, & Smith, 1991; Pike, 1993; and Sorcinello, 1991). In addition, Pascarella and Terenzini (2005) point out that peer-interaction plays a critical role in amount of students' learning by means of collaborative learning, cooperative learning, supplementary instruction, and peer tutoring. That is to say, "Students' social and extracurricular involvements have important implications for what is learned in college" (Pascarella & Terenzini, 2005, p. 120). In addition, Pascarella and Terenzini (1991) maintain that "a large part of the impact of college is determined by the extent and content of one's interactions with major agents of socialization on campus, namely, faculty members and student peers, and the influence on interpersonal interaction with these groups is manifested in intellectual outcomes as well as in changes in attitudes, values, aspirations and a number of psychosocial characteristics" (p. 620).

Undeniably, the faculty has an enormous influence on student progress toward developing higher levels of competence. To illustrate, Chickering and Reisser (1993) point out that "faculty can encourage student development--- as scholars and teachers, mentors, role

models, and skilled listeners” (p. 316). Simply put, competence is cultivated initially by the example of those in teaching or leadership positions, second by the expectations they communicate, and third by the support they offer. Chickering and Reisser (1993) state that “when all three are present and balanced, they have the maximum effect” (p. 317). Also, when student-faculty interactions occur beyond the formal classroom to more informal non-classroom settings, Pascarella and Terenzini (1991) maintain that the educational impact of a college’s faculty is far-reaching. If students have quality interactions with faculty, both inside and outside of the classroom, they can get feedback on their coursework, as well as discuss their current research and career goals with faculty (Pascarella & Terenzini, 1991).

At higher education institutions where students are actively engaged, there are a number of examples of out-of-class student-faculty interactions. These examples of out-of-class interactions are (a) involving personal and career concern and issues, (b) encouraged by the availability of benches or chairs in the hallways or classroom buildings, (c) related to class materials that are associated with cooperative learning or internship, (d) focused on major-related activities, undergraduate research, or undergraduate teaching assistantships, and (e) initiated by faculty when mentoring a potential faculty in their undergraduate years (Chickering & Reisser, 1993, p. 321). Without at doubt, an overabundance of research evidence supports the notion that student-faculty relationships are critical to the improvement of student learning and development (Astin, 1977, 1985, 1993b; Bean, 1985; Bean & Kuh, 1984; Ewell, 1989; Kuh et al., 1991; Lamport, 1993; Pascarella, 1985; Pascarella & Terenzini, 1976, 1979, 1991, 2005; Terenzini, Pascarella, & Bliming, 1996; Terenzini, Springer, Pascarella, & Nora, 1995; Tinto, 1993; Wilson, Gaff, Dienst, Wood, & Bavry, 1975).

Quality of Effort

One critical aspect in college outcomes is the quality of effort that a student exerts regarding his or her education (Pace 1964, 1982). Many earlier college impact models depicted the student as somewhat passive in nature as he or she was shaped by the college environment. Engrossed in the quality of effort concept, a number of research scholars have explored the effort invested by students in college in a variety of activities, their level of involvement, and their level of academic and social integration (Astin, 1984; Kuh et al., 1991; Pace, 1984, 1990; Tinto, 1975, 1993). Pace (1982) conducted an exhaustive study exploring the quality of effort that undergraduate students invest. He notes that the student is an active participant in his or her own learning, and one critical factor of student success is the initiative of the student to seize many educational opportunities and resources that are available on the campus. Pace (1984) goes further to point out that the student must invest a great deal of time and effort in learning and development processes. He defines time as frequency dimension and effort as a qualitative dimension. In this case, a student puts forth time and effort in his or her education participating in a range of learning activities such as talking about course subject-matter with peers and family members outside of class, staying abreast of course readings, attending class, taking advantage of tutorial services, etc. Simply put, student engagement can be defined in terms of the following equation: the amount students learn in college is a function of how much they put into it.

Although the concept of engagement entails a multitude of behavioral and psychological elements, it also contains a component of student investment and intensity. In essence, engagement can be explained as having breadth as well as depth (Feldman & Newcomb, 1969; Kuh et al., 1991; Pace, 1984). For instance, a number of students might participate intensely in a small number of activities, while other students engage broadly in a range of developmental

activities. Pace (1984) measured breadth of involvement as the number of scales on which a particular student scored above the median of a particular peer group. Consistent with Pace's study of the quality of effort that students invest into their college experience, Astin (1984) explored the concept of student involvement by explaining that engagement requires an investment of energy at numerous points throughout a student's college experience or as a concentrated focus in a few areas. With regard to institutional type, selective institutions noted higher frequencies on nearly all of the quality of effort scales, and research and doctoral universities reported lower percentages. For instance, Pace (1990) notes that "students at selective liberal arts colleges report greater gains in general education, literature, and arts and are also best with respect to the intellectual skills outcomes of analysis and synthesis," while research and doctoral university students report significant increases in the outcomes involving science (p. 61).

Institutional Characteristics

The majority of studies conducted on high performing organizations have determined that culture is a critical factor in college students' success (Bolman & Deal, 2003; Collins, 2001; Kuh et al., 2005b; Kuh & Whitt, 1988; Tierney, 1999). A modest amount of research has explored the various relationships of institutional characteristics to college student development and educational outcomes (Astin, 1977, 1993b; Berger & Milem, 2000; Pascarella & Terenzini, 1991, 2005). With regard to environmental measures, Astin (1977) explored a number of institutional characteristics at several different types of colleges. In fact, Astin (1977) states, "One of the strongest effects of college selectivity is on the student's undergraduate grade-point average, which is substantially reduced by attending a highly selective institution" (p. 228).

Beyond that, selectivity enhances a student's likelihood of completing college and raises his or her desire for enrolling in graduate school.

Other noteworthy institutional characteristics consist of the size and control of the institution. Many opportunities for student involvement to occur are significantly reduced at larger institutions such as acquiring positions of leadership on campus, engaging (formally and informally) with faculty, and participating in extracurricular activities. In addition, institutional control (private versus public) impacts a student's collegiate experience in a number of ways. Students who attend a private institution have a better chance of becoming more involved, interacting with faculty, and being satisfied with their experience (Astin, 1977; Kuh & Whitt, 1988; Kuh et al., 2005b; Pascarella & Terenzini, 1991, 2005; Toutkoushian & Smart, 2001).

At the same time, after analyzing and synthesizing the results of over 2,600 research studies, Pascarella and Terenzini (1991) concluded the following:

There was little consistent evidence to suggest that measures of institutional "quality" or environmental characteristics have more than a small, perhaps trivial, net influence on how much a student learns during four years of college. When student pre-college traits were controlled statistically, only three variables had statistically significant positive associations with standardized measures of achievement across at least two independent samples. These were frequency of student-faculty interaction, degree of curricular flexibility, and faculty members' formal educational level. (p. 108)

Notwithstanding, Toutkoushian and Smart (2001) discovered a number of institutional characteristics that were statistically significant. Their study integrated institutional characteristics (between-institution effects) and student acquired experiences (within-college effects) by drawing a national sample from the Higher Education Research Institute 1986 CIRP data and follow-up data from 1990 (Toutkoushian & Smart, 2001). Toutkoushian and Smart employed multiple regression to ascertain whether or not certain institutional characteristics, particularly institutional expenditures, have an impact on students' gains realized in college.

While analyzing the statistical effects of institutional expenditures, Toutkoushian and Smart (2001) discovered the following:

After controlling for student background and acquired characteristics, higher per-student expenditures positively related to student gains in interpersonal skills and learning/knowledge acquisition... Students enrolled at institutions with a higher proportion of expenditures devoted to academic support, for example, report having lower gains in learning/knowledge and communication skills. At the same time, it is interesting that the proportion of expenditures for institutional support also has a positive effect on gains in learning/knowledge, and that the proportion of expenditures allocated to an institution has no consistent impact on self-reported student gains. (p. 48)

Beyond that, a number of other institutional characteristics that had a significant effect on one of the five self-perceived college gains included the following: institutional selectivity, number of students enrolled, ratio of graduate students to undergraduate students, ratio of students from different racial and ethnic backgrounds, cost of tuition, student-faculty ratio, Carnegie classification, and faculty earnings (Toutkoushian & Smart, 2001). On average, students who attended institutions with higher levels of selectivity were more inclined to report that the level of their communication skills positively increased; however, these same students reported that their interpersonal skills did not improve significantly (Toutkoushian & Smart, 2001). In addition, those students who attended larger institutions reported a decrease in interpersonal skills, tolerance/awareness, and preparation for graduate school (Toutkoushian & Smart, 2001). Strikingly, lower self-perceived gains in learning/knowledge were reported by students who attended institutions with a higher percentage of graduate students. This might be attributable to the fact that a significant number of research institutions make utilize graduate students, rather than faculty, to teach several undergraduate courses (Toutkoushian & Smart, 2001).

In addition, when taking into account the number of minority students who attend an institution, there was a slight positive effect on student gains in tolerance and communication skills but negative effects on learning (Toutkoushian & Smart, 2001). Moreover, fewer gains in

interpersonal skills and insignificant positive gains in knowledge/learning were reported by those students who attended higher-priced institutions (Toutkoushian & Smart, 2001). Beyond that, higher student-faculty ratios contribute to gains in all five gain measures listed above, except communication (Toutkoushian & Smart, 2001). When considering the Carnegie classification of an institution, students reported gains in learning/knowledge, particularly at research or doctoral institutions (Toutkoushian & Smart, 2001). As a final point, faculty salary only contributed to student gains in tolerance/awareness (Toutkoushian & Smart, 2001).

It is equally important to point out the impact that organizational structure and institutional mission have on student outcomes. The organizational structure of an institution can be defined as the patterns and processes of behaviors exhibited by administrators on campus (Berger, 2002). Drawing from Birnbaum's (1988) conceptual model, Berger (2002) discovered that the organizational structure of an institution has a slight impact on student learning and development. In addition, a study conducted by Braxton and McClendon (2001-02) revealed that how well institutions communicate their rules and regulations has a definite impact on student integration and persistence. In fact, how well students understand and connect with the various bureaucratic constructs, which are inherent at every institution, can quite possibly affect their success. In a similar fashion, research on organizational theory reveals that institutional mission is positively related to student success. Tinto (1993) noted that student commitment to educational goals and the institution significantly influenced academic performance and persistence. Research confirms that the relationship between student goals and institutional mission is mediated by academic and social factors; moreover, improved academic and social integration leads to greater institutional commitment, student success and persistence (Kuh et al., 2005b; Pascarella & Terenzini, 2005; Tinto, 1993). In addition, several researchers have noted

the positive impact that the correlation of an institution's mission, with its respective programs and policies, has on student success. On the whole, these institutions are categorized as being more effective and efficient (Birnbaum, 1988; Bolman & Deal, 1991; Ewell, 1989). In the final analysis, the degree to which institutions execute their missions and make intentional efforts to ensure the success of all students is positively related to student engagement, persistence, and graduation rates (Kezar & Kinzie, 2006; Kuh et al., 2005b).

Place of Residence While in College

A significant amount of research has consistently shown that living on campus is positively associated with student success and persistence (Astin, 1977, 1993b; Bliming, 1989; Brossoit, 1999; Chickering & Reisser, 1993; Graff & Cooley, 1970; Pace, 1990; Pascarella, Bohr, Nora, Zusmman, Inman, & Desler, 1993; Pascarella & Terenzini, 1991; Welty, 1976; Wilson, Anderson, & Flemling, 1987). Students who reside on campus typically interact more with faculty and peers and are more satisfied with their college experience (Pascarella & Terenzini, 1991, 2005). Astin (1977) further validates this research by noting that "the most significant impacts of living on campus versus commuting are on achievement and career development" (p. 220). Moreover, Brossoit (1999) explored the impact of living on campus versus commuting and discovered that residential experience is a critical factor in determining the persistence and retention of African American students at PWIs. Simply stated, living on campus drastically increases a student's involvement in extracurricular activities, level of satisfaction, and chance of finishing college.

In an effort to explore college impact on commuter and residential students, researchers determined that student who resided at home were less likely to return as full-time students, had less of a chance of completing college, and were less satisfied with their collegiate experience

(Astin, 1973; Chickering, 1974). In particular, Chickering (1974) found that “students who live at home, in comparison with those who live in college dormitories, are less fully involved in academic activities, in extracurricular activities, and in social activities with other students” (p. 84). However, Pascarella and Terenzini (2005) do caution all concerned by noting that the effects of living on campus are more than likely indirect rather than direct with regard to persistence and degree completion. Notwithstanding, earlier studies have concluded that students who reside on campus have higher levels of academic and social integration, higher levels of satisfaction, and significantly more interaction with faculty members and peers in contrast to those who live off campus (Pascarella, 1984; Tinto, 1987). Moreover, the environment of living on campus was determined to advance such benefits as higher levels of increase in “personal autonomy and independence, intellectual disposition, and the development of more mature interpersonal relationships” (Pascarella & Terenzini, 1991, p. 401). Lastly, Pascarella and Terenzini (1991) stated that “the single most consistent within-college determinant of impact was a student on-campus” (p. 611).

A Brief History of the African American Experience in Higher Education

Barriers to Equal Access to Higher Education

It seems quite appropriate to cogitate briefly upon a few aspects of the past and present experiences of African American students in higher education. A substantial amount of research exploring the African American experience in higher education primarily focuses on issues of access (Hurtado, Inkelas, Briggs, & Rhee, 1997; Jackson, 2001; Mitchell-Kernan, 1990; Pulliam, 1991; St. John, 2002), retention (Chenworth, 1999; Credle & Dean, 1991; Giles-Gee, 1989; Love, 1993; Sherman, Giles, & Williams-Green, 1994; Tinto, 1993), and the experiences of those students enrolled at HBCUs and PWIs (Allen, 1992; Allen, Epps, & Haniff, 1991; DeSousa

& Kuh, 1996; Fleming, 1984; Terenzini, Yeagher, Bohr, Pascarella, & Nora, 1997; Watson & Kuh, 1996). Dating back to the early 1800s, more than one million African Americans lived in the United States. Of these, 90% were slaves and 10% were free. These numbers reflected, particularly in the North, the expansion of the education of free African Americans after 1800 who went on to attend college (Branson, 1987). In 1886, the passage of the Fourteenth Amendment granted United States citizenship to African Americans; however, hardly any opportunities for higher education existed at that time.

In 1823, at Middlebury College, Alexander Lucius Twilight was the first African American to receive a college degree; nevertheless, only a small number of Black college graduates were recorded before the Civil War. After 1860, several northern colleges were open to African Americans. Unfortunately, progress was slow because a number of them were ill-prepared for college work as a result of their having to attend insufficient segregated public schools (Pulliam, 1991). Furthermore, in the South, state laws banned African Americans from attending established historically White colleges and universities. By the same token, in the North, as well as other regions throughout the United States, African Americans were disallowed access to White institutions due to customs, practices, and traditions (Jackson, 2001).

In the South, Black colleges expanded with the help of excellent leaders like Booker T. Washington. Washington attended Hampton Institute and went on to become a teacher and leader at Tuskegee Normal and Industrial Institute in Tuskegee, Alabama. Before the Civil War, African American participation in higher education was almost nonexistent. Surprisingly, in 1915, less than 30 African Americans had actually graduated from an American college or university (Mitchell-Kernan, 1990). Before the Reconstruction Era (1865-1877), merely a few institutions admitted African Americans. Even though there was a modest advancement in

higher education for African Americans, it was extremely slow. During the period between the Civil War and World War I, African American education in geographical regions beyond the South increased gradually.

By the start of World War II, higher education for African Americans had become associated with private Black colleges. In fact, during this period, eight Black colleges accounted for nearly half of the 4,000 African Americans who graduated from college. Fortunately, with financial resources granted from the Second Morrill Act (1890), a number of Black agricultural and normal schools were founded. The majority of these colleges offered teacher education programs. A number of colleges in the North were open to African Americans; however, few were admitted because of their failure to meet the admission requirements. Public colleges and universities remained segregated either legally or de facto (Mitchell-Kernan, 1990; Pulliam, 1991).

Twenty-four years before the Civil War began, Richard Humphreys, a Quaker in Philadelphia, established the Institute for Colored Youth (now Cheyney University), the first institution of higher learning for African Americans (Jackson & Nunn, 2003). Shortly thereafter, “Wilberforce University in Ohio and Lincoln University in Pennsylvania were the first two Black higher education institutions that offered postsecondary-level instruction and baccalaureate degrees” (Jackson & Nunn, 2003, p. 2). The historical nature of these institutions is symbolic, in a number of ways, of the struggle of all HBCUs in that every single one of them was created as a result of the exclusionary and discriminatory laws and practices of the dominant White society (Jackson & Nunn, 2003). While the first degree-granting institutions established explicitly for African Americans were a positive step in the right direction, the majority of higher education institutions remained entirely White, continuing the belief that African Americans

were “intellectually inferior and incapable of comprehending serious scholarly study” (Slater, 1996, p. 72). Beyond that, Thomas and Green (2001) note that “HBCUs were initially built not only to provide access to Black youngsters through the minds of Black people. In the minds of White people, they were built to contain and segregate Black people” (p. 139). At the turn of the twentieth century, nearly 2,300 African Americans had graduated from U.S. colleges and universities, and more than 80% of these had attended HBCUs (Mitchell-Kernan, 1990).

Rise of HBCUs

HBCUs are institutions established prior to 1964, whose principal mission was and still is, to educate African Americans (Roebuck & Murty, 1993, p. 3). For over 160 years, HBCUs have provided the foundation for the intellectual, political, cultural, and social development of a multitude of African American students throughout the United States, particularly in the Southeast. HBCUs have a reputation for taking aggressive steps to retain and graduate students (Chenworth, 1999). Ehrenberg and Rothstein (1994) point out that although HBCUs comprise of only 17% of postsecondary institutions, these institutions graduate over 50% of African American graduates. This fact strongly suggests the likelihood that the environment on these college campuses affords something special to inspire African American students to persist to complete their degree requirements. One explanation for their focus on retention is that HBCUs are primarily teaching institutions with faculty who make intentional efforts to engage students inside as well as outside the classroom. With the help of all administrators and faculty, the purpose of HBCUs transcends academics to incorporate the social development of students. With approximately 300,000 students currently enrolled, HBCUs entered the twenty-first century with a well-deserved legacy of accomplishments as well as identifiable challenges (Jackson &

Nunn, 2003). Despite past, present and future challenges, HBCUs have continued to remain instrumental in providing quality educational opportunities for African Americans.

Institutional type has long been considered a factor in understanding African American student success. In fact, research suggests that HBCUs provide a more supportive and nurturing environment where students are more confident, more likely to be involved in campus events and activities, and have better relationships with faculty than African American students at predominately White institutions (Allen, 1992; Astin, 1977; Constantine, 1995; Fleming, 1984; Redd, 1998). Many African American students attending predominately White institutions (PWIs) may find that the predominance of White culture results in feeling of alienation, which prevents academic and social integration (Feagin, Vera, & Imani, 1996; Rendon, Jalomo, & Nora, 2000). Other studies have found that African American students who attend HBCUs felt more encouraged to achieve and a greater sense of belonging than their counterparts at PWIs (Fries-Brit & Turner, 2002; Phelps, Trankos-Howe, Dagley, & Lyn, 2001). In addition, various descriptions of HBCU campuses have included the following: comfort, tradition, nurturing atmosphere, avoiding stress of racial tension, gaining a sense of identity and heritage, learning among other talented Blacks, more African American faculty and administrator role models, more personable faculty that know students by name, and more students who are politically conscious (Roebuck & Murty, 1993; Ross, 1995).

According to Hoffman, Llagas, and Snyder (2003), in 2000, HBCUs enrolled 13% (275,680) of all African American students enrolled in college. In the same year, HBCUs awarded 23.6% of all degrees earned by African American students. While a significant number of African American students are still attracted to HBCUs, a significant number of African American students continue the pursuit of higher education at PWIs (Freeman, 1999).

