

AN EXPLORATORY STUDY EXAMINING THE RELATIONSHIP BETWEEN STUDENT  
ENGAGEMENT AND SUCCESS BETWEEN MINORITY AND NON-MINORITY  
NURSING STUDENTS

by

DANIELLE RICE

RICK HOUSER, COMMITTEE CHAIR

BARBARA GRAVES  
ALICE MARCH  
CORDELIA NNEDU  
STEPHEN TOMLINSON

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

2017

Copyright Danielle Rice 2017  
ALL RIGHTS RESERVED

## ABSTRACT

Forty years of educational research have revealed specific conditions that are essential for encouraging student persistence and academic achievement at post-secondary institutions. According to the well-known integration model, these conditions include expectations, support, assessment, feedback, and involvement. It is increasingly clear that student engagement is one of the most important conditions and has a significant impact on a student's academic performance, satisfaction with overall college experience, and ultimately, overall success. However, researchers have not adequately studied this relationship among minority nursing students and overall student engagement. This is a problem because success rates are low among this population, contributing to a shortage of qualified minority nurses and to disparities in health care for minority patients. The purpose of this quantitative study has been to explore the relationship between student engagement activities and successful matriculation and to determine whether there is a difference in this between undergraduate minority and non-minority nursing students at a public higher education institution in the southeast United States. The study was based on an ex post facto design, and used data from students' responses to the 2014 National Survey of Student Engagement (NSSE). Only one school provided the specific data needed for analysis. The final achieved sample size was 89. As a group, the NSSE benchmarks were found to significantly predict matriculation, but differences emerged when