African American Students at PWIs

For the past two decades, as educational institutions recognize the need to reflect a more diverse American culture, there has been an increase in the number of African American students attending PWIs (Sedgwick, 2000). After the implementation of a number of educational initiatives, the enrollment of African Americans at PWIs has drastically increased over the last decade (Freeman, 1999; Nettles & Perna, 1997; Sedgwick, 2000). A number of research studies involving African American students at PWIs suggest that perceived racial isolation and the perception of a hostile environment are the primary reasons noted as barriers to their success. A number of these students felt that a sense of community was missing, and this contributed to their leaving (Ascher, 1993; Feagin, Vera, & Imani, 1996; Fleming, 1984).

In addition, Winder (1995) conducted a comparative study to investigate the significance of feelings of alienation that African American students may have at PWIs and HBCUs. The findings of this study revealed the importance of colleges and universities to develop policies and guidelines to deal with the perceived alienation that is experienced by students under pressure to conform to the identities of the predominate cultural group on campus. Moreover, Winder's (1995) findings suggest the need to address the psychosocial development of the African American student in terms of developing counseling strategies and interventions for this population. Similarly, Laszloffy (2002) discovered that African American students attending PWIs felt a sense of alienation and belief that the university at large did not truly care about them as Black students. Beyond that, in a study of first-year African American students' perceptions at a PWI, Douglas (1998) discovered that research participants, as they progressed through their college experience, were acutely aware of their African American race. Moreover, Douglas (1998) notes that the majority of the participants reported being highly conscious of their

race/ethnicity while on and off campus. They also reported that they were frequently stared at and were exposed to negative experiences with White students and White members of the community where the institution was located.

Research studies have concluded that a number of critical factors can influence academic and social integration as well as general experiences of African American college students attending PWIs. Many of these factors include, but are not limited to, pre-college characteristics (Tinto, 1993), cultural background (DeSousa, 2001), as well as institutional culture, ethos, and racial attitudes and incidents (Feagin & Sikes, 1995; Hurtado, 1992). Wallace and Bell (1999) argued that "... regardless of social, economic, or academic background, minority students face a problem unknown to White students on predominately White campuses: redefining themselves as African Americans, as Latinos or Latinas, as Asians, or as Native Americans" (p. 319).

Drawing from Tinto's theoretical model and using data from interviews and focus groups, Fries-Britt and Turner (2002) examined the experiences of 34 African American juniors and seniors who were persisting toward graduation at a PWI and an HBCU. The study attempted to "identify experiences that both challenged and supported the academic success of these students" (Fries-Britt & Turner, 2002, p. 316). The results of the study indicated that student perceptions at the two institutions differed with regard to the amount of support received. Those students who attended the HBCU indicated that they felt their faculty and peers gave them a strong sense of belonging. Conversely, African American students at the PWI did not feel connected to their faculty or each other. In fact, "African American students at the PWI lack a critical mass of African American peers and faculty and describe campus activities as being geared toward Whites" (Fries-Britt & Turner, 2002, p. 319).

Fries-Britt and Turner (2002) also explored student and faculty interactions on campus to discover the extent to which these interactions affected student motivation. The African American students who attended the HBCU indicated that their college experiences helped them build self-esteem and confidence. On the contrary, at the PWI, African American students reported that they often felt like the “token” African American who was singled-out in the classroom, especially when there were discussions about race or culture. Moreover, Fries-Britt and Turner suggest that PWIs can meet the needs of their African American students through the implementation of policy changes and initiatives that promote more inclusive campus environments. Morley (2003-04) adds further validity to these studies by revealing in his research findings that White and minority students both indicated that campus social activities occurred with racial/ethnic groups and interactions outside the classroom were largely segregated.

With regard to campus climate, Outcalt and Skews-Cox (2002) examined the relationship between the institutional climate at PWIs and HBCUs and African American student satisfaction. The researchers found the levels of satisfaction on multiple measures to be stunningly different between the two types of institutions. Outcalt and Skews-Cox discovered that African American students attending HBCUs were more satisfied with their college experiences than their counterparts at PWIs. The students who attended HBCUs noted increased satisfaction with the ethnic/racial diversity of faculty and the sense of community and were more involved on campus. The study concluded by noting that “... even after controlling for relevant variables such as involvement, individual satisfaction, and academic performance, attending an HBCU almost doubles an African American undergraduate’s chances of being satisfied with his or her college experience” (Outcalt & Skews-Cox, 2002, p. 344). Beyond that, Rowser (1997) notes

that research has shown that even when societal disadvantages, background disadvantages, and deficits in academic skills are factored in, and even when African Americans have ample resources and strongly value education, “They still continue to earn fewer credits than whites during their freshman year, have poorer grades than whites throughout their college experience, will flunk out at a significantly higher rate than whites, or will be more likely to dropout during their first two years of college than whites” (p. 722). In the final analysis, although a number of African American students who attend PWIs have satisfying experiences, research overwhelmingly indicates that, for the majority of them, more intentional efforts need to be made to remove the barriers to academic and social integration, sense of community, and graduation.

Summary

This chapter focused on the impact of college on students, more specifically, how various points of influence related to student engagement, quality of effort put forth by students, institutional characteristics, and student’s place of residence while in college impact educational outcomes. Beyond that, this chapter highlighted a brief historical perspective of the African American experience in higher education. To date, numerous educational outcomes conveyed by students have been compiled by research scholars from both longitudinal and cross-sectional data, resulting in an expansive base of literature that provides evidence regarding what is known about the impact of college on students. The expansive body of research on student engagement and the impact of college on various educational outcomes revealed several clear findings. Undoubtedly, student engagement has a positive impact on academic performance, satisfaction with college experience, and graduation rates (Astin, 1984, 1985, 1993a, 1993b; Pascarella & Terenzini, 2005; Tinto, 1987, 1993). Theoretical frameworks from these research studies continue to help higher education researchers and policy makers develop ways to strategically

identify which programs and policies impact student development and educational outcomes. Collectively, the research places the highest level of importance on higher education institutions' educational practices.

Studies of target populations of African American students at HBCUs and PWIs indicated that students perceived and experienced the collegiate environment differently. As a number of institutions and organizations begin to assess student engagement and college impact on various educational outcomes, more specifically academic performance, it will become ever more important to consider data at HBCUs. This will allow for higher education researchers and policy makers to develop a clearer assessment of the educational and social environments, as well as the engagement practices that exist at HBCUs, in an effort to determine their impact on the educational outcomes of students. This assessment can, in turn, serve as a catalyst for these institutions to make the necessary changes that are needed to promote and sustain positive educational outcomes for all students. The present research study relied on statistical techniques, as outlined in Chapter III, to measure the five NSSE benchmarks (level of academic challenge, active and collaborative learning, student-faculty interaction, supportive campus environment, and enriching educational experiences) and their relationship to the self-reported academic performance of African American students at a public historically Black higher education institution in the Southeast. Understanding how student and institution-driven engagement are related to desired educational outcomes will guide higher education researchers and policy makers as they think about how and where they should exert their influence.

CHAPTER III

METHODOLOGY

The purpose of this study was to investigate the relationship between the patterns of engagement behavior and self-reported academic performance of first-year freshman, sophomore, junior, and senior undergraduate students at a public historically Black higher education institution in the Southeast. The study was ex post facto, since the data had been collected prior to the design of this research. Because of the number of factors that weigh on each student during his or her college experience, the examination of variables that might impact student engagement was extremely complex. In seeking to explore the relationship between student engagement patterns and academic performance, this study sought to answer the following research questions:

1. Is there a statistically significant relationship between undergraduate students' perceived level of academic challenge and self-reported academic performance?
2. Is there a statistically significant relationship between undergraduate students' perceived level of active and collaborative learning and academic performance?
3. Is there a statistically significant relationship between undergraduate students' perceived level of student-faculty interactions and academic performance?
4. Is there a statistically significant relationship between undergraduate students' perceived level of supportive campus environment and academic performance?
5. Is there a statistically significant relationship between undergraduate students' perceived level of enriching educational experiences and academic performance?

6. Is there a statistically significant relationship between undergraduate students' patterns of engagement behavior and academic performance?
7. Is there a statistically significant difference between male and female students' perceived level of academic challenge and academic performance?
8. Is there a statistically significant difference between male and female students' perceived level of active and collaborative learning and academic performance?
9. Is there a statistically significant difference between male and female students' perceived level of student-faculty interactions and academic performance?
10. Is there a statistically significant difference between male and female students' perceived level of supportive campus environment and academic performance?
11. Is there a statistically significant difference between male and female students' perceived level of enriching educational experiences and academic performance?
12. Is there a statistically significant relationship between male and female students' patterns of engagement behavior and academic performance?
13. Is there a significant difference between first-year freshman and senior students' perceived level of academic challenge and academic performance?
14. Is there a significant difference between first-year freshman and senior students' perceived level of active and collaborative learning and academic performance?
15. Is there a significant difference between first-year freshman and senior students' perceived level of student-faculty interactions and academic performance?
16. Is there a significant difference between first-year freshman and senior students' perceived level of supportive campus environment and academic performance?

17. Is there a significant difference between first-year freshman and senior students' perceived level of enriching educational experiences and academic performance?
18. Is there a statistically significant relationship between first-year freshman and senior students' patterns of engagement behavior and academic performance?

The preceding chapters have offered an indication as to the level of intricacy of the concerns and inquiry connected to the analysis of the patterns of engagement of African American students at higher education institutions and set the stage for a discussion of the specific research methodology. This chapter outlines the sample population, instrumentation, description of variables in the study, data collection procedures, and data analysis procedures that were used in this study.

Sample Population

This study focused on sample population that consisted of first-year freshman, sophomore, junior, and senior undergraduate students at a public historically Black university in the Southeast. The university under study participated in the NSSE study in 2008. For the purposes of this study, first-year freshman, sophomore, junior, and senior participants who took the survey in 2008 were examined. In Spring 2008, from a total undergraduate student population of 3,442 students (847 freshman, 932 sophomores, 780 juniors, and 883 seniors), data were collected on a total of 173 respondents. The breakdown of the total sample population from the Spring 2008 survey administration is described in detail in Chapter IV. During the Spring 2008 semester, approximately 80% of the students at this institution were enrolled full-time. A significant majority of students were permanent residents of the State where the institution is located.

As typical of HBCUs, the institution has an exceedingly homogeneous population, with African American students representing over 90% of the population. Female students accounted for approximately 70% of the student population. The average age of undergraduate students was 24 years. In addition, the institution has approximately 150 full-time faculty and a 20:1 student/faculty ratio. Beyond that, the institution's graduation and retention rates are among the highest in the State. Equally important, the institution promotes quality teaching, research, and service. In addition, diverse learning communities, a culture of integrity and openness, and higher levels of accountability are cornerstones of the institution's culture.

Instrumentation

The instrument that was utilized to conduct this study was the National Survey of Student Engagement (NSSE). The NSSE, designed as a third-party survey administration, is administered by the Indiana University Center for Postsecondary Research to random samples of first-year and senior students at four-year institutions in a consortium that varies from year to year. The NSSE is a 28-item instrument (with multiple parts on most items) that "asks students to report the frequency with which they engage in dozens of activities that represent good educational practice..." (Kuh, n.d., p. 2). The NSSE assesses the experiences of college students through questions related to participation in programs, activities, and educational practices empirically linked to high levels of learning and development. Students also provide information about their background, including age, gender, race, living situation, educational status, and major field. Students may take the survey via the web or complete a paper survey. The results are compiled into five national benchmark scores to which institutions can compare their mean scores. A copy of the 2008 NSSE instrument, The College Student Report, appears here as Appendix A.

Overall, NSSE examines the quality of undergraduate education by measuring student behaviors and institutional factors common to student learning and success (National Survey of Student Engagement, 2005b). Survey items are categorized into three areas: (a) college activities, (b) educational and personal growth, and (c) opinions about your school. The college activity items measure aspects of student usage of time (both inside and outside the classroom) as well as the amount of time and energy students devote to various educational opportunities and resources provided by the institution. More specifically, the questions ask students how often they have completed each of several events over the course of the current school year. All activity items include the response options of *very often*, *often*, *sometimes*, and *never*. Educational and personal growth items ask students to estimate certain gains by reflecting on their experiences while in college and the extent to which they have made progress in desirable learning outcomes. These items deal with the holistic development of students, addressing a variety of outcomes such as acquiring job or work-related knowledge, writing and speaking clearly and effectively, understanding oneself and others of diverse racial and ethnic backgrounds, and gaining the ability to think critically and analytically. The response scale for these items consists of the following: *very much*, *quite a bit*, *some*, and *very little*. Lastly, students were also asked their opinions of the institution, including their overall satisfaction with college to which they may respond *excellent*, *good*, *fair*, or *poor*.

The remaining survey items address the extent to which the institution emphasizes different kinds of mental activities (Bloom, 1956) such as educationally purposeful experiences that may involve working with a faculty member on a research project, doing community service or volunteer work, and the makeup of a typical seven-day week. Response options are very much, *quite a bit*, *some*, and *very little*. When reporting survey results to institutions, several of

the aforementioned areas are further delineated into five clusters or benchmarks of effective educational practice: (a) level of academic challenge, (b) active and collaborative learning, (c) student-faculty interaction, (d) enriching educational experiences, and (e) supportive campus environments (National Survey of Student Engagement, 2005b). Developed with a blend of theory and empirical analyses, benchmarks give additional direction on how institutions can better serve their students.

The NSSE evaluates these benchmarks through a variety of questions scored on a traditional Likert scale. The number of questions and Likert scale responses vary between the five benchmarks. Eleven survey questions are used to determine the level of academic challenge. The national mean for the level of academic challenge is 52.6%. Seven questions are used to determine the level of active and collaborative learning. The national mean is 42.4%. Six survey questions are used to determine the level of student and faculty interaction. The national mean is 34%. Twelve questions are used to assess the level of enriching educational experiences with a national mean of 27.8%. Lastly, six survey questions address the level of supportive campus environment with a national mean of 60.1% (National Survey of Student Engagement, 2005a).

Validity and Reliability

The merit of quantitative research is predicated on the researcher's ability to draw inferences from data and make generalizations from the results (Creswell, 2002). This process is dependent upon the quality of the data source(s) and is determined by reliability and validity. Reliability refers to the consistent measurement of scores over repeated administrations of an instrument. Reliable data are mostly free from measurement error and consistent over time (Cresswell, 2002). To validate the reliability of the NSSE instrument, its creators used a three-

step method that combined empirical analysis and theory (Kuh, n.d.). “Initially we conducted principal component analyses with oblique rotations. Then theory was employed to crystallize the item groupings into their respective groups. Finally, a randomly sampled population was used” (Kuh, n.d., p. 5).

In addition, Cronbach’s alpha is an important measure of reliability because it indicates the extent to which a set of test items estimates generalizability. Cronbach alpha levels of .70 or above indicate a good measure of internal consistency and enhance the instrument’s reliability (Creswell, 2002). Cronbach alpha levels for the 2005 NSSE were reported for the combined populations of freshman and senior students with respect to each of the five benchmark areas: (a) academic challenge (.75); (b) active and collaborative learning (.67); (c) student-faculty interaction (.75); (d) enriching educational experiences (.66); and (e) supportive campus environments (.77) (National Survey of Student Engagement, 2005a).

In an effort to ensure the validity of the NSSE instrument, its creators paid careful attention to the construction of the survey to ensure content validity. Content validity assesses “how well the questions represent all the possibilities of questions available” (Cresswell, 2002, p. 183). Throughout the years, the NSSE survey has proven to be valid as demonstrated through a normal distribution and consistent patterns of responses (Kuh, n.d.).

The NSSE survey uses student self-reports to determine the quality of undergraduate education. The credibility of self-reports has been researched and proven to be an effective assessment method (Pace, 1985; Pike, 1995). Self-reports can be affected by a student’s lack of knowledge (Wentland & Smith, 1993) or unwillingness to respond truthfully (Aaker, Kumar, & Day, 1998). The NSSE survey was designed to meet the five criteria (Bradburn & Sudman, 1988; Converse & Presser, 1989; DeNisi & Shaw, 1977; Hansford & Hattie, 1982; Laing,

Swayer, & Noble, 1989; Lowman & Williams, 1987; Pace, 1985; Pike, 1995) for valid self-reporting: (1) when the information requested is known to the respondents; (2) the questions are phrased clearly and unambiguously; (3) the questions refer to recent activities; (4) the respondents think the questions merit a serious and thoughtful response; and (5) answering the questions does not threaten, embarrass, or violate the privacy of the respondent or encourage the respondent to respond in socially desirable ways (Kuh, n.d., p. 4). In order to meet these criteria, the NSSE survey typically is administered to randomly selected first-year and senior students enrolled in the previous term. The survey is administered in the spring term, and the questions asked participants to reflect on their experience over the past six months. “To eliminate the variability in week-to-week fluctuations, students report the number of hours spent in each of six activities during a typical week, which also allows an accurate check on the total number of hours students report” (Kuh, n.d., p. 4).

Lastly, a majority of survey items on the NSSE instrument have been assessed in other long-standing surveys including the Cooperative Institutional Research Program (Astin, 1993b; Sax, Astin, Korn, & Mahoney, 1997) and the College Student Experiences Questionnaire Research Program (Kuh, Vesper, Connolly, & Pace, 1997). Over time, these surveys have been confirmed to measure what they are intended to measure.

Description of Variables in the Study

Astin (1993a) identifies two types of environmental measures: characteristics of the total institution and particular educational experiences within an institution. The intention of the NSSE is to measure the outcomes central to academic success to assist individual institutions in improving student learning (Kuh, n.d.). To achieve this goal, NSSE identifies the following five benchmarks for educational practice: (a) level of academic challenge,

(b) active and collaborative learning, (c) student-faculty interaction, (d) enriching educational experiences, and (e) supportive campus environments. Individual scores for each participant on each of the five benchmarks will be examined. For this study, these five benchmarks will serve as independent variables.

Educational outcomes are classified as either cognitive or affective in nature (Astin, 1993a; Kuh et al., 2005a, 2005b; Kuh, Vesper, & Pace, 1997; Pascarella & Terenzini, 1991, 2005). As previously defined, the output characteristic for this study will be academic performance, as measured by student self-reported GPA. For this study, academic performance, as measured by student self-reported GPA, will serve as the dependent variable.

Data Collection Procedures

As mentioned earlier in this chapter, the data for this study were previously collected by the institution under study from NSSE administration in Spring 2008. Answers to the research questions were sought using statistical analyses of the data provided by the respondents to the questionnaire. The initial step in the data collection process was to submit the necessary forms for approval to the Director of Institutional Research at the university under study in an effort to gain access to the data file that had been collected from the NSSE administration in 2008. Once approval was granted, the data analysis process began.

Data Analysis Procedures

For the purpose of this study, two statistical techniques were employed: descriptive statistics and the general linear model univariate analysis of variance procedure. Descriptive statistics consist of a wide variety of techniques that assist the researcher in describing the general characteristics of the data that he or she collects.

A meticulous univariate and bivariate examination of the data is an initial and vital step in analyzing any data (Cramer & Howitt, 2004). For the purposes of this study, descriptive statistical analysis was used to provide a basic description of the sample size, gender, and educational status, to name a few, in an effort for the researcher to make initial comparisons between the groups. Lastly, cross-tabulations were used to examine the relationships between the outcome (dependent) variable of academic performance and the input (independent) variables of gender, educational status, and the five NSSE benchmarks (level of academic challenge; active and collaborative learning; student-faculty interaction; enriching educational experience; and supportive campus environment).

Correlational by design, this study incorporated the general linear model univariate analysis of variance procedure to determine the correlation between one criterion or dependent variable and a combination of two or more predictor or independent variables as well as to ascertain if the responses from the research samples were consistent with the conceptual framework and psychometric properties of the NSSE instrument (Cramer & Howitt, 2004). Gall, Gall, and Borg (1999) explain that correlational research allows the researcher: (1) to analyze the relationships among a large number of variables; (2) to collect data at one point in time or different points in time; (3) to examine the degree of the relationship between variables; and (4) to analyze how several variables, either singly or in combination, might affect a particular pattern of behavior.

A correlation analysis was conducted to explore the relationship between engagement patterns and student self-reported academic performance. The statistical analysis for these data were generated by employing the general linear model univariate analysis of variance procedure. Foster, Barkus, and Yavorsky (2006) note, “The general linear model is not a discrete statistical

technique itself but the statistical theory which underpins many parametric techniques” (p. 10).

The goal of the general linear model univariate analysis of variance procedure is to determine whether categorical or continuous independent variables affect or relate to the dependent variable (Foster et al., 2006). The general linear model is a report of the influences that constitute survey participants’ responses to specific questions that correspond to particular variables.

The term “general linear model” stems from the assumption that the relationship between the independent and dependent variables is linear in nature (Foster et al., 2006). However, it is important to note that the term “linear” in linear model comes from the mathematical form of the equation, not from any constraint on the model that it must fit only a straight line. Moreover, if one graphs the relationship between the criterion and predictor variables, the pattern would be a straight line, just as the regression line is a straight line in regression. Thus, in mathematical terms, the equation is said to be linear because there are no squared or higher power terms in it (Darlington, 1990). It is assumed that the independent variables that are entered into a statistical package and analyzed using the general linear model univariate analysis of variance procedure have an additive effect, which implies that they contribute to the prediction of the dependent variable (Foster et al., 2006).

The general linear model is closely related to analysis of variance and regression analysis; therefore, an understanding of analysis of variance and regression analysis is critical to an understanding of the general linear model. The analysis of variance statistical procedure is used to examine whether or not there are statistically significant differences between group means (Foster et al., 2006). In addition, the analysis of variance statistical procedure has the ability to determine the effect of more than one independent variable as well as confirm whether the effect of one of them is influenced by the other, more specifically, whether they interact

(Foster et al., 2006). This can be accomplished by comparing the difference between the means of the groups and calculating the likelihood of the difference occurring by chance (Cramer & Howitt, 2004). The F value or ratio, which is named by Snedecor in honor of Sir Ronald Fisher who developed the test, is used to indicate whether there is a difference between the means of the groups, and the probability (p) is used to determine the likelihood of this difference occurring by chance (Cramer & Howitt, 2004). Cramer and Howitt (2004) go further to define the F ratio as “the variance or mean square of an effect divided by the variance or mean square of the error or remaining variance” (p. 6). Beyond that, the term effect can be interpreted as a factor or an interaction between two or more factors (Cramer & Howitt, 2004). In essence, if the F ratio is significantly large, there is a good chance that it will be statistically significant (Cramer & Howitt, 2004).

As implied by the name analysis of variance and mentioned in the previous paragraphs, variance encapsulates the degree to which each score differs from the mean. In effect, there are three sources from which variance can emerge: individual differences, error, and the effect of the independent variable (Foster et al., 2006). These potential sources of variance are shown in an analysis of variance table and are revealed in the sum of squares value column (Foster et al., 2006). More specifically, Foster et al. (2006) note that “in a between group-groups analysis of variance, the between-groups sum of squares represents the amount of variance accounted for by the effect of the independent variable with the estimate of error removed, and the sums of squares are divided by the corresponding degrees of freedom to produce the mean square between groups and the mean square within groups” (p. 7).

Analysis of variance models produce main effects, interactions, and simple effects.

A main effect is the direct effect of an independent variable on the dependent variable (Foster et al., 2006). In addition, an interaction effect is the combined effect of two or more independent variables on the dependent variable (Foster et al., 2006). Furthermore, Foster et al. (2006) note that a simple effect “refers to the effect of one independent variable at one particular level of the other independent variable (p. 9). Simple effects are only considered if the research has discovered a significant interaction (Foster et al., 2006).

There are several assumptions that must be met in order to effectively utilize the analysis of variance procedure. First, the homogeneity of variance assumption must be met. In short, this ensures that the groups formed by the independent variables are relatively equal in size and have similar variances on the dependent variable (Cramer & Howitt, 2004; Foster et al., 2006; Vogt, 1999). Next, the analysis of variance procedure assumes an interval-level dependent variable (Cramer & Howitt, 2004; Foster et al., 2006; Vogt, 1999). Finally, the multivariate normality assumption must be met. This simply means that the dependent variable should be normally distributed in each category of the independent variables (Cramer & Howitt, 2004; Vogt, 1999).

Similarly, regression analysis involves correlations, which are concerned with the relationship between pairs of variables (Cramer & Howitt, 2004). In multiple regression, there is a single dependent variable predicted from a number of independent variables. Multiple regression analysis is utilized when one has a measure of an output or predicted variable, which has been measured on a continuous scale, and measures on two or more predicting or independent variables, and he or she wants to find out which of the independent variables predict the output variable and how much influence each one has on the prediction (Foster et al., 2006; Vogt, 1999). Desired outcomes of such a model assist the researcher in obtaining estimates of

individual coefficients in the model to understand the predictive role of the individual independent variables used (Elliott & Woodward, 2007). In addition, multiple regression is used to determine the strength and the direction of the linear association between the criterion and a predictor controlling for the association of the predictors with each other and the criterion. Another use of multiple regression is to determine how much of the variance in the criterion is accounted for by particular predictors (Cramer & Howitt, 2004; Vogt, 1999). Furthermore, multiple regression also determines whether the size of the regression coefficients and of the variance explained is greater than that expected by chance, that is, whether it is statistically significant (Vogt, 1999). Statistical significance depends on the size of the sample. The larger the sample, the more likely that small values will be statistically significant (Cramer & Howitt, 2004).

There are three main ways in which predictors can be entered into a multiple regression. First, one might enter all the predictors of interest at the same time in a single step. This is commonly referred to as standard multiple regression (Spicer, 2005; Vogt, 1999). This method is useful for determining which variables are most strongly related to the criterion taking into account their association with the other predictors. Next, a second method is to use some statistical criteria for determining the entry of predictors one at a time. This widely used method is often referred to as stepwise multiple regression in which the predictor with the most significant F ratio is considered for entry (Spicer, 2005; Vogt, 1999). This is the predictor which has the highest correlation with the criterion. Lastly, a third method of multiple regression is called hierarchical or sequential multiple regression in which the order and the number of predictors entered into each step of the multiple regression are determined by the researcher (Spicer, 2005; Vogt, 1999).

Hierarchical multiple regression is used to determine whether the relationship between a predictor and a criterion is moderated by another predictor called a moderator or moderating variable (Cramer & Howitt, 2004). The particular step of a statistical or hierarchical method of multiple regression is, in essence, a standard multiple regression of the predictors in that step. Simply put, the partial regression coefficients represent the association between each predictor and the criterion controlling their association with all the other predictors on that step (Cramer & Howitt, 2004; Foster et al., 2006).

The legitimacy of a multiple regression analysis depends in part on how well assumptions have been met about the normality and variances of frequency distributions, the linearity of relationships, and the independence of cases (Spicer, 2005). Multiple regression assumes that the scores on the variables are normally distributed, linear and homoscedastic (Vogt, 1999). This last term means the variance of the dependent variable does not differ at different levels of the independent variable. One way of determining whether the dependent variable is normally distributed is to look at the plot of the distribution of scores on each variable (Foster et al., 2006). To check all three assumptions, one can study plots of the residuals, the differences between the scores predicted by the multiple regression equation and the actual scores. If all three assumptions are met, the plot of the residuals against predicted scores will be roughly rectangular (Foster et al., 2006).

Given these facts, the general linear model univariate procedure can be viewed as an extension of analysis of variance and multiple regression, for it has the capacity to analyze the effect or relationship that multiple independent variables have on one or more dependent variables (Darlington, 1990). In addition, the general linear model univariate analysis of variance procedure has the capacity to accept categorical variables which, in regression, must be

manually entered as dummy variables (Darlington, 1990). The legitimacy of employing the general linear model depends in part on how well assumptions have been met about independent observations; an adequate sample size, where every cell must have more cases than dependent variables; and Box's *M* test for homogeneity of variance and covariance tests, also referred to as homoscedasticity, which examines whether the variance in the dependent variables is similar (Darlington, 1990). For the purpose of this study, the general linear model univariate analysis of variance procedure was used on the independent variables of sex, classification, and the five engagement benchmarks (i.e., academic challenge; active and collaborative learning; student-faculty interaction; enriching educational experience; and supportive campus environment) to ascertain which variables, if any, were significantly related to the dependent variable, academic performance as indicated by student self-reported GPA.

Limitations of the Study

This study was limited to one public, historically Black university in the southeast with an exceedingly homogeneous population. This university was neither randomly selected nor statistically representative of all HBCUs. In addition, data that were used in this study were obtained from student responses to items on the 2008 NSSE survey. The questionnaire was administered only once, during the 2008 spring semester, and data were analyzed for this time period only. Graham (2001) notes that academic and social engagements are generally perceived as longitudinal outcomes. As a result, administering the survey only once may limit the study.

Beyond that, this study will only explore the relationships between student engagement and academic performance. In addition, although the NSSE survey is intended for first-year freshman and seniors, a small number of surveys were completed by students who were sophomores and juniors. Finally, the data were gathered by student self-reports.

Even though it is extremely difficult to prevent, there is a possibility that student self-reported responses, in particular, self-reported grade point averages, might be inaccurate. Where these limitations apply, the results of this study would not necessarily be pertinent to students in other higher education institutions.

Summary

Descriptive statistics and the general linear model univariate analysis of variance procedure were used to answer the research questions for this study. Among its many features, the general linear model is a flexible statistical model that incorporates normally distributed dependent variables and categorical or continuous independent variables. The methodological procedures that were outlined in this chapter were appropriate for this research study and generated the necessary data to support the findings that were presented in Chapter IV and summarized in Chapter V.

CHAPTER IV

RESULTS

This chapter presents the results of the data analyses. It provides a detailed description of the sample population and addresses the eighteen research questions that guided this study. Exploratory in nature, the goal of this research study was to determine if there were relationships of gender, educational status, and the five NSSE benchmarks (i.e., academic challenge, active and collaborative learning, student interactions with faculty, enriching educational experiences, and supportive campus environment) with student self-reported academic performance. This chapter is divided into two sections. The first section uses cross-tabulations, measures of central tendency, and dispersions to provide a profile of the students at the institution under study. The second section of this chapter seeks to answer the research questions by employing a series of general linear model univariate analyses.

The primary purpose of this study was to investigate the relationship between patterns of engagement behavior and self-reported academic performance of first-year freshman and senior undergraduate students at a public historically Black higher education institution in the Southeast. The NSSE survey is intended for first-year freshman and senior students; however, 18 of the survey participants included in this sample indicated that they were classified as a sophomore or junior, and 3 survey participants did not report their classification. Although this study focused on first-year freshman and senior students, sophomores and juniors were included in the descriptive statistical analyses and reports, and they were also included in the statistical analyses and reports that were used to answer research questions 1-12.

Description of the Sample

As mentioned previously, in Spring 2008, from a total undergraduate student population of 3,442 students (847 freshman, 932 sophomores, 780 juniors, and 883 seniors), data were collected on a total of 173 respondents, with the vast majority of them being freshman and seniors. The ages and classification (freshman, sophomore, junior, senior) of the students were analyzed. The results of this analysis are presented in Table 1.

Table 1

Crosstabulation of Age by Student Classification

Age	Students Classification					Total
	Freshman	Sophomore	Junior	Senior	Unclassified	
19 or younger	66	4	0	0	0	70
20-23	3	3	2	30	1	39
24-29	5	1	0	9	1	16
30-39	11	2	1	15	0	29
40-55	3	2	3	9	1	18
Over 55	0	0	0	1	0	1
Total	88	12	6	64	3	173

Freshman students who were 19 or younger accounted for the highest percentage of students surveyed ($n = 66, 75\%$). The second highest percentage of freshman ($n = 11, 12.5\%$) were between the ages of 30-39. Four (33.3%) sophomore students reported their ages as 19 or younger. In addition, three (50%) junior students reported their ages as 40-55. The highest percentage of seniors ($n = 30, 46.9\%$) were between the ages of 20 to 23. In addition, the second

highest percentage of seniors ($n = 15, 23.4\%$) were between the ages of 30-39. One (1.6%) senior indicated that he or she was over 55.

The students reported their gender on the survey. The gender and classification (freshman, sophomore, junior, senior) of the students were analyzed. The results of this analysis are presented in Table 2.

Table 2

Crosstabulation of Sex by Student Classification

Sex	Student Classification					Total
	Freshman	Sophomore	Junior	Senior	Unclassified	
Male	14	5	1	13	0	33
Female	73	7	5	51	3	139
Total	87	12	6	64	3	172

Female students represented the highest percentage of freshman ($n = 73, 83.9\%$) surveyed. Similarly, female students represented the highest percentage of seniors ($n = 51, 79.7\%$) surveyed. With regard to the participants who reported their gender as male, 14 (16.1%) were freshman and 13 (20.3%) were seniors. Of the remaining participants, 7 (58.3%) sophomores reported their gender as female and 5 (41.7%) as male, while 5 (83.3%) of juniors reported their gender as female and 1 (16.7%) as male.

The students were asked to report their enrollment status (full-time or part-time) as of the semester in which they completed the survey. Enrollment status and classification

(freshman, sophomore, junior, senior) of these students were analyzed. The results of this analysis are presented in Table 3.

Table 3

Crosstabulation of Enrollment Status by Student Classification

Enrollment Status	Student Classification					Total
	Freshman	Sophomore	Junior	Senior	Unclassified	
Part-time	11	3	0	20	1	35
Full-time	77	9	6	44	2	138
Total	88	12	6	64	3	173

The vast majority of students ($n = 138$, 79.8%) indicated that they were enrolled full-time. Freshman comprised of 77 (55.8%) and seniors comprised of 44 (31.9%) of full-time students. Nine (6.5%) sophomores and 6 (4.3%) juniors also indicated that they were full-time. There were 11 (31.4%) freshman and 20 (57.1%) seniors who indicated that they were enrolled part-time.

The students were asked to provide a self-report of what most of their grades have been up to the semester that they completed the survey. The students used an 8-point rating scale with 8 = A, 7 = A-, 6 = B+, 5 = B, 4 = B-, 3 = C+, 2 = C, and 1 = C- or lower. In addition, students were asked to provide a self-report of their ACT and SAT scores. A summary of the results of this analysis is presented in Table 4.

Table 4

*Descriptive Statistics
Academic Grades, ACT and SAT Scores by Student Status*

Grades, ACT and SAT Scores	N	M	SD	Median	Range	
					Minimum	Maximum
Academic Grades						
Freshman	87	5.26	1.781	5.00	1	8
Sophomore	12	5.33	2.605	6.00	1	8
Junior	6	6.00	1.265	6.50	4	7
Senior	64	5.50	1.512	6.00	2	8
Unclassified	3	3.67	2.309	5.00	1	5
ACT Scores						
Freshman	27	19.11	2.063	19.00	14	23
Sophomore	3	17.67	.577	18.00	17	18
Junior	1	22.00		22.00	22	22
Senior	13	18.46	3.406	18.00	12	26
Unclassified	1	14.00		14.00	14	14
SAT Scores						
Freshman	63	906.51	111.734	900.00	550	1180
Sophomore	5	876.00	209.595	820.00	630	1160
Junior	1	1070.00		1070.00	1070	1070
Senior	47	896.38	182.821	920.00	570	1320
Unclassified	2	875.00	21.213	875.00	860	890

Academic performance was ascertained by students' self-reported grades using the following

8-point rating scale: 8 = A, 7 = A-, 6 = B+, 5 = B, 4 = B-, 3 = C+, 2 = C, and 1 = C- or lower.

With regard to students' self-reported grades, the mean score for freshman was 5.26 ($SD = 1.78$), with a median of 5.00. The range of grades was from 1 to 8. The mean score for seniors was 5.50 ($SD = 1.51$), with a median of 6.00. The range of grades was from 2 to 8. Sophomore students reported a mean score of 5.33 ($SD = 2.61$), with a median of 6 and a range from 1 to 7. Junior students reported a mean score of 6.00 ($SD = 1.27$), with a median of 6.50 and a range from 4 to 7.

With regard to students' self-reported ACT scores, the mean, composite score for freshman ($n = 27$) was 19.11 ($SD = 2.06$), with a median of 19. The range of ACT scores for freshman was from 14 to 23. The mean ACT score for seniors ($n = 13$) was 18.46 ($SD = 3.41$), with a median of 18. The range of ACT scores for seniors was from 12 to 26. For students' self-reported SAT scores, the mean, total score for freshman ($n = 63$) was 906.51 ($SD = 111.73$), with a median of 900.00. The range of SAT scores for freshman was from 550 to 1180. The mean SAT score for seniors ($n = 47$) was 896.38, with a median of 920.00. The range of SAT scores for seniors was from 570 to 1320.

Research Questions

Eighteen research questions were developed for this study. Answers to each of these research questions were sought using general linear model univariate statistical analysis procedures. All determinations regarding the statistical significance of the findings were made using a criterion alpha level of 0.05.

Research Question 1

Is there a statistically significant relationship between undergraduate students' perceived level of academic challenge and self-reported academic performance?

To determine the effect, if any, that the independent variable, level of academic challenge, had on self-reported academic performance, the general linear model univariate analysis of variance tests of between-subjects effects was analyzed. The results of these analyses are presented in Table 5. The results include the sums of squares, mean squares, F values, and partial eta-squared (η^2) values.

Table 5

GLM Analysis of Variance Summary for Academic Challenge and Academic Performance

Source	Type IV Sum of Squares	df	MS	F	η^2
Corrected Model	24.830	1	24.830	8.467*	.047
Intercept	143.256	1	143.256	48.850*	.223
ACa	24.830	1	24.830	8.467*	.047
Error	498.536	170	2.933		
Total	5455.000	172			
Corrected Total	523.366	171			

* $p < .05$

To evaluate the effect that academic challenge had on students' self-reported academic performance, the F statistic and its associated significance level were examined. The F statistic and its associated significance level, $F(1, 170) = 8.46, p = .004$, indicated that academic challenge had a statistically significant linear relationship with the dependent variable, self-reported academic performance. In addition, partial $\eta^2 = .047$, the percent of variance in the dependent variable uniquely attributable to the given effect variable, indicated that the model explained 4.7% of the variance in self-reported academic performance.

Research Question 2

Is there a statistically significant relationship between undergraduate students' perceived level of active and collaborative learning and academic performance?

To determine the effect, if any, that the independent variable, level of active and collaborative learning, had on self-reported academic performance, the general linear model univariate analysis of variance tests of between-subjects effects was analyzed. The results of these analyses are presented in Table 6. The results include the sums of squares, mean squares, F values, and partial η^2 values.

Table 6

GLM Analysis of Variance Summary for Active and Collaborative Learning and Academic Performance

Source	Type IV Sum of Squares	df	MS	F	η^2
Corrected Model	42.432	1	42.432	14.924*	.082
Intercept	298.227	1	298.227	104.890*	.386
ACL	42.432	1	42.432	14.924*	.082
Error	474.822	167	2.843		
Total	5385.000	169			
Corrected Total	517.254	168			

* $p < .05$

To evaluate the effect that students' level of active and collaborative learning had on self-reported academic performance, the F statistic and its associated significance level were examined. The F statistic and its associated significance level, $F(1, 167) = 14.92, p = .000$,

indicated that students' level of active and collaborative learning had a statistically significant linear relationship with the dependent variable, self-reported academic performance. In addition, partial $\eta^2 = .082$ indicated that the model explained 8.2% of the variance in self-reported academic performance.

Research Question 3

Is there a statistically significant relationship between undergraduate students' perceived level of student-faculty interaction and academic performance?

To determine the effect, if any, that the independent variable, level of student-faculty interaction, had on self-reported academic performance, the general linear model univariate analysis of variance tests of between-subjects effects was analyzed. The results of these analyses are presented in Table 7. The results include the sums of squares, mean squares, *F* values, and partial η^2 values.

Table 7

GLM Analysis of Variance Summary for Student-Faculty Interaction and Academic Performance

Source	Type IV Sum of Squares	<i>df</i>	<i>MS</i>	<i>F</i>	η^2
Corrected Model	30.957	1	30.957	10.628*	.059
Intercept	764.065	1	764.065	262.303*	.608
SFI	30.957	1	30.957	10.628*	.059
Error	492.282	169	2.913		
Total	5430.000	171			
Corrected Total	523.240	170			

**p* < .05

To evaluate the effect that the level of student-faculty interaction had on self-reported academic performance, the F statistic and its associated significance level were examined. The F statistic and its associated significance level, $F(1, 169) = 10.63, p = .001$, indicated that the level of student-faculty interaction had a statistically significant linear relationship with the dependent variable, self-reported academic performance. In addition, partial $\eta^2 = .059$ indicated that the model explained 5.9% of the variance in self-reported academic performance.

Research Question 4

Is there a statistically significant relationship between undergraduate students' perceived level of supportive campus environment and academic performance?

To determine the effect, if any, that the independent variable, level of supportive campus environment, had on self-reported academic performance, the general linear model univariate analysis of variance tests of between-subjects effects was analyzed. The results of these analyses are presented in Table 8. The results include the sums of squares, mean squares, F values, and partial η^2 values.

Table 8

GLM Analysis of Variance Summary for Supportive Campus Environment and Academic Performance

Source	Type IV Sum of Squares	<i>df</i>	<i>MS</i>	<i>F</i>	η^2
Corrected Model	28.916	1	28.916	9.942*	.055
Intercept	438.748	1	438.748	150.849*	.470
SCE	28.916	1	28.916	9.942*	.055
Error	494.451	170	2.909		
Total	5455.000	172			
Corrected Total	523.366	171			

* $p < .05$

To evaluate the effect that the level of supportive campus environment had on self-reported academic performance, the *F* statistic and its associated significance level were examined. The *F* statistic and its associated significance level, $F(1, 170) = 9.94, p = .002$, indicated that the level of supportive campus environment had a statistically significant linear relationship with the dependent variable, self-reported academic performance. In addition, partial $\eta^2 = .055$ indicated that the model explained 5.5% of the variance in self-reported academic performance.

Research Question 5

Is there a statistically significant relationship between undergraduate students' perceived level of enriching educational experiences and academic performance?

To determine the effect, if any, that the independent variable, level of enriching educational experiences, had on self-reported academic performance, the general linear model univariate analysis of variance tests of between-subjects effects was analyzed. The results of these analyses are presented in Table 9. The results include the sums of squares, mean squares, F values, and partial η^2 values.

Table 9

GLM Analysis of Variance Summary for Enriching Educational Experiences and Academic Performance

Source	Type IV Sum of Squares	df	MS	F	η^2
Corrected Model	12.490	1	12.490	4.154*	.024
Intercept	759.839	1	759.839	252.705*	.599
EEE	12.490	1	12.490	4.154*	.024
Error	508.153	169	3.007		
Total	5406.000	171			
Corrected Total	520.643	170			

* $p < .05$

To evaluate the effect that the level of enriching educational experiences had on self-reported academic performance, the F statistic and its associated significance level were examined. The F statistic and its associated significance level, $F(1, 169) = 4.15$, $p = .043$, indicated that the level of enriching educational experiences had a statistically significant linear relationship with the dependent variable, self-reported academic performance. In addition,

partial $\eta^2 = .024$ indicated that the model explained 2.4% of the variance in self-reported academic performance.

Research Question 6

Is there a statistically significant relationship between undergraduate students' patterns of engagement behavior and academic performance?

To determine the effect, if any, that the independent variables, academic challenge, active and collaborative learning, student-faculty interaction, supporting campus environment, and enriching educational experiences, had on self-reported academic performance, the general linear model univariate analysis of variance tests of between-subjects effects was analyzed. The results of these analyses are presented in Table 10. The results include the sums of squares, mean squares, F values, and partial η^2 values.

Table 10

GLM Analysis of Variance Summary for NSSE Benchmarks and Academic Performance

Source	Type IV Sum of Squares	<i>df</i>	<i>MS</i>	<i>F</i>	η^2
Corrected Model	52.838	5	10.568	3.686*	.103
Intercept	106.487	1	106.487	37.141*	.187
ACa	.123	1	.123	.043	.000
ACL	11.117	1	11.117	3.877*	.024
SFI	1.452	1	1.452	.506	.003
SCE	6.691	1	6.691	2.334	.014
EEE	.401	1	.401	.140	.001
Error	461.605	161	2.867		
Total	5311.000	167			
Corrected Total	514.443	166			

* $p \leq .05$

To evaluate the effect that the independent variables listed above had on self-reported academic performance, the *F* statistic and its associated significance level were examined for each independent variable. The *F* statistic and its associated significance level, $F(1, 161) = .043$, $p = .836$, indicated that the level of academic challenge did not have a statistically significant linear relationship with the dependent variable, self-reported academic performance. In addition, partial $\eta^2 = .000$ indicated that, in this model, academic challenge explained 0% of the variance in self-reported academic performance. Moreover, the *F* statistic and its associated significance level, $F(1, 161) = 3.88$, $p = .051$, indicated that the level of active and collaborative learning had a statistically significant linear relationship with the dependent variable, self-reported academic

performance. In addition, partial $\eta^2 = .024$ indicated that, in this model, active and collaborative learning explained 2.4% of the variance in self-reported academic performance.

Furthermore, the F statistic and its associated significance level, $F(1, 161) = .506, p = .478$, indicated that the level of student-faculty interaction did not have a statistically significant linear relationship with the dependent variable, self-reported academic performance. In addition, partial $\eta^2 = .003$ indicated that, in this model, student-faculty interaction explained 0.3% of the variance in self-reported academic performance. Moreover, the F statistic and its associated significance level, $F(1, 161) = 2.33, p = .129$, indicated that the level of supportive campus environment did not have a statistically significant linear relationship with the dependent variable, self-reported academic performance. In addition, partial $\eta^2 = .014$ indicated that, in this model, supportive campus environment explained 1.4% of the variance in self-reported academic performance. In addition, the F statistic and its associated significance level, $F(1, 161) = .140, p = .709$, indicated that the level of enriching educational experiences did not have a statistically significant linear relationship with the dependent variable, self-reported academic performance. In addition, partial $\eta^2 = .001$ indicated that, in this model, enriching educational experiences explained 0.1% of the variance in self-reported academic performance.

Research Question 7

Is there a statistically significant difference between male and female students' perceived level of academic challenge and academic performance?

To determine the effect, if any, that the independent variables, level of academic challenge and sex (male or female), had on self-reported academic performance, the general linear model univariate analysis of variance tests of between-subjects effects and Levene's test of

equality of error variances were analyzed. The results of these analyses are presented in Table 11. The results include the sums of squares, mean squares, F values, and partial η^2 values.

Table 11

GLM Analysis of Variance Summary for Academic Challenge, Sex, and Academic Performance

Source	Type IV Sum of Squares	df	MS	F	η^2
Corrected Model	40.428	2	20.214	7.059*	.078
Intercept	151.998	1	151.998	53.079*	.240
ACa	23.814	1	23.814	8.316*	.047
sex	13.894	1	13.894	4.852*	.028
Error	481.092	168	2.864		
Total	5439.000	171			
Corrected Total	521.520	170			

* $p < .05$

The Levene's test of equality of error variances, $F(1, 169) = .003, p = .959$, was not significant; therefore, the null hypothesis that the variance of the dependent variable is equal across groups was accepted. The F statistic and its associated significance level, $F(1, 168) = 8.32, p = .004$, indicated that the level of academic challenge had a statistically significant linear relationship with the dependent variable, self-reported academic performance. In addition, partial $\eta^2 = .047$ indicated that, in this model, academic challenge explained 4.7% of the variance in self-reported academic performance.

Furthermore, the F statistic and its associated significance level, $F(1, 168) = 4.85, p = .029$, indicated that sex had a statistically significant linear relationship with the dependent

variable, self-reported academic performance. In addition, partial $\eta^2 = .028$ indicated that, in this model, sex explained 2.8% of the variance in self-reported academic performance.

Research Question 8

Is there a statistically significant difference between male and female students' perceived level of active and collaborative learning and academic performance?

To determine the effect, if any, that the independent variables, level of active and collaborative learning and sex, had on self-reported academic performance, the general linear model univariate analysis of variance tests of between-subjects effects and Levene's test of equality of error variances were analyzed. The results of these analyses are presented in Table 12. The results include the sums of squares, mean squares, *F* values, and partial η^2 values.

Table 12

GLM Analysis of Variance Summary for Active and Collaborative Learning, Sex, and Academic Performance

Source	Type IV Sum of Squares	<i>df</i>	<i>MS</i>	<i>F</i>	η^2
Corrected Model	58.949	2	29.475	10.655*	.114
Intercept	313.27	1	313.272	113.249*	.407
ACL	38.529	1	38.529	13.928*	.078
sex	16.546	1	16.546	5.982*	.035
Error	456.426	165	2.766		
Total	5369.000	168			
Corrected Total	515.375	167			

**p* < .05

The Levene's test of equality of error variances, $F(1, 166) = .119, p = .731$, was not significant; therefore, the null hypothesis that the variance of the dependent variable is equal across groups was accepted. The F statistic and its associated significance level, $F(1, 165) = 13.93, p = .000$, indicated that the level of active and collaborative learning had a statistically significant linear relationship with the dependent variable, self-reported academic performance. In addition, partial $\eta^2 = .078$ indicated that, in this model, active and collaborative learning explained 7.8% of the variance in self-reported academic performance.

Furthermore, the F statistic and its associated significance level, $F(1, 165) = 5.98, p = .016$, indicated that sex had a statistically significant linear relationship with the dependent variable, self-reported academic performance. In addition, partial $\eta^2 = .035$ indicated that, in this model, sex explained 3.5% of the variance in self-reported academic performance.

Research Question 9

Is there a statistically significant difference between male and female students' perceived level of student-faculty interaction and academic performance?

To determine the effect, if any, that the independent variables, level of student-faculty interaction and sex, had on self-reported academic performance, the general linear model univariate analysis of variance tests of between-subjects effects and Levene's test of equality of error variances were analyzed. The results of these analyses are presented in Table 13. The results include the sums of squares, mean squares, F values, and partial η^2 values.

Table 13

GLM Analysis of Variance Summary for Student-Faculty Interaction, Sex, and Academic Performance

Source	Type IV Sum of Squares	<i>df</i>	<i>MS</i>	<i>F</i>	η^2
Corrected Model	40.862	2	20.431	7.101*	.078
Intercept	667.039	1	667.039	231.820*	.581
SFI	24.335	1	24.335	8.457*	.048
sex	9.425	1	9.425	3.275	.019
Error	480.526	167	2.877		
Total	5414.000	170			
Corrected Total	521.388	169			

* $p < .05$

The Levene's test of equality of error variances, $F(1, 168) = .094, p = .759$, was not significant; therefore, the null hypothesis that the variance of the dependent variable is equal across groups was accepted. The F statistic and its associated significance level, $F(1, 167) = 8.46, p = .004$, indicated that the level of student-faculty interaction had a statistically significant linear relationship with the dependent variable, self-reported academic performance. In addition, partial $\eta^2 = .048$ indicated that, in this model, student-faculty interaction explained 4.8% of the variance in self-reported academic performance.

Furthermore, the F statistic and its associated significance level, $F(1, 167) = 3.28, p = .072$, indicated that sex did not have a statistically significant linear relationship with the dependent variable, self-reported academic performance. In addition, partial $\eta^2 = .019$ indicated that, in this model, sex explained 1.9% of the variance in self-reported academic performance.

Research Question 10

Is there a statistically significant difference between male and female students' perceived level of supportive campus environment and academic performance?

To determine the effect, if any, that the independent variables, level of supportive campus environment and sex, had on self-reported academic performance, the general linear model univariate analysis of variance tests of between-subjects effects and Levene's test of equality of error variances were analyzed. The results of these analyses are presented in Table 14. The results include the sums of squares, mean squares, *F* values, and partial η^2 values.

Table 14

GLM Analysis of Variance Summary for Supportive Campus Environment, Sex, and Academic Performance

Source	Type IV Sum of Squares	<i>df</i>	<i>MS</i>	<i>F</i>	η^2
Corrected Model	41.308	2	20.654	7.226*	.079
Intercept	436.340	1	436.340	152.652*	.476
SCE	24.694	1	24.694	8.639*	.049
sex	12.822	1	12.822	4.486*	.026
Error	480.212	168	2.858		
Total	5439.000	171			
Corrected Total	521.520	170			

**p* < .05

The Levene's test of equality of error variances, $F(1, 169) = .069, p = .793$, was not significant; therefore, the null hypothesis that the variance of the dependent variable is equal

across groups was accepted. The F statistic and its associated significance level, $F(1, 168) = 8.64, p = .004$, indicated that the level of supportive campus environment had a statistically significant linear relationship with the dependent variable, self-reported academic performance. In addition, partial $\eta^2 = .049$ indicated that, in this model, supportive campus environment explained 4.9% of the variance in self-reported academic performance.

Furthermore, the F statistic and its associated significance level, $F(1, 168) = 4.49, p = .036$, indicated that sex had a statistically significant linear relationship with the dependent variable, self-reported academic performance. In addition, partial $\eta^2 = .026$ indicated that, in this model, sex explained 2.6% of the variance in self-reported academic performance.

Research Question 11

Is there a statistically significant difference between male and female students' perceived level of enriching educational environment and academic performance?

To determine the effect, if any, that the independent variables, level of enriching educational environment and sex, had on self-reported academic performance, the general linear model univariate analysis of variance tests of between-subjects effects and Levene's test of equality of error variances were analyzed. The results of these analyses are presented in Table 15. The results include the sums of squares, mean squares, F values, and partial η^2 values.

Table 15

GLM Analysis of Variance Summary for Enriching Educational Experiences, Sex, and Academic Performance

Source	Type IV Sum of Squares	<i>df</i>	<i>MS</i>	<i>F</i>	η^2
Corrected Model	25.402	2	12.701	4.299*	.049
Intercept	690.720	1	690.720	233.776*	.583
EEE	8.258	1	8.258	2.795	.016
sex	12.901	1	12.901	4.366*	.025
Error	493.421	167	2.955		
Total	5390.000	170			
Corrected Total	518.824	169			

* $p < .05$

The Levene's test of equality of error variances, $F(1, 168) = .000, p = .990$, was not significant; therefore, the null hypothesis that the variance of the dependent variable is equal across groups was accepted. The F statistic and its associated significance level, $F(1, 167) = 2.80, p = .096$, indicated that the level of enriching educational environment did not have a statistically significant linear relationship with the dependent variable, self-reported academic performance. In addition, partial $\eta^2 = .016$ indicated that, in this model, enriching educational environment explained 1.6% of the variance in self-reported academic performance.

Furthermore, the F statistic and its associated significance level, $F(1, 167) = 4.37, p = .038$, indicated that sex had a statistically significant linear relationship with the dependent variable, self-reported academic performance. In addition, partial $\eta^2 = .025$ indicated that, in this model, sex explained 2.5% of the variance in self-reported academic performance.

Research Question 12

Is there a statistically significant relationship between male and female students' patterns of engagement behavior and academic performance?

To determine the effect, if any, that the independent variables, academic challenge, active and collaborative learning, student-faculty interaction, supporting campus environment, enriching educational experiences, and sex, had on self-reported academic performance, the general linear model univariate analysis of variance tests of between-subjects effects and Levene's test of equality of error variances were analyzed. The results of these analyses are presented in Table 16. The results include the sums of squares, mean squares, *F* values, and partial η^2 values.

Table 16

GLM Analysis of Variance Summary for NSSE Benchmarks, Sex, and Academic Performance

Source	Type IV Sum of Squares	<i>df</i>	<i>MS</i>	<i>F</i>	η^2
Corrected Model	66.822	6	11.137	3.973*	.130
Intercept	117.586	1	117.586	41.942*	.209
ACa	.326	1	.326	.116	.001
ACL	11.968	1	11.968	4.269*	.026
SFI	.517	1	.517	.184	.001
SCE	5.674	1	5.674	2.024	.013
EEE	.883	1	.883	.315	.002
sex	13.928	1	13.928	4.968*	.030
Error	445.762	159	2.804		
Total	5295.000	166			
Corrected Total	512.584	165			

* $p < .05$

The Levene's test of equality of error variances, $F(1, 164) = .231, p = .631$, was not significant; therefore, the null hypothesis that the variance of the dependent variable is equal across groups was accepted. The F statistic and its associated significance level, $F(1, 159) = .116, p = .734$, indicated that the level of academic challenge did not have a statistically significant linear relationship with the dependent variable, self-reported academic performance. In addition, partial $\eta^2 = .001$ indicated that, in this model, academic challenge explained 0.1% of the variance in self-reported academic performance.

Moreover, the F statistic and its associated significance level, $F(1, 159) = 4.27, p = .040$, indicated that the level of active and collaborative learning had a statistically significant linear

relationship with the dependent variable, self-reported academic performance. In addition, partial $\eta^2 = .026$ indicated that, in this model, active and collaborative learning explained 2.6% of the variance in self-reported academic performance. Furthermore, the F statistic and its associated significance level, $F(1, 159) = .184, p = .668$, indicated that the level of student-faculty interaction did not have a statistically significant linear relationship with the dependent variable, self-reported academic performance. In addition, partial $\eta^2 = .001$ indicated that, in this model, student-faculty interaction explained 0.1% of the variance in self-reported academic performance. Moreover, the F statistic and its associated significance level, $F(1, 159) = 2.02, p = .157$, indicated that the level of supportive campus environment did not have a statistically significant linear relationship with the dependent variable, self-reported academic performance. In addition, partial $\eta^2 = .013$ indicated that, in this model, supportive campus environment explained 1.3% of the variance in self-reported academic performance.

Additionally, the F statistic and its associated significance level, $F(1, 159) = .315, p = .575$, indicated that the level of enriching educational experiences did not have a statistically significant linear relationship with the dependent variable, self-reported academic performance. In addition, partial $\eta^2 = .002$ indicated that, in this model, enriching educational experiences explained 0.2% of the variance in self-reported academic performance. Furthermore, the F statistic and its associated significance level, $F(1, 159) = 4.97, p = .027$, indicated that sex had a statistically significant linear relationship with the dependent variable, self-reported academic performance. In addition, partial $\eta^2 = .030$ indicated that, in this model, sex explained 3.0% of the variance in self-reported academic performance.

Research Question 13

Is there a significant difference between first-year freshman and senior students' perceived level of academic challenge and academic performance?

To determine the effect, if any, that the independent variables, level of academic challenge and class, had on self-reported academic performance, the general linear model univariate analysis of variance tests of between-subjects effects and Levene's test of equality of error variances were analyzed. The results of these analyses are presented in Table 17. The results include the sums of squares, mean squares, *F* values, and partial η^2 values.

Table 17

GLM Analysis of Variance Summary for Academic Challenge, Classification, and Academic Performance

Source	Type IV Sum of Squares	<i>df</i>	<i>MS</i>	<i>F</i>	η^2
Corrected Model	11.580	2	5.790	2.103	.028
Intercept	160.954	1	160.954	58.473*	.283
ACa	9.533	1	9.533	3.463	.023
class	1.375	1	1.375	.500	.003
Error	407.387	148	2.753		
Total	4764.000	151			
Corrected Total	418.967	150			

**p* < .05

The Levene's test of equality of error variances, $F(1, 149) = .810, p = .370$, was not significant; therefore, the null hypothesis that the variance of the dependent variable is equal

across groups was accepted. The F statistic and its associated significance level, $F(1, 148) = 3.46, p = .065$, indicated that the level of academic challenge did not have a statistically significant linear relationship with the dependent variable, self-reported academic performance. In addition, partial $\eta^2 = .023$ indicated that, in this model, academic challenge explained 2.3% of the variance in self-reported academic performance.

Furthermore, the F statistic and its associated significance level, $F(1, 148) = .500, p = .481$, indicated that class did not have a statistically significant linear relationship with the dependent variable, self-reported academic performance. In addition, partial $\eta^2 = .003$ indicated that, in this model, class explained 0.3% of the variance in self-reported academic performance.

Research Question 14

Is there a significant difference between first-year freshman and senior students' perceived level of active and collaborative learning and academic performance?

To determine the effect, if any, that the independent variables, level of active and collaborative learning and class, had on self-reported academic performance, the general linear model univariate analysis of variance tests of between-subjects effects and Levene's test of equality of error variances were analyzed. The results of these analyses are presented in Table 18. The results include the sums of squares, mean squares, F values, and partial η^2 values.

Table 18

GLM Analysis of Variance Summary for Active and Collaborative Learning, Classification, and Academic Performance

Source	Type IV Sum of Squares	<i>df</i>	<i>MS</i>	<i>F</i>	η^2
Corrected Model	26.168	2	13.084	4.907*	.063
Intercept	242.502	1	242.502	90.944*	.385
ACL	24.500	1	24.500	9.188*	.060
Class	.062	1	.062	.023	.000
Error	386.643	145	2.667		
Total	4694.000	148			
Corrected Total	412.811	147			

* $p < .05$

The Levene's test of equality of error variances, $F(1, 146) = .495, p = .483$, was not significant; therefore, the null hypothesis that the variance of the dependent variable is equal across groups was accepted. The F statistic and its associated significance level, $F(1, 145) = 9.19, p = .003$, indicated that the level of active and collaborative learning had a statistically significant linear relationship with the dependent variable, self-reported academic performance. In addition, partial $\eta^2 = .060$ indicated that, in this model, active and collaborative learning explained 6.0% of the variance in self-reported academic performance.

Furthermore, the F statistic and its associated significance level, $F(1, 145) = .023, p = .879$, indicated that class did not have a statistically significant linear relationship with the dependent variable, self-reported academic performance. In addition, partial $\eta^2 = .000$ indicated that, in this model, class explained 0% of the variance in self-reported academic performance.

Research Question 15

Is there a significant difference between first-year freshman and senior students' perceived level of student-faculty interaction and academic performance?

To determine the effect, if any, that the independent variables, level of student-faculty interaction and class, had on self-reported academic performance, the general linear model univariate analysis of variance tests of between-subjects effects and Levene's test of equality of error variances were analyzed. The results of these analyses are presented in Table 19. The results include the sums of squares, mean squares, F values, and partial η^2 values.

Table 19

GLM Analysis of Variance Summary for Student-Faculty Interaction, Classification, and Academic Performance

Source	Type IV Sum of Squares	df	MS	F	η^2
Corrected Model	30.726	2	15.363	5.819*	.077
Intercept	533.592	1	533.592	202.104*	.471
SFI	28.558	1	28.558	10.817*	.053
Class	.129	1	.129	.049	.019
Error	388.107	147	2.640		
Total	4739.000	150			
Corrected Total	418.833	149			

* $p < .05$

The Levene's test of equality of error variances, $F(1, 148) = .284, p = .595$, was not significant; therefore, the null hypothesis that the variance of the dependent variable is equal

across groups was accepted. The F statistic and its associated significance level, $F(1, 147) = 10.817, p = .001$, indicated that the level of student-faculty interaction had a statistically significant linear relationship with the dependent variable, self-reported academic performance. In addition, partial $\eta^2 = .069$ indicated that, in this model, student-faculty interaction explained 6.9% of the variance in self-reported academic performance.

Furthermore, the F statistic and its associated significance level, $F(1, 147) = .049, p = .825$, indicated that class did not have a statistically significant linear relationship with the dependent variable, self-reported academic performance. In addition, partial $\eta^2 = .000$ indicated that, in this model, class explained 0% of the variance in self-reported academic performance.

Research Question 16

Is there a significant difference between first-year freshman and senior students' perceived level of supportive campus environment and academic performance?

To determine the effect, if any, that the independent variables, level of supportive campus environment and class, had on self-reported academic performance, the general linear model univariate analysis of variance tests of between-subjects effects and Levene's test of equality of error variances were analyzed. The results of these analyses are presented in Table 20. The results include the sums of squares, mean squares, F values, and partial η^2 values.

Table 20

GLM Analysis of Variance Summary for Supportive Campus Environment, Classification, and Academic Performance

Source	Type IV Sum of Squares	<i>df</i>	<i>MS</i>	<i>F</i>	η^2
Corrected Model	28.386	2	14.193	5.378*	.068
Intercept	352.698	1	352.698	133.645*	.475
SCE	26.339	1	26.339	9.980*	.063
class	2.212	1	2.212	.838	.006
Error	390.581	148	2.639		
Total	4764.000	151			
Corrected Total	418.967	150			

* $p < .05$

The Levene's test of equality of error variances, $F(1, 149) = 1.37, p = .244$, was not significant; therefore, the null hypothesis that the variance of the dependent variable is equal across groups was accepted. The F statistic and its associated significance level, $F(1, 148) = 9.98, p = .002$, indicated that the level of supportive campus environment had a statistically significant linear relationship with the dependent variable, self-reported academic performance. In addition, partial $\eta^2 = .063$ indicated that, in this model, supportive campus environment explained 6.3% of the variance in self-reported academic performance.

Furthermore, the F statistic and its associated significance level, $F(1, 148) = 2.21, p = .361$, indicated that class did not have a statistically significant linear relationship with the dependent variable, self-reported academic performance. In addition, partial $\eta^2 = .006$ indicated that, in this model, class explained 0.6% of the variance in self-reported academic performance.

Research Question 17

Is there a significant difference between first-year freshman and senior students' perceived level of enriching educational experiences and academic performance?

To determine the effect, if any, that the independent variables, level of enriching educational experiences and class, had on self-reported academic performance, the general linear model univariate analysis of variance tests of between-subjects effects and Levene's test of equality of error variances were analyzed. The results of these analyses are presented in Table 21. The results include the sums of squares, mean squares, *F* values, and partial η^2 values.

Table 21

GLM Analysis of Variance Summary for Enriching Educational Experiences, Classification, and Academic Performance

Source	Type IV Sum of Squares	<i>df</i>	<i>MS</i>	<i>F</i>	η^2
Corrected Model	8.878	2	4.439	1.602	.021
Intercept	537.535	1	537.535	193.958*	.569
EEE	6.477	1	6.477	2.337	.016
class	.077	1	.077	.028	.000
Error	407.395	147	2.771		
Total	4715.000	150			
Corrected Total	416.273	149			

**p* < .05

The Levene's test of equality of error variances, $F(1, 148) = 1.61, p = .207$, was not significant; therefore, the null hypothesis that the variance of the dependent variable is equal

across groups was accepted. The F statistic and its associated significance level, $F(1, 147) = 2.34, p = .128$, indicated that the level of enriching educational experiences did not have a statistically significant linear relationship with the dependent variable, self-reported academic performance. In addition, partial $\eta^2 = .016$ indicated that, in this model, enriching educational experiences explained 1.6% of the variance in self-reported academic performance.

Furthermore, the F statistic and its associated significance level, $F(1, 147) = .028, p = .868$, indicated that class did not have a statistically significant linear relationship with the dependent variable, self-reported academic performance. In addition, partial $\eta^2 = .000$ indicated that, in this model, class explained 0% of the variance in self-reported academic performance.

Research Question 18

Is there a statistically significant relationship between first-year freshman and senior students' patterns of engagement behavior and academic performance?

To determine the effect, if any, that the independent variables, academic challenge, active and collaborative learning, student-faculty interaction, supporting campus environment, enriching educational experiences, and class, had on self-reported academic performance, the general linear model univariate analysis of variance tests of between-subjects effects and Levene's test of equality of error variances were analyzed. The results of these analyses are presented in Table 22. The results include the sums of squares, mean squares, F values, and partial η^2 values.

Table 22

GLM Analysis of Variance Summary for NSSE Benchmarks, Classification, and Academic Performance

Source	Type IV Sum of Squares	<i>df</i>	<i>MS</i>	<i>F</i>	η^2
Corrected Model	42.925	6	7.154	2.709*	.105
Intercept	116.269	1	116.269	44.024*	.241
ACa	1.786	1	1.786	.676	.005
ACL	6.638	1	6.638	2.514	.018
SFI	5.348	1	5.348	2.025	.014
SCE	7.683	1	7.683	2.909	.021
EEE	.460	1	.460	.174	.001
class	.031	1	.031	.012	.000
Error	367.103	139	2.641		
Total	4620.000	146			
Corrected Total	410.027	145			

* $p \leq .05$

The Levene's test of equality of error variances, $F(1, 144) = .098, p = .755$, was not significant; therefore, the null hypothesis that the variance of the dependent variable is equal across groups was accepted. The F statistic and its associated significance level, $F(1, 139) = .676, p = .412$, indicated that the level of academic challenge did not have a statistically significant linear relationship with the dependent variable, self-reported academic performance. In addition, partial $\eta^2 = .005$ indicated that, in this model, academic challenge explained 0.5% of the variance in self-reported academic performance.

Moreover, the F statistic and its associated significance level, $F(1, 139) = 2.51, p = .115$, indicated that the level of active and collaborative learning had a statistically significant linear relationship with the dependent variable, self-reported academic performance. In addition, partial $\eta^2 = .018$ indicated that, in this model, active and collaborative learning explained 1.8% of the variance in self-reported academic performance. Furthermore, the F statistic and its associated significance level, $F(1, 139) = 2.03, p = .157$, indicated that the level of student-faculty interaction did not have a statistically significant linear relationship with the dependent variable, self-reported academic performance. In addition, partial $\eta^2 = .014$ indicated that, in this model, student-faculty interaction explained 1.4% of the variance in self-reported academic performance. Moreover, the F statistic and its associated significance level, $F(1, 139) = 2.91, p = .090$, indicated that the level of supportive campus environment did not have a statistically significant linear relationship with the dependent variable, self-reported academic performance. In addition, partial $\eta^2 = .021$ indicated that, in this model, supportive campus environment explained 2.1% of the variance in self-reported academic performance.

Additionally, the F statistic and its associated significance level, $F(1, 139) = .174, p = .677$, indicated that the level of enriching educational experiences did not have a statistically significant linear relationship with the dependent variable, self-reported academic performance. In addition, partial $\eta^2 = .001$ indicated that, in this model, enriching educational experiences explained 0.1% of the variance in self-reported academic performance. Furthermore, the F statistic and its associated significance level, $F(1, 139) = .012, p = .914$, indicated that class did not have a statistically significant linear relationship with the dependent variable, self-reported academic performance. In addition, partial $\eta^2 = .000$ indicated that, in this model, class explained 0% of the variance in self-reported academic performance.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

As emphasized throughout previous chapters of this study, in order for higher education institutions to help their students realize successful educational outcomes, student engagement, student satisfaction, and academic performance are, by far, critical factors that must be considered (Astin, 1993b; Banta, 2002; Bean & Bradley, 1986; Kuh & Hu, 1999; Pascarella & Terenzini, 2005). Higher education administrators and policy makers continue to rely upon assessments that measure the results of the impact that college has on students. Researchers have confirmed that student engagement has a positive impact on academic performance, satisfaction with college experience, and graduation rates (Astin, 1984, 1985, 1993a, 1993b; Pascarella & Terenzini, 2005; Tinto, 1987, 1993). In an effort to continue to advance the theoretical model that undergirds student engagement, several researchers have confirmed the fact that student engagement is a critical, contributing factor in the quality of students' college experiences, and ultimately, a critical factor in whether or not they succeed (Astin, 1993; Braxton, 2000; Kuh, 2001; Kuh et al., 2005a, 2005b; Kuh et al., 2007; Pascarella & Terenzini, 2005; Terenzini, Pascarella, & Bliming, 1996; Zhao & Kuh, 2004). To this end, this chapter discusses to what extent student engagement patterns impact academic performance. Beyond that, this chapter presents a summary of the study, provides a discussion of the findings, and offers conclusions drawn from the research findings. Finally, this chapter provides recommendations for policy, practice, and further study.

Summary of the Study

The purpose of this exploratory study was to investigate the relationship between the patterns of engagement behavior and self-reported academic performance of first-year freshman and senior undergraduate students at a public historically Black higher education institution in the Southeast. The study was ex post facto, since the data had been collected prior to the design of this research. Because of the number of factors that weigh on each student during his or her college experience, the examination of variables that might impact student engagement was extremely complex. In seeking to explore the relationship between student engagement patterns and academic performance, this study sought to answer the following research questions:

1. Is there a statistically significant relationship between undergraduate students' perceived level of academic challenge and self-reported academic performance?
2. Is there a statistically significant relationship between undergraduate students' perceived level of active and collaborative learning and academic performance?
3. Is there a statistically significant relationship between undergraduate students' perceived level of student-faculty interactions and academic performance?
4. Is there a statistically significant relationship between undergraduate students' perceived level of supportive campus environment and academic performance?
5. Is there a statistically significant relationship between undergraduate students' perceived level of enriching educational experiences and academic performance?
6. Is there a statistically significant relationship between undergraduate students' patterns of engagement behavior and academic performance?
7. Is there a statistically significant difference between male and female students' perceived level of academic challenge and academic performance?

8. Is there a statistically significant difference between male and female students' perceived level of active and collaborative learning and academic performance?
9. Is there a statistically significant difference between male and female students' perceived level of student-faculty interactions and academic performance?
10. Is there a statistically significant difference between male and female students' perceived level of supportive campus environment and academic performance?
11. Is there a statistically significant difference between male and female students' perceived level of enriching educational experiences and academic performance?
12. Is there a statistically significant relationship between male and female students' patterns of engagement behavior and academic performance?
13. Is there a significant difference between first-year freshman and senior students' perceived level of academic challenge and academic performance?
14. Is there a significant difference between first-year freshman and senior students' perceived level of active and collaborative learning and academic performance?
15. Is there a significant difference between first-year freshman and senior students' perceived level of student-faculty interactions and academic performance?
16. Is there a significant difference between first-year freshman and senior students' perceived level of supportive campus environment and academic performance?
17. Is there a significant difference between first-year freshman and senior students' perceived level of enriching educational experiences and academic performance?
18. Is there a statistically significant relationship between first-year freshman and senior students' patterns of engagement behavior and academic performance?

Discussion of the Findings

When considering the relationship between the five NSSE benchmarks (i.e., academic challenge, active and collaborative learning, student-faculty interaction, supportive campus environment, and enriching educational experiences) and self-reported academic performance, a number of findings emerged from exploring the guiding research questions. The analyses of the findings are discussed based upon the effect that each independent variable had on the dependent variable in terms of how each was factored, both individually and collectively, into each model.

With regard to academic challenge, when analyzed solely with self-reported academic performance, the results revealed a statistically significant linear relationship. This finding was consistent with previous research that links the degree to which a student is engaged academically to higher levels of academic ability or achievement (Hu & Kuh, 2002; Kuh, 1993; Kuh & Hu, 1999; Watson & Kuh, 1996). This finding also suggested that students who participated in this study believed that academic challenge, which includes students spending time preparing for class and working harder than they expected to meet an instructor's standard and courses that demand a significant amount of reading and writing and that emphasize analyzing, synthesizing, applying and making judgments about ideas and information, had a significant impact on their academic performance (Kuh, 1993; Kuh, 2006; Kuh et al., 2005a, 2005b). However, when academic challenge was analyzed together with the other independent variables (i.e., active and collaborative learning, student-faculty interaction, supportive campus environment, and enriching educational experiences), the results revealed that academic challenge did not have a statistically significant linear relationship with the dependent variable, self-reported academic performance.

This finding was inconsistent with the research that shows student-reported GPA is positively correlated with academic challenge (Kuh, n.d.; Kuh, 1993; Kuh, 2006; Kuh et al., 2005a, 2005b).

Furthermore, when academic challenge and students' sex were analyzed with self-reported academic performance, the results revealed a statistically significant linear relationship between both academic challenge and students' sex and the dependent variable, self-reported academic performance. On the other hand, when academic challenge and students' sex were analyzed together with the other independent variables (i.e., active and collaborative learning, student-faculty interaction, supportive campus environment, and enriching educational experiences), the results revealed that academic challenge did not have a statistically significant linear relationship with the dependent variable, self-reported academic performance. This finding was inconsistent with research that links student-reported GPA to academic challenge (Kuh, n.d.; Kuh, 1993; Kuh, 2006; Kuh et al., 2005a, 2005b). However, this particular model revealed that students' sex had a statistically significant linear relationship with the dependent variable, self-reported academic performance.

In addition, when academic challenge and students' classification were analyzed with self-reported academic performance, the results revealed that neither academic challenge nor students' classification had a statistically significant linear relationship with the dependent variable, self-reported academic performance. Similarly, when academic challenge and students' classification were analyzed together with the other independent variables (i.e., active and collaborative learning, student-faculty interaction, supportive campus environment, and enriching educational experiences), the results revealed that neither academic challenge nor students' classification had a statistically significant linear relationship with the dependent variable, self-reported academic performance. These findings were inconsistent with research

that demonstrates a link between student-reported GPA and academic challenge, with these patterns remaining constant for both first-year freshman and senior students (Kuh, n.d.; Kuh, 1993; Kuh, 2006; Kuh et al., 2005a, 2005b). Moreover, these findings suggested that the academic performance of the students who were surveyed at the institution under study was impacted by variables other than academic challenge.

With regard to active and collaborative learning, when analyzed solely with self-reported academic performance, the results revealed a statistically significant linear relationship. Moreover, when active and collaborative learning was analyzed together with the other independent variables (i.e., academic challenge, student-faculty interaction, supportive campus environment, and enriching educational experiences), the results revealed that active and collaborative learning had a statistically significant linear relationship with the dependent variable, self-reported academic performance. These findings supported the research that reveals a positive correlation between active and collaborative learning and student-reported GPA. These findings also suggested that students who participated in this study believed that active and collaborative learning, which includes asking questions in class, working with their peers on projects during and outside of class, making a class presentation, tutoring other students, and participating in a community-based project as part of a regular course, has an impact on their academic performance (Kuh, 1993; Kuh, 2006; Kuh et al., 2005a, 2005b).

Furthermore, when active and collaborative learning and students' sex were analyzed with self-reported academic performance, the results revealed a statistically significant linear relationship between both active and collaborative learning and students' sex and the dependent variable, self-reported academic performance. Moreover, when active and collaborative learning and students' sex were analyzed together with the other independent variables

(i.e., academic challenge, student-faculty interaction, supportive campus environment, and enriching educational experiences), the results revealed that active and collaborative learning and students' sex had a statistically significant linear relationship with the dependent variable, self-reported academic performance. These findings provided support to research that indicates the level of intensity and amount of effort that students invest in college activities, as well as their level of academic and social integration positively correlate to both academic and social gains (Astin, 1984; Kuh et al., 1991; Kuh, et al, 2005a, 2005b; Pace, 1982, 1984, 1990; Tinto, 1975, 1993). In addition, these findings seemed to suggest that the students who were surveyed at the institution under study were deeply involved in active and collaborative learning activities, and this intense involvement was an important contributor to their academic performance.

In addition, when active and collaborative learning and students' classification were analyzed with self-reported academic performance, the results revealed a statistically significant linear relationship between active and collaborative learning and the dependent variable, self-reported academic performance. However, students' classification did not have a statistically significant linear relationship with the dependent variable, self-reported academic performance. Similarly, when active and collaborative learning and students' classification were analyzed together with the other independent variables (i.e., academic challenge, student-faculty interaction, supportive campus environment, and enriching educational experiences), the results revealed that neither active and collaborative learning nor students' classification had a statistically significant linear relationship with the dependent variable, self-reported academic performance.

This finding was inconsistent with research that shows a link between active and collaborative learning and student-reported GPA (Kuh, n.d.; Kuh, 1993; Kuh, 2006; Kuh et al., 2005a, 2005b). Beyond that, this finding suggested that other variables, which are not included in this statistical model, might impact student-reported GPA.

With regard to student-faculty interaction, when analyzed solely with self-reported academic performance, the results revealed a statistically significant linear relationship. This finding supported research that reveals a positive correlation between student-faculty interaction and student-reported GPA (Kuh, n.d.; Kuh, 1993; Kuh, 2006; Kuh et al., 2005a, 2005b). This finding also suggested that students who participated in this study believed that interacting with faculty members, which includes discussing grades or assignments, talking with faculty about career plans, working with faculty on activities other than coursework, and receiving prompt feedback from faculty, had an impact on their academic performance (Kuh, 1993; Kuh, 2006; Kuh et al., 2005a, 2005b). However, when student-faculty interaction was analyzed together with the other independent variables (i.e., academic challenge, active and collaborative learning, supportive campus environment, and enriching educational experiences), the results revealed that student-faculty interaction did not have a statistically significant linear relationship with the dependent variable, self-reported academic performance. This finding was inconsistent with research that concludes a positive correlation exists between student-faculty interaction and student-reported GPA (Kuh, n.d.; Kuh, 1993; Kuh, 2006; Kuh et al., 2005a, 2005b).

On the other hand, when student-faculty interaction and students' sex were analyzed with self-reported academic performance, the results revealed a statistically significant linear relationship between student-faculty interaction and the dependent variable, self-reported academic performance; however, students' sex did not have a statistically significant relationship

with the dependent variable, self-reported academic performance. Moreover, when student-faculty interaction and students' sex were analyzed together with the other independent variables (i.e., academic challenge, active and collaborative learning, supportive campus environment, and enriching educational experiences), the results revealed that student-faculty interaction did not have a statistically significant linear relationship with the dependent variable, self-reported academic performance. These findings did not support the research that demonstrates a positive correlation between student-faculty interaction and student-reported GPA (Kuh, n.d.; Kuh, 1993; Kuh, 2006; Kuh et al., 2005a, 2005b). However, students' sex had a statistically significant relationship with the dependent variable, self-reported academic performance.

In addition, when student-faculty interaction and students' classification were analyzed with self-reported academic performance, the results revealed a statistically significant linear relationship between student-faculty interaction and the dependent variable, self-reported academic performance. However, students' classification did not have a statistically significant linear relationship with the dependent variable, self-reported academic performance. Beyond that, when student-faculty interaction and students' classification were analyzed together with the other independent variables (i.e., academic challenge, active and collaborative learning, supportive campus environment, and enriching educational experiences), the results revealed that neither student-faculty interaction nor students' classification had a statistically significant linear relationship with the dependent variable, self-reported academic performance. This finding was inconsistent with the research that reveals a positive correlation between student-faculty interaction and student-reported GPA (Kuh, n.d.; Kuh, 1993; Kuh, 2006; Kuh et al., 2005a, 2005b). Moreover, this finding suggested that other variables, which are not included in this statistical model, might impact student-reported GPA.

With regard to supportive campus environment, when analyzed solely with self-reported academic performance, the results revealed a statistically significant linear relationship. This finding was consistent with the research that shows a positive correlation between supportive campus environment and student-reported GPA (Kuh, n.d.; Kuh, 1993; Kuh, 2006; Kuh et al., 2005a, 2005b). This finding also suggested that students who participated in this study believed that their campus environment, which has a climate that supports students academically and socially, encourages quality relationships among all stakeholders, and fosters support to assist students with their non-academic responsibilities, had an impact on their academic performance (Kuh, 1993; Kuh, 2006; Kuh et al., 2005a, 2005b). However, when supportive campus environment was analyzed together with the other independent variables (i.e., academic challenge, active and collaborative learning, student-faculty interaction, and enriching educational experiences), the results revealed that supportive campus environment did not have a statistically significant linear relationship with the dependent variable, self-reported academic performance. This finding did not support the research that reveals a positive correlation between supportive campus environment student-reported GPA (Kuh, n.d.; Kuh, 1993; Kuh, 2006; Kuh et al., 2005a, 2005b).

On the other hand, when supportive campus environment and students' sex were analyzed with self-reported academic performance, the results revealed a statistically significant linear relationship between both supportive campus environment and sex and the dependent variable, self-reported academic performance. Conversely, when supportive campus environment and students' sex were analyzed together with the other independent variables (i.e., academic challenge, active and collaborative learning, student-faculty interaction, and enriching educational experiences), the results revealed that supportive campus environment did not have a

statistically significant linear relationship with the dependent variable, self-reported academic performance. This finding was inconsistent with the research that shows a positive correlation between supportive campus environment and student-reported academic performance (Kuh, n.d.; Kuh, 1993; Kuh, 2006; Kuh et al., 2005a, 2005b). However, students' classification had a statistically significant relationship with the dependent variable, self-reported academic performance.

In addition, when supportive campus environment and students' classification were analyzed with self-reported academic performance, the results revealed a statistically significant linear relationship between supportive campus environment and the dependent variable, self-reported academic performance. This finding supported the research that demonstrates a positive correlation between supportive campus environment and student-reported GPA (Kuh, n.d.; Kuh, 1993; Kuh, 2006; Kuh et al., 2005a, 2005b). However, students' classification did not have a statistically significant linear relationship with the dependent variable, self-reported academic performance. Beyond that, when supportive campus environment and students' classification were analyzed together with the other independent variables (i.e., academic challenge, active and collaborative learning, student-faculty interaction, and enriching educational experiences), the results revealed that neither supportive campus environment nor students' classification had a statistically significant linear relationship with the dependent variable, self-reported academic performance. This finding did not support the research that reveals a positive correlation between supportive campus environment and student-reported GPA. Moreover, this finding suggested that other variables, which are not included in this statistical model, might impact student-reported GPA.

With regard to enriching educational experiences, when analyzed solely with self-reported academic performance, the results revealed a statistically significant linear relationship. This finding was consistent with the research that demonstrates a positive correlation between enriching educational experiences and student-reported GPA (Kuh, n.d.; Kuh, 1993; Kuh, 2006; Kuh et al., 2005a, 2005b). Also, this finding suggested that the students who were surveyed in this study believed that their enriching educational experiences, which include engaging with students who have different religious beliefs, values, or political opinions; opportunities to participate in internships, study abroad, community service, extra-curricular activities, and learning communities; and being on a campus that promotes contact among students from different social, economic, and racial or ethnic backgrounds, had an impact on their academic performance (Kuh, 1993; Kuh, 2006; Kuh et al., 2005a, 2005b). However, when enriching educational experiences was analyzed together with the other independent variables (i.e., academic challenge, active and collaborative learning, student-faculty interaction, and supportive campus environment), the results revealed that enriching educational experiences did not have a statistically significant linear relationship with the dependent variable, self-reported academic performance.

Furthermore, when enriching educational experiences and students' sex were analyzed with self-reported academic performance, the results revealed that enriching educational experiences did not have a statistically significant linear relationship with the dependent variable, self-reported academic performance. These findings were not consistent with the research that demonstrates a positive correlation between enriching educational experiences and student-reported GPA. However, students' sex had a statistically significant linear relationship with the dependent variable, self-reported academic performance. Furthermore, when enriching

educational experiences and students' sex were analyzed together with the other independent variables (i.e., academic challenge, active and collaborative learning, student-faculty interaction, and supportive campus environment), the results revealed that enriching educational experiences did not have a statistically significant linear relationship with the dependent variable, self-reported academic performance. This finding did not support the research that reveals a positive correlation between enriching educational experiences and student-reported GPA. However, students' classification had a statistically significant relationship with the dependent variable, self-reported academic performance.

In addition, when enriching educational experiences and students' classification were analyzed with self-reported academic performance, the results revealed a statistically significant linear relationship between enriching educational experiences and the dependent variable, self-reported academic performance. This finding supported the research that concludes a positive correlation between enriching educational experiences and student-reported GPA (Kuh, n.d.; Kuh, 1993; Kuh, 2006; Kuh et al., 2005a, 2005b). However, students' classification did not have a statistically significant linear relationship with the dependent variable, self-reported academic performance. Beyond that, when enriching educational experiences and students' classification were analyzed together with the other independent variables (i.e., academic challenge, active and collaborative learning, student-faculty interaction, and supportive campus environment), the results revealed that neither enriching educational experiences nor students' classification had a statistically significant linear relationship with the dependent variable, self-reported academic performance. This finding was inconsistent with the research that reveals a positive correlation between enriching educational experiences and student-reported GPA.

Beyond that, this finding suggests that other variables, which are not included in this statistical model, might impact student-reported GPA.

Conclusions

Although this study was exploratory in nature, there were several conclusions that were drawn from analyzing the results of all of the statistical models that were used to answer the research questions. First, when each independent variable (i.e., academic challenge, active and collaborative learning, student-faculty interaction, supportive campus environment, and enriching educational experiences) was entered into the model separately, each had a statistically significant linear relationship with the dependent variable, self-reported academic performance. However, when all five independent variables (NSSE benchmarks) were entered into the model together, only one variable, active and collaborative learning, was found to have a statistically significant linear relationship with the dependent variable, self-reported academic performance. This revealed that, when four out of five independent variables were added to the model, they did not have an additive effect. More specifically, these variables failed to contribute to the statistical significance, relationship, or prediction of the dependent variable, self-reported academic performance. However, it is possible that the inclusion of other independent variables, or covariates, could account for additional variance in the dependent variable. Moreover, the sample size that was used in this study might have also contributed to the lack of statistical significance, relationship or prediction of the dependent variable, self-reported academic performance.

In addition, when each independent variable (i.e., academic challenge, active and collaborative learning, student-faculty interaction, supportive campus environment, and enriching educational experiences) and students' sex were entered into the model separately, four

out of six independent variables had a statistically significant linear relationship with the dependent variable, self-reported academic performance. The independent variable, enriching educational experiences, did not have a statistically significant relationship with the dependent variable, self-reported academic performance. Moreover, sex was not found to be significant when added to the model with student-faculty interaction. Similarly, when all five NSSE benchmarks along with students' sex were entered into the model, four out of five of the NSSE benchmarks did not have a statistically significant relationship with the dependent variable, self-reported academic performance. Once again, active and collaborative learning revealed a statistically significant relationship with the dependent variable, self-reported academic performance. In addition, students' sex revealed a statistically significant relationship with the dependent variable, self-reported academic performance. It can be concluded that, when four out of six independent variables were added to the model, they did not have an additive effect. More specifically, these variables failed to contribute to the statistical significance, relationship, or prediction of the dependent variable, self-reported academic performance. However, it is possible that the inclusion of other independent variables and factors could account for additional variance in the dependent variable. Moreover, the sample size that was used in this study might have also contributed to the lack of statistical significance, relationship or prediction of the dependent variable, self-reported academic performance.

Furthermore, when each independent variable (i.e., academic challenge, active and collaborative learning, student-faculty interaction, supportive campus environment, and enriching educational experiences) and students' classification were entered into the model separately, all five independent variables (NSSE benchmarks) had a statistically significant linear relationship with the dependent variable, self-reported academic performance. However,

students' classification was not found to be significant when added to the each of the models. However, when all five NSSE benchmarks along with students' classification were entered into the model, none of the five NSSE benchmarks had a statistically significant relationship with the dependent variable, self-reported academic performance. Similarly, students' classification did not reveal a statistically significant relationship with the dependent variable, self-reported academic performance. It can be concluded that, when all six of the independent variables were added to the model, they did not have an additive effect. More specifically, these variables failed to contribute to the statistical significance, relationship, or prediction of the dependent variable, self-reported academic performance. However, it is possible that the inclusion of other independent variables and factors could account for additional variance in the dependent variable. Moreover, the sample size that was used in this study might have also contributed to the lack of statistical significance, relationship or prediction of the dependent variable, self-reported academic performance.

From a broader perspective, the one NSSE benchmark that showed the most statistical significance within most statistical models was active and collaborative learning. This suggested that students strongly believed that their institution provided opportunities for them to participate in class, work with other students inside and outside of class, serve as tutors, and participate with a community-based project. However, this is not an anomaly, since HBCUs are historically known to cultivate campus environments that foster small learning communities that promote a sense of family. Although several of the other independent variables did not reveal any meaningful statistical significance, this should not be viewed negatively. It is equally worth noting the fact that several of the NSSE benchmarks overlap, in terms of the survey items within each benchmark. This could possibly explain why the statistical models were not significant

when all of the benchmarks were entered into the statistical models together. Overall, these conclusions reveal that student engagement has multi-dimensional effects. Exploring, understanding, including, and narrowing down those variables and factors that have a statistically significant linear relationship and effect on educational outcomes are certainly daunting tasks. To this end, more research has to be done to determine the impact that student engagement has on various educational outcomes of African American students attending HBCUs.

Recommendations for Policy and Practice

There are several recommendations for policy and practice that might prove beneficial in helping to improve student engagement and academic performance at the public historically Black higher education institution that was used for this study. First and foremost, higher education administrators and faculty at this institution should be more prudent in how they survey in order to identify students who are not academically and/or socially engaged. In an effort to ascertain the level of student engagement and institutional performance, there should be a university-wide effort to analyze different sources of data, using the least amount of data sets. Beyond that, more aggressive and creative efforts should be explored in order to increase survey response rates so that meaningful data can be collected, analyzed, and utilized to drive policy and practice. For future NSSE survey administrations, this institution might want to consider utilizing a more controlled approach to gathering data from students. G. D. Kuh (personal communication, September 10, 2009) described numerous challenges that he and his associates have had in their attempts to find solutions that will help HBCUs increase their historically low response rates. By changing the method by which HBCUs administer the NSSE survey, this could significantly increase their students' response rates. In addition, Kuh et al. (2005b) note that "student success must be everyone's business in order to create the conditions that

encourage and support students to engage in educationally productive activities at reasonably high levels” (p. 295). Moreover, administrators and faculty should promote a culture of learning by developing a multi-year action plan that will bring all stakeholders together with mutually supportive efforts. This action plan should promote higher levels of academic challenge by raising the bar and holding students to high expectations, while balancing this rigor with proper support. Some universities emphasize writing across the curriculum, as well as require seniors to complete a challenging project (Kuh et al., 2005a, 2005b). Beyond that, many universities make concerted efforts to ensure that students use higher-order thinking skills to complete assignments and class projects.

Furthermore, institutional policies and practices should be developed to ensure that students are actively engage in academic and social activities both inside and outside of the classroom. Kuh et al. (2005b) suggest that every student should be connected in a meaningful way with some activity or positive role model. Obstacles that may prevent students from being engaged in educationally productive activities should be extensively explored, and as early as possible, intentional efforts should be made to engage these students and enhance their college experiences. Administrators and faculty need to continue to promote activities that will help students continue to excel in the area of active and collaborative learning. Finally, students at the institution under study should be actively involved in critical conversations that shed light on factors that contribute to their engagement at the institution.

In times of financial constraint and accountability, the institution that was used for this study, as well as other institutions, should consider aligning institutional programs and policies with the institutional mission.

Targeting specific engagement practices, while implementing only a few programs, should prove more beneficial and cost-effective than implementing a host of programs and practices.

Recommendations for Further Study

The conclusions drawn from this study suggest additional areas for research. Without a doubt, student engagement is critical to a number of educational outcomes besides academic performance. Although this study explored only one educational outcome, student self-reported academic performance, it would seem quite plausible that studies which include additional variables and factors would reveal different models, as well as explore relationships involving those variables and factors. In addition, results from various types of institutional data on college impact on student success from comparative HBCUs should be analyzed. Moreover, using a mixed methodological approach might reveal additional variables and explanations regarding student engagement and various educational outcomes. This could possibly reveal previously overlooked challenges that these students face.

Beyond that, we must explore the effects that student engagement patterns have on various educational outcomes of students who attend both public and private HBCUs. Furthermore, there is a need for more longitudinal studies to explore in greater detail the experiences of African American students attending HBCUs. Lastly, because students at HBCUs have historically low response rates, other sampling and data techniques should be explored.

REFERENCES

- Aaker, D. A., Kumar, V., & Day, G. S. (1998). *Marketing research* (6th ed.). New York: Wiley.
- Adelman, C. (1999). *Answers in a toolbox: Academic intensity, attendance patterns, and bachelor's degree attainment*. Washington, D.C.: U.S. Department of Education, Office of Research and Improvement.
- Adelman, C. (2006). *The toolbox revisited: Paths to degree completion from high school to college*. Washington, D.C.: U.S. Department of Education.
- Agresti, A., & Finlay, B. (1997). *Statistical methods for the social sciences* (3rd ed.). Upper Saddle Rivers, NJ: Prentice Hall.
- Aitken, N. D. (1982). College student performance, satisfaction, and retention: Specification and estimation of structural equation model. *Journal of Higher Education*, 53, 32-50.
- Allen, W. R. (1992). The color of success: African American college student outcomes at predominantly white and historically black public colleges and universities. *Harvard Educational Review*, 62(1), 26-44.
- Allen, W. R., Epps, E., and Haniff, N. (Eds.). (1991). *College in black and white: African American students in predominantly white and in historically black public universities*. Albany, NY: State University of New York Press.
- Ascher, C. (1991). *School programs for African American male students: Trends and issues*. Washington, DC: Office of Educational Research and Improvement. (ERIC Document Reproduction Service No. ED334338). Retrieved January 19, 2008, from ERIC database.
- Association of American Colleges and Universities. (2002). *Greater expectations: A new vision for learning as a nation goes to college*. Washington, DC.
- Astin, A. W. (1970). The methodology of research on college impact, part one. *Sociology of Education*, 43(3), 223-254.
- Astin, A. W. (1973). The impact of dormitory living on students. *Educational Record*, 54, 204-210.

- Astin, A. W. (1977). *Four critical years: Effects of college on beliefs, attitudes, and knowledge*. San Francisco: Jossey-Bass.
- Astin, A. W. (1984). Student involvement: A developmental theory for higher education. *Journal of College Student Development*, 25(4), 297-308.
- Astin, A. W. (1985). Involvement: The cornerstone of excellence. *Change*, 17(4), 35-39.
- Astin, A. W. (1991). The changing American college student: Implications for educational policy and practice. *Higher Education*, 22(2), 129-143.
- Astin, A. W. (1993a). What matters in college? *Liberal Education*, 79(4), 4-15.
- Astin, A. W. (1993b). *What matters in college? Four critical years revisited* (1st ed.). San Francisco: Jossey-Bass.
- Banta, T. W. (2002). Characteristics of effective outcomes assessment: Foundations and examples. In T. W. Banta (Ed.), *Building a scholarship of assessment* (pp. 261-283). San Francisco: Jossey-Bass.
- Barr, R. B., & Tagg, J. (1995). From teaching to learning: A new paradigm for undergraduate education. *Change*, 27(6), 12-25.
- Bean, J. P. (1980). Dropouts and turnover: The synthesis and test of a causal model of student attrition. *Research in Higher Education*, 12(2), 155-187.
- Bean, J. P. (1985). Interaction effects based on class level in an exploratory model of college student dropout syndrome. *American Educational Research Journal*, 22, 35-64.
- Bean, J. P. (1990). Why students leave: Insights from research. In D. Hossler & J. P. Bean (Eds.), *The strategic planning of college enrollments* (pp. 147-169). San Francisco: Jossey-Bass.
- Bean, J. P., & Bradley, R. (1986). Untangling the satisfaction-performance relationship for college students. *Journal of Higher Education*, 57(4), 393-412.
- Bean, J. P., & Kuh, G. D. (1984). The reciprocity between student-faculty informal contact and the academic performance of university students. *Research in Higher Education*, 21(4), 461-477.
- Berger, J. B. (2002). The influence of the organizational structures of colleges and universities on college student learning. *Peabody Journal of Education*, 77(3), 40-59.
- Berger, J. B., & Milem, J. F. (2000). Organizational behavior in higher education and student outcomes. In J. C. Smart (Ed.), *Higher education: Handbook of theory and research* (Vol. 15, pp. 268-338). New York: Agathon.

- Birnbaum, R. (1988). *How colleges work: The cybernetics of academic organization and Leadership* (1st ed.). San Francisco: Jossey-Bass.
- Bliming, G. S. (1989). A meta-analysis of the influence of college residence halls on academic performance. *Journal of College Student Development*, 30(4), 298-308.
- Bloom, B. (1956). *Taxonomy of educational objectives: The classification of educational goals: Handbook I. Cognitive domain*. London: Longmans, Green.
- Bolman, L. G., & Deal, T. E. (2003). *Reframing organizations: Artistry, choice, and leadership* (3rd ed.). San Francisco: Jossey-Bass.
- Bowen, H. (1977). *Investment in learning: The individual and social value of American higher education*. San Francisco: Jossey-Bass.
- Boyer, E. (1987). *College: The undergraduate experience in America*. New York: Harper & Row.
- Boylan, H., Bliss, L. B., & Bonbam, B. S. (1994). The performance of minority students in developmental education. In M. Maxwell (Ed.), *From access to success: A book of readings on college developmental education and learning assistance programs* (pp. 311-318). Clearwater, FL: H & H.
- Boylan, H., Bliss, L. B. & Bonbam, B. S. (1997). Program components and their relationship to student performance. *Journal of Developmental Education*, 20(3), 2-12.
- Bradburn, N. M., & Sudman, S. (1988). *Polls and surveys: Understanding what they tell us*. San Francisco: Jossey-Bass.
- Branson, H. R. (1987). The hazards of black higher education: Program and commitment needs. *Journal of Negro Education*, 56(2), 10-12.
- Braxton, J. M. (2000). (Ed.). *Reworking the student departure puzzle*. Nashville, TN: Vanderbilt University Press.
- Braxton, J. M., & McClendon, S. A. (2001-02). The fostering of social integration and retention through institutional practice. *Journal of College Student Retention: Research, Theory, & Practice*, 3(1), 57-71.
- Braxton, J. M., McKinney, J. S., & Reynolds, P. J. (2006, Summer). Cataloging institutional efforts to understand and reduce college student departure. *New Directions for Institutional Research*, 130, 25-32.

- Brossoit, L. A. (1999). *An examination of the relationship of living on campus during the first year in college to the persistence and retention of African American students at predominantly white colleges in Massachusetts*. Ed.D. dissertation, University of Massachusetts. Retrieved February 5, 2008, from ProQuest Digital Dissertations. (AAT 9951869)
- Bruffee, K. A. (1993). *Collaborative learning: Higher education, interdependence, and the authority of knowledge*. Baltimore: Johns Hopkins University Press.
- Bryman, A., & Cramer, D. (1990). *Quantitative data analysis for social scientists*. New York: Routledge.
- Chenoweth, K. (1999). HBCUs tackle the knotty problem of retention. *Black Issues in Higher Education*, 48(26), 38-41.
- Chickering, A. W. (1969). *Education and identity*. San Francisco: Jossey-Bass.
- Chickering, A. W. (1974). *Commuting versus resident students*. San Francisco: Jossey-Bass.
- Chickering, A. W., & Gamson, Z. F. (1987). Seven principles for good practice in undergraduate education. *AAHE Bulletin*, 39(7), 3-7.
- Chickering, A. W., & Reisser, L. (1993). *Education and identity* (2nd ed.). San Francisco: Jossey-Bass.
- Choy, S. P. (2002). *Access & persistence: Findings from 10 years of longitudinal research on students*. Washington, DC: American Council on Education.
- Collins, J. C. (2001). *Good to great: Why some companies make the leap—and others don't*. New York: Harper Business.
- Conley, D. T. (2006). What we must do to create a system that prepares students for college success. *Policy Perspectives*. San Francisco: WestEd.
- Constantine, J. M. (1995). The effects of attending historically black colleges and universities on future wages of black students. *Industrial and Labor Relations Review*, 48(3), 121-134.
- Converse, J. M., & Presser, S. (1989). *Survey questions: Handcrafting the standardized questionnaire*. Newbury Park, CA: Sage.
- Cramer, D., & Howitt, D. (2004). *The sage dictionary of statistics*. London: Sage.
- Credle, J. O., & Dean, G. J. (1991). A comprehensive model for enhancing black student retention in higher education. *Journal of Multicultural Counseling & Development*, 19(4), 158-165.

- Cresswell, J. W. (2002). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research*. Upper Saddle River, NJ: Merrill-Prentice Hall.
- Cuseo, J. B. (2000). *Assessment of the first-year experience: Six significant questions*. Retrieved December 9, 2007, from <http://www.sc.edu/fye/resources/assessment/pdf/Cuseos6Qs-web.pdf>
- Darlington, R. B. (1990). *Regression and linear models*. New York: McGraw-Hill.
- DeNisi, A. S., & Shaw, J. B. (1977). Investigation of the uses of self-reports of abilities. *Journal of Applied Psychology*, 62, 641-644.
- DeSousa, J. D. (2001). Re-examining the educational pipeline for African American students. In L. Jones (Ed.), *Retaining African-American students: Challenging paradigms for retaining students, faculty & administrators* (1st ed., pp. 21-44). Sterling, VA: Stylus.
- DeSousa, J. D., & Kuh, G. D. (1996). Does institutional racial composition make a difference in what black students gain from college? *Journal of College Student Development*, 37(3), 257-267.
- Douglas, K. B. (1998). Impressions: African American first-year students' perceptions of a predominantly white university. *Journal of Negro Education*, 67(4), 416-431.
- Ehrenberg, R. G., & Rothstein, D. S. (1994). Do historically black institutions of higher education confer unique advantages on black students? An initial analysis. In R. G. Ehrenberg (Ed.), *Choices and consequences: Contemporary policy issues in education* (pp. 89-137). Ithaca, NY: ILR.
- Elliott, A. C., & Woodward, W. A. (2007). *Statistical analysis quick reference guidebook: With SPSS examples*. Thousand Oaks, CA: Sage.
- Elmers, M. T., & Pike, G. R. (1997). Minority and nonminority adjustment to college: Differences or similarities. *Research in Higher Education*, 38(1), 77-97.
- Ewell, P. T. (1984). *The self-regarding institution: Information for excellence*. Boulder, CO: National Center for Higher Education Management Systems.
- Ewell, P. T. (1989). Institutional characteristics and faculty/administrator perceptions of outcomes: An exploratory analysis. *Research in Higher Education*, 30(2), 113-136.
- Feagin, J. R., & Sikes, M. P. (1995). How black students cope with racism on white campuses. *Journal of Blacks in Higher Education*, 8, 91-97.
- Feagin, J. R., Vera, H., & Imani, N. (1996). *The agony of education: Black students at white colleges and universities*. New York: Routledge.

- Feldman, K. A., & Newcomb, T. M. (1969). *The impact of college on students*. (1st ed.). San Francisco: Jossey-Bass.
- Feldman, R. S. (1997). *Development across the life span*. Upper Saddle River, NJ: Prentice Hall.
- Fleming, J. (1984). *Blacks in college: A comparative study of students' success in black and white institutions* (1st ed.). San Francisco: Jossey-Bass.
- Foster, J., Barkus, E., & Yavorsky, C. (2006). *Understanding and using advanced statistics*. London: Sage.
- Freeman, K. (1999). *The race factor in African Americans' college choice*. *Urban Education*, 34(1), 4-25.
- Fries-Britt, S., & Turner, B. (2002). Uneven stories: Successful black collegians at a black and white campus. *Review of Higher Education*, 25(3), 315-330.
- Gall, J. P., Gall, M. D., & Borg, W. R. (1999). *Applying educational research: A practical guide* (4th ed.). New York: Longman.
- Gardner, J. N. (2001). The jury is in. In R. L. Swing (Ed.), *Proving and improving: Strategies for assessing the first college year (monograph no. 33)* (pp. 111-116). Columbia, SC: University of South Carolina, National Resource Center for The First-Year Experience and Students in Transition.
- Gardner, J. N., Barefoot, B. O., Swing, R. L. (2001). *Guidelines for evaluating the first-year experience at four-year colleges* (2nd ed.). Columbia, SC: University of South Carolina, National Resource Center for The First-Year Experience and Students in Transition.
- Giles-Gee, H. F. (1989). Increasing the retention of black students: A multimethod approach. *Journal of College Student Development*, 30(3), 196-200.
- Goodsell, A. S., Maher, M., & Tinto, V. (1992). *Collaborative learning: A sourcebook for higher education*. Vol. 1. University Park, PA: National Center on Postsecondary Teaching, Learning, and Assessment.
- Gonyea, R. M. (2005). *The relationship between student engagement and selected desirable undergraduate outcomes in the first year of college*. Ed.D. dissertation, Indiana University. Retrieved January 23, 2008, from ProQuest Digital Dissertations. (AAT 3173528)
- Gonyea, R. M., Kish, K., Kuh, G. D., Muthiah, R., & Thomas, A. (2003). *CSEQ: Norms for the fourth edition*. Bloomington, IN: Indiana University Center for Postsecondary Research, Policy, and Planning.

- Graff, R. W., & Cooley, G. R. (1970). Adjustment of commuter and resident students. *Journal of College Student Development, 11*, 54-57.
- Gray, P. J. (1997). Viewing assessment as an innovation: Leadership and the change process. *New Directions for Higher Education, 25*(4), 5-15.
- Hall, R. E., & Rowan, G. T. (2001). African American males in higher education: A descriptive analysis/qualitative analysis. *Journal of African American Men, 5*(3), 3-14.
- Hansford, B. C., & Hattie, J. A. (1982). The relationship between self and achievement/performance measures. *Review of Educational Research, 52*, 123-142.
- Hoffman, K., Llagas, C., & Snyder, T. D. (2003). *Status and trends in the education of blacks* (NCES 2003-04). U.S. Department of Education, Institute for Education Sciences. Washington, DC: National Center for Education Statistics.
- Homer, D. W., & Lemeshow, S. (2000). *Applied logistic regression* (2nd ed.). New York: Wiley.
- Hu, S., & Kuh, G. D. (2002). Being (dis)engaged in educationally purposeful activities: The influence of student and institutional characteristics. *Research in Higher Education, 43*(5), 555-575.
- Huba, M. E., & Freed, J. E. (2000). *Learner-centered assessment on college campuses: Shifting the focus from teaching to learning*. Boston: Allyn and Bacon.
- Hurtado, S. (1992). The campus racial climate: Contexts of conflict. *Journal of Higher Education, 63*(5), 539-569.
- Hurtado, S., Inkelas, K., Briggs, C., & Rhee, B. S. (1997). Differences in college access and choice among racial/ethnic groups: Identifying continuing barriers. *Research in Higher Education, 37*(2), 135-157.
- Jackson, C. L. (2001). *African American education: A reference handbook*. Santa Barbara, CA: ABC-CLIO.
- Jackson, C. L., & Nunn, E. F. (2003). *Historically black colleges and universities: A reference handbook*. Santa Barbara, CA: ABC-CLIO.
- Johnson, D. W., Johnson, R. T., & Smith, K. A. (1991). Cooperative learning: Increasing college faculty instruction productivity. *ASHE-ERIC Higher Education Reports, 20*(4). Washington, DC: The George Washington University, School of Education and Human Development.

- Kezar, A., & Kinzie, J. (2006). Examining the ways institutions create student engagement: The role of mission. *Journal of College Student Development, 47*(2), 149-172.
- Koljatic, M., & Kuh, G. D. (2001). A longitudinal assessment of college student engagement in good practices in undergraduate education. *Higher Education, 42*, 351-371.
- Kuh, G. D. (n.d.). *The national survey for student engagement: Conceptual framework and overview of psychometric properties*. Bloomington, IN: Indiana University Center for Postsecondary Research and Planning.
- Kuh, G. D. (1981). Indices of quality in the undergraduate experience. *AAHE-ERIC Higher Education Research Reports, 10*(4), 1-43.
- Kuh, G. D. (1993). In their own words: What students learn outside the classroom. *American Educational Research Journal, 30*(2), 277-304.
- Kuh, G. D. (1999). A framework for understanding student affairs work. *Journal of College Student Development, 40*(5), 530-537.
- Kuh, G. D. (2001). Assessing what really matters to student learning: Inside the national survey of student engagement. *Change, 33*(3), 10-17, 66.
- Kuh, G. D. (2006). Built to engage: Liberal arts colleges and effective educational practice. In F. Oakely (Ed.), *Liberal Arts Colleges in American Higher Education* (pp. 122-150). New York: American Council of Learned Societies.
- Kuh, G. D., & Hu, S. (1999). Unraveling the complexity of the increase in college grades from the mid-1980s to the mid-1990s. *Educational Evaluation and Policy Analysis, 21*(3), 1-24.
- Kuh, G. D., Kinzie, J., Buckley, J. A., Bridges, B. K., & Hayek, J. C. (2007). Piecing together the student success puzzle: Research, propositions, and recommendations. *ASHE Higher Education Report 32*. San Francisco: Jossey-Bass.
- Kuh, G. D., Kinzie, J., Schuh, J. H., & Whitt, E. J. (2005a). *Assessing conditions to enhance educational effectiveness: The inventory for student engagement and success*. San Francisco: Jossey-Bass.
- Kuh, G. D., Kinzie, J., Schuh, J. H., & Whitt, E. J. (2005b). *Student success in college: Creating conditions that matter*. San Francisco: Jossey-Bass.
- Kuh, G. D., Pace, C. R., & Vesper, N. (1997). The development of process indicators to estimate student gains associated with good practices in undergraduate education. *Research in Higher Education, 38*(4), 435-454.

- Kuh, G. D., Schuh, J. H., Whitt, E. J., Andreas, R., Lyons, J., Strange, C. C., Krehbiel, L. E., et al. (1991). *Involving colleges: Successful approaches to fostering student learning and development outside the classroom*. San Francisco: Jossey-Bass.
- Kuh, G. D., Vesper, N., Connolly, M. R., & Pace, C. R. (1997). *College student experiences questionnaire: Revised norms for the third edition*. Bloomington, IN: Indiana University Center for Postsecondary Research and Planning.
- Kuh, G. D., & Whitt, E. J. (1988). *The invisible tapestry: Culture in American colleges and universities*. ASHE-ERIC Higher Education Report No. 1. Washington, DC: The George Washington University, School of Education and Human Development.
- Laing, J., Swayer, R., & Noble, J. (1989). Accuracy of self-reported activities and accomplishments of college-bound seniors. *Journal of College Student Development*, 29, 362-368.
- Lamport, M. A. (1993). Student-faculty interaction and the effect on college student outcomes: A review of literature. *Adolescence*, 28(112), 971-990.
- Laszloffy, T. A. (2000). From insight to action: An exploratory study of the experiences of African American students within a PWU. *Equity & Excellence in Education*, 33(3), 13-20.
- Lloyd-Jones, B. (1992). *From inclusion to assimilation? African-American students' persistence at a predominantly white university*. Ph.D. dissertation, The University of Tulsa. Retrieved February 16, 2008, from ProQuest Digital Dissertations. (AAT 9222151)
- Love, B. J. (1993). Issues and problems in the retention of black students in predominantly white institutions of higher education. *Access & Equity*, 26(1), 27-36.
- Lowman, R. L., & Williams, R. E. (1987). Validity of self-ratings of abilities and competencies. *Journal of Vocational Behavior*, 31, 1-13.
- Lucas, C. J. (1994). *American higher education: A history*. New York: St. Martin.
- Miller, A. H., Imrie, B. W., & Cox, K. (1998). *Student assessment in higher education: A handbook for assessing performance*. London: Kogan Page.
- Mitchell-Kernan, C. (1990). *Conveying issues in African American studies in higher education*. CAAS Report. UCLA Center for African American Studies, 10-17.
- Moody, R. (1993). Motivation, learning strategies, and personality. *Journal of the Freshman Year Experience*, 5(1), 37-75.
- Moore, C., & Carpenter, W. C. (1985). *African presence in the Americas*. Trenton, NJ: Africa World Press.

- Morley, K. M. (2003-04). Fitting in by race/ethnicity: The social and academic integration of diverse students at a large predominantly white university. *Journal of College Student Retention*, 5(2), 147-174.
- National Survey of Student Engagement (2005a, November). *Exploring the different dimensions of student engagement. 2005 annual survey results*. Bloomington, IN: Indiana University Center for Postsecondary Research and Planning.
- National Survey of Student Engagement (2005b, November). *Viewpoint*. Bloomington, IN: Indiana University Center for Postsecondary Research and Planning.
- Nettles, M. T., & Perna, L. W. (1997). *African American education date book: Volume 1. Higher education and adult education*. Washington, DC: Frederick D. Patterson Research Institute of the College Fund/UNCF.
- Outcalt, C. L., & Skewes-Cox, T. E. (2002). Involvement, interaction, and satisfaction: The human environment at HBCUs. *Review of Higher Education*, 25(3), 331-347.
- Pace, C. R. (1964). *The influence of academic and student subcultures in college and university environments*. Los Angeles: University of California.
- Pace, C. R. (1974). *Demise of diversity? A comparative profile of eight types of institutions*. New York: McGraw-Hill.
- Pace, C. R. (1982, May). *Achievement and the quality of student effort*. Paper presented at the National Commission on Excellence in Education (ED), Washington, DC. (ERIC Document Reproduction Service No. ED227101). Retrieved January 27, 2008, from ERIC database.
- Pace, C. R. (1984). *Measuring the quality of college student experiences*. Los Angeles: University of California, Los Angeles, Graduate School of Education, Higher Education Research Institute, Project on the Study of Quality in Undergraduate Education.
- Pace, C. R. (1985). *The credibility of student self-reports*. Los Angeles: University of California, Los Angeles, Center for the Study of Evaluation.
- Pace, C. R. (1988). *Measuring the quality of college student experiences* (Rev. ed.). Los Angeles, CA: University of California, Los Angeles, Center for the Study of Evaluation.
- Pace, C. R. (1990). *The undergraduates: A report of their activities and college experiences in the 1980s*. Los Angeles: Center for the Study of Evaluation, University of California, Los Angeles, Graduate School of Education.
- Pascarella, E. T. (1980). Student-faculty informal contact and college outcomes. *Review of Educational Research*, 50(4), 545-595.

- Pascarella, E. T. (1984). Reassessing the effect of living on campus versus commuting to college: A causal modeling approach. *Review of Higher Education, 7*, 247-260.
- Pascarella, E. T. (1985). College environmental influences on learning and cognitive development: A critical review and synthesis. In J. C. Smart (Ed.), *Higher education: Handwork of theory and research* (Vol. 1, pp. 1-61). New York: Agathon.
- Pascarella, E. T., Bohr, L., Nora, A., Zusman, B., Inman, P., & Desler, M. (1993). Cognitive impacts of living on campus versus commuting to college. *Journal of College Student Development, 34*(3), 216-220.
- Pascarella, E. T., & Chapman, D. (1983). A multi-institutional, path analytic validation of Tinto's model of college withdrawal. *American Educational Research Journal, 20*(1), 87-102.
- Pascarella, E. T., Smart, J. C., & Ethington, C. A. (1986). Long-term persistence of two-year college students. *Research in Higher Education, 24*(1), 47-71.
- Pascarella, E. T., & Terenzini, P. T. (1976). Informal interaction with faculty and freshman ratings of academic and non-academic experience of college. *Journal of Educational Research, 70*(1), 35-41.
- Pascarella, E. T., & Terenzini, P. T. (1979). Student-faculty informal contact and college persistence: A further investigation. *Journal of Educational Research, 72*(4), 214-218.
- Pascarella, E. T., & Terenzini, P. T. (1983). Predicting voluntary freshman year persistence/withdrawal behavior in a residential university: A path analytic validation of Tinto's model. *Journal of Educational Psychology, 75*(2), 215-226.
- Pascarella, E. T., & Terenzini, P. T. (1991). *How college affects students*. San Francisco: Jossey-Bass.
- Pascarella, E. T., & Terenzini, P. T. (1998). Studying college students in the 21st century: Meeting new challenges. *The Review of Higher Education, 21*(2), 151-165.
- Pascarella, E. T., & Terenzini, P. T. (2005). *How college affects students: A third decade of research*. San Francisco: Jossey-Bass.
- Phelps, R. E., Tranakos-Howe, S., Dagley, J. C., & Lyn, M. K. (2001). Encouragement and ethnicity in African American college students. *Journal of Counseling & Development, 79*(1), 90-97.
- Pike, G. R. (1989). Background, college experience, and The ACT-COMP exam: Using construct validity to evaluate assessment instruments. *Review of Higher Education, 13*, 91-117.

- Pike, G. R. (1993). The relationship between perceived learning and satisfaction with college: An alternative view. *Research in Higher Education*, 34(1): 23-40.
- Pike, G. R. (1995). The relationships between self-reports of college experiences and achievement test scores. *Research in Higher Education*, 36, 1-22.
- Pike, G. R. (2006a). The convergent and discriminant validity of NSSE scalelet scores. *Journal of College Student Development*, 47(5), 550-563.
- Pike, G. R. (2006b). The dependability of NSSE scalelets for college- and department-level assessment. *Research in Higher Education*, 47(2), 177-195.
- Pulliam, J. D. (1991). *History of education in America* (5th ed.). New York: Macmillan.
- Redd, K. E. (1998). Historically black colleges and universities: Making a comeback. *New Directions for Higher Education*, 102, 33-43.
- Rendon, L. I., Jalomo, R. E., & Nora, A. (2000). Theoretical considerations in the study of minority student retention in higher education. In J. Braxton (Ed.), *Rethinking the departure puzzle: New theory and research on college student retention* (pp. 127-156). Nashville, TN: Vanderbilt University Press.
- Roebuck, J. B., & Murty, K. S. (1993). *Historically black colleges and universities: Their place in higher education*. Westport, CT: Praeger.
- Ross, M. J. (1995). *Factors contributing to African American students' success at an historically black college*. Ph.D. dissertation, University of Miami. Retrieved March 9, 2008, from ProQuest Digital Dissertations. (AAT 9537956)
- Rowser, J. F. (1997). Do African American students' perceptions of their needs have implications for retention. *Journal of Black Studies*, 27(5), 718-726.
- Samaras, A. P. (2000). Scaffolding preservice teachers' learning. In N. J. Yelland (Ed.), *Promoting meaningful learning: Innovations in early childhood professional* (pp. 17-24). Washington, DC: National Association for the Education of Young Children.
- Sax, L. J., Astin, A. W., Korn, W. S., & Mohoney, K. (1997). *The American college freshman*. Los Angeles: University of California, Los Angeles, Higher Education Research Institute.
- Sedgwick, C. (2000). *The impact of desegregation legislation and litigation on historically black colleges and universities*. Ph.D. dissertation, University of Virginia. Retrieved March 2, 2008, from ProQuest Digital Dissertations. (AAT 9975435)

- Shapiro, H. T. (1997). Cognition, character, and culture in undergraduate education: Rhetoric and reality. In R. G. Ehrenbert (Ed.), *The American university: National treasure or endangered species?* (pp. 58-99). Ithaca, NY: Cornell University Press.
- Sherman, T. M., Giles, M. B., & Williams-Green, J. (1994). Assessment and retention of black students in higher education. *Journal of Negro Education, 63*(2), 164-180.
- Slater, R. B. (1996). The first black graduates of the nation's 50 flagship state universities. *Journal of Blacks in Higher Education, 13*, 72-85.
- Sorcinelli, M. D. (1991). Research findings on the seven principles. *New Directions for Teaching and Learning, 47*, 13-25.
- Spicer, J. (2005). *Making sense of multivariate data analysis*. London: Sage.
- St. John, E. P. (2002). *The access challenge: Rethinking the causes of the new inequality* (Policy Issues Report). Bloomington, IN: Indiana University, Education Policy Center.
- Stevens, J. (2002). *Applied multivariate statistics for the social sciences*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Szenlenyi, K. (2001). Minority student retention and academic achievement in community college. (ERIC Document Reproduction Service No. ED4518959). Retrieved March 9, 2008, from ERIC database.
- Tacq, J. (1997). *Multivariate analysis techniques in social science research: From problem to analysis*. London: Sage.
- Tagg, J. (2003). *The learning paradigm college*. Bolton, MA: Anker.
- Terenzini, P. T. (1995). Influences affecting the development of students' critical thinking skills. *Research in Higher Education, 36*(1), 23-39.
- Terenzini, P. T., Lorang, W., & Pascarella, E. T. (1981). Predicting freshman persistence and voluntary dropout decisions: A replication. *Research in Higher Education, 15*, 109-127.
- Terenzini, P. T., Pascarella, E. T., & Blimling, G. S. (1996). Students' out-of-class experiences and their influence on learning and cognitive development: A literature review. *Journal of College Student Development, 37*(2), 149-162.
- Terenzini, P. T., Springer, L., Pascarella, E. T., & Nora, A. (1995). Academic and out-of-class influences on students' intellectual development. *Review of Higher Education, 19*(1), 23-44.

- Terenzini, P. T., Yaeger, P. M., Bohr, L., Pascarella, E. T., & Nora, A. (1997). *African American college students' experiences in HBCUs and PWIs and learning outcomes*. University Park, PA: National Center on Postsecondary Teaching, Learning, and Assessment.
- Thomas, A. E., & Green, R. L. (2001). Historically black colleges and universities: An irreplaceable national treasure. In C. L. Jackson (Ed.), *African American education: A reference handbook* (pp. 245-265). Santa Barbara, CA: ABC-CLIO.
- Thomas, R., Chickering, A. W. (1984). Education and identity revisited. *Journal of College Student Development*, 25, 392-399.
- Tierney, W. G. (1999). *Building the responsive campus: Creating high performance colleges and universities*. Thousand Oaks, CA: Sage.
- Tinto, V. (1975). Dropout from higher education: A theoretical synthesis of recent research. *Review of Educational Research*, 45, 89-125.
- Tinto, V. (1987). *Leaving college: Rethinking the causes and cures of student attrition*. Chicago: University of Chicago Press.
- Tinto, V. (1993). *Leaving college: Rethinking the causes and cures of student attrition* (2nd ed.). Chicago: University of Chicago Press.
- Toutkoushian, R. K., & Smart, J. C. (2001). Do institutional characteristics affect student gains from college? *Review of Higher Education*, 25, 39-61.
- Umbach, P. D., & Wawrzynski, M. R. (2005). Faculty do matter: The role of college faculty in student learning and engagement. *Research in Higher Education*, 46(2), 153-184.
- Upcraft, M. L., Gardner, J. N., & Associates (Eds.). (1989). *The freshman year experience*. San Francisco: Jossey-Bass.
- Upcraft, M. L., & Schuh, J. H. (1996). *Assessment in student affairs: A guide for practitioners*. San Francisco: Jossey-Bass.
- Vogt, W. P. (1999). *Dictionary of statistics and methodology: A non-technical guide for the social sciences*. Thousand Oaks, CA: Sage.
- Wallace, D. L., & Bell, A. (1999). Being black at a predominantly white university. *College English*, 61(3), 307-327.
- Watson, L. W., & Kuh, G. D. (1996). The influence of dominant race environments on student involvement, perceptions, and educational gains: A look at historically black and predominantly white liberal arts institutions. *Journal of College Student Development*, 37(4), 415-424.

- Weidman, J. C. (1989). Undergraduate socialization: A conceptual approach. In J. C. Smart (Ed.), *Higher Education: Handbook of Theory and Research* (Vol. 5, pp. 289-322). New York: Agathon.
- Welty, J. D. (1976). Resident and commuter students: Is it only the living situation? *Journal of College Student Personnel*, 17, 465-468.
- Wentland, E. J., & Smith, K. W. (1993). *Survey responses: An evaluation of their validity*. New York: Academic Press.
- Wilson, M. (2000). Reversing the plight of African American male college students. *Black Issues in Higher Education*, 17(18), 175.
- Wilson, R. J., Anderson, S. A., & Fleming, W. M. (1987). Commuter and resident students' personal and family adjustments. *Journal of College Student Personnel*, 28, 229-233.
- Wilson, R. C., Gaff, J. C., Dienst, R. E., Wood, L., & Bavry, J. L. (1975). *College professors and their impact on students*. New York: Wiley-Interscience.
- Winder, J. H. (1995). *Feelings of alienation of African-American college students at predominantly white and historically black universities: A comparative study*. Ph.D. dissertation, University of New Orleans. Retrieved February 16, 2008, from ProQuest Digital Dissertations. (AAT 9603397)
- Wingspread Group on Higher Education. (1993). *An American imperative: Higher expectations for higher education*. Milwaukee, WI: Johnson Foundation.
- Zhao, C. M., & Kuh, G. D. (2004). Adding value: Learning communities and student engagement. *Research in Higher Education*, 45(2), 115-138.

APPENDIX A

The National Survey of Student Engagement 2008



National Survey of Student Engagement 2008

The College Student Report

1 In your experience at your institution during the current school year, about how often have you done each of the following? Mark your answers in the boxes. Examples: or

	Very often	Often	Some- times	Never
a. Asked questions in class or contributed to class discussions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Made a class presentation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Prepared two or more drafts of a paper or assignment before turning it in	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Worked on a paper or project that required integrating ideas or information from various sources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Included diverse perspectives (different races, religions, genders, political beliefs, etc.) in class discussions or writing assignments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Come to class without completing readings or assignments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Worked with other students on projects during class	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. Worked with classmates outside of class to prepare class assignments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. Put together ideas or concepts from different courses when completing assignments or during class discussions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j. Tutored or taught other students (paid or voluntary)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k. Participated in a community-based project (e.g., service learning) as part of a regular course	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
l. Used an electronic medium (listserv, chat group, Internet, instant messaging, etc.) to discuss or complete an assignment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
m. Used e-mail to communicate with an instructor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
n. Discussed grades or assignments with an instructor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
o. Talked about career plans with a faculty member or advisor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
p. Discussed ideas from your readings or classes with faculty members outside of class	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
q. Received prompt written or oral feedback from faculty on your academic performance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Very often	Often	Some- times	Never
r. Worked harder than you thought you could to meet an instructor's standards or expectations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
s. Worked with faculty members on activities other than coursework (committees, orientation, student life activities, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
t. Discussed ideas from your readings or classes with others outside of class (students, family members, co-workers, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
u. Had serious conversations with students of a different race or ethnicity than your own	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
v. Had serious conversations with students who are very different from you in terms of their religious beliefs, political opinions, or personal values	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2 During the current school year, how much has your coursework emphasized the following mental activities?

	Very much	Quite a bit	Some	Very little
a. Memorizing facts, ideas, or methods from your courses and readings so you can repeat them in pretty much the same form	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Analyzing the basic elements of an idea, experience, or theory, such as examining a particular case or situation in depth and considering its components	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Synthesizing and organizing ideas, information, or experiences into new, more complex interpretations and relationships	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Making judgments about the value of information, arguments, or methods, such as examining how others gathered and interpreted data and assessing the soundness of their conclusions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Applying theories or concepts to practical problems or in new situations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

9 About how many hours do you spend in a typical 7-day week doing each of the following?

- a. Preparing for class (studying, reading, writing, doing homework or lab work, analyzing data, rehearsing, and other academic activities)
- 0 1-5 6-10 11-15 16-20 21-25 26-30 More than 30
- Hours per week
- b. Working for pay **on campus**
- 0 1-5 6-10 11-15 16-20 21-25 26-30 More than 30
- Hours per week
- c. Working for pay **off campus**
- 0 1-5 6-10 11-15 16-20 21-25 26-30 More than 30
- Hours per week
- d. Participating in co-curricular activities (organizations, campus publications, student government, fraternity or sorority, intercollegiate or intramural sports, etc.)
- 0 1-5 6-10 11-15 16-20 21-25 26-30 More than 30
- Hours per week
- e. Relaxing and socializing (watching TV, partying, etc.)
- 0 1-5 6-10 11-15 16-20 21-25 26-30 More than 30
- Hours per week
- f. Providing care for dependents living with you (parents, children, spouse, etc.)
- 0 1-5 6-10 11-15 16-20 21-25 26-30 More than 30
- Hours per week
- g. Commuting to class (driving, walking, etc.)
- 0 1-5 6-10 11-15 16-20 21-25 26-30 More than 30
- Hours per week

10 To what extent does your institution emphasize each of the following?

- | | Very much | Quite a bit | Some | Very little |
|--|--------------------------|--------------------------|--------------------------|--------------------------|
| a. Spending significant amounts of time studying and on academic work | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Providing the support you need to help you succeed academically | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Encouraging contact among students from different economic, social, and racial or ethnic backgrounds | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Helping you cope with your non-academic responsibilities (work, family, etc.) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Providing the support you need to thrive socially | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| f. Attending campus events and activities (special speakers, cultural performances, athletic events, etc.) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| g. Using computers in academic work | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

11 To what extent has your experience at this institution contributed to your knowledge, skills, and personal development in the following areas?

- | | Very much | Quite a bit | Some | Very little |
|--|--------------------------|--------------------------|--------------------------|--------------------------|
| a. Acquiring a broad general education | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Acquiring job or work-related knowledge and skills | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Writing clearly and effectively | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Speaking clearly and effectively | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Thinking critically and analytically | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| f. Analyzing quantitative problems | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| g. Using computing and information technology | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| h. Working effectively with others | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| i. Voting in local, state, or national elections | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| j. Learning effectively on your own | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| k. Understanding yourself | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| l. Understanding people of other racial and ethnic backgrounds | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| m. Solving complex real-world problems | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| n. Developing a personal code of values and ethics | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| o. Contributing to the welfare of your community | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| p. Developing a deepened sense of spirituality | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

12 Overall, how would you evaluate the quality of academic advising you have received at your institution?

- Excellent
- Good
- Fair
- Poor

13 How would you evaluate your entire educational experience at this institution?

- Excellent
- Good
- Fair
- Poor

14 If you could start over again, would you go to the same institution you are now attending?

- Definitely yes
- Probably yes
- Probably no
- Definitely no

15 Write in your year of birth: 1 9

16 Your sex:
 Male Female

17 Are you an international student or foreign national?
 Yes No

18 What is your racial or ethnic identification? (Mark only one.)
 American Indian or other Native American
 Asian, Asian American, or Pacific Islander
 Black or African American
 White (non-Hispanic)
 Mexican or Mexican American
 Puerto Rican
 Other Hispanic or Latino
 Multiracial
 Other
 I prefer not to respond

19 What is your current classification in college?
 Freshman/first-year Senior
 Sophomore Unclassified
 Junior

20 Did you begin college at your current institution or elsewhere?
 Started here Started elsewhere

21 Since graduating from high school, which of the following types of schools have you attended other than the one you are attending now? (Mark all that apply.)
 Vocational or technical school
 Community or junior college
 4-year college other than this one
 None
 Other

22 Thinking about this current academic term, how would you characterize your enrollment?
 Full-time Less than full-time

23 Are you a member of a social fraternity or sorority?
 Yes No

24 Are you a student-athlete on a team sponsored by your institution's athletics department?
 Yes No (Go to question 25.)

On what team(s) are you an athlete (e.g., football, swimming)? Please answer below:

25 What have most of your grades been up to now at this institution?
 A B+ C+
 A- B C
 B- C- or lower

26 Which of the following best describes where you are living now while attending college?
 Dormitory or other campus housing (not fraternity/sorority house)
 Residence (house, apartment, etc.) within walking distance of the institution
 Residence (house, apartment, etc.) within driving distance of the institution
 Fraternity or sorority house

27 What is the highest level of education that your parent(s) completed? (Mark one box per column.)

Father	Mother	
<input type="checkbox"/>	<input type="checkbox"/>	Did not finish high school
<input type="checkbox"/>	<input type="checkbox"/>	Graduated from high school
<input type="checkbox"/>	<input type="checkbox"/>	Attended college but did not complete degree
<input type="checkbox"/>	<input type="checkbox"/>	Completed an associate's degree (A.A., A.S., etc.)
<input type="checkbox"/>	<input type="checkbox"/>	Completed a bachelor's degree (B.A., B.S., etc.)
<input type="checkbox"/>	<input type="checkbox"/>	Completed a master's degree (M.A., M.S., etc.)
<input type="checkbox"/>	<input type="checkbox"/>	Completed a doctoral degree (Ph.D., J.D., M.D., etc.)

28 Please print your major(s) or your expected major(s).

a. Primary major (Print only one.):

b. If applicable, second major (not minor, concentration, etc.):

THANKS FOR SHARING YOUR RESPONSES!

After completing the survey, please put it in the enclosed postage-paid envelope and deposit it in any U.S. Postal Service mailbox. Questions or comments? Contact the National Survey of Student Engagement, Indiana University, 1900 East Tenth Street, Eigenmann Hall Suite 419, Bloomington IN 47406-7512 or nsse@indiana.edu or www.nsse.iub.edu. Copyright © 2007 Indiana University.

APPENDIX B

The University of Alabama Institutional Review Board Approval Letter

Office for Research
Office of the Director of
Research Compliance

February 25, 2009

THE UNIVERSITY OF
ALABAMA
R E S E A R C H

Matthew Alexander
Department of ELPTS
College of Education
Box 870231

Re: IRB : EX-09-CM-014, An Exploration of the Relationship between
Student Engagement and Academic Performance of Undergraduate Students at a
Public Historically Black Higher Education Institution in the Southeast

Dear Mr. Alexander:

The University of Alabama Institutional Review Board has granted approval for
your proposed research.

Your application has been given exempt approval according to 45 CFR part
46.101(b)(4) as outlined below:

(4) Research involving the collection or study of existing data, documents,
records, pathological specimens, or diagnostic specimens, if these sources are
publicly available or if the information is recorded by the investigator in such a
manner that subjects cannot be identified, directly or through identifiers linked to
the subjects.

This approval expires on February 25, 2010. You will receive a notice of
expiration, 90 days in advance. If the study continues beyond that date, you must
complete the appropriate portion of the Continuing Review and Closure Form. If
you modify the application, please complete the Modification of an Approved
Protocol Form. When the study closes, please complete the Continuing Review
and Closure Form for closure.

Should you need to submit any further correspondence regarding this application,
please include the assigned IRB application number.

Good luck with your research.

Sincerely,


Carpentato T. Myles, MSM/CI
Director of Research Compliance & Research Compliance Officer
Office of Research Compliance
The University of Alabama



152 Rose Administration Building
Box 870104
Tuscaloosa, Alabama 35487-0104
(205) 348-3152
fax: (205) 348-8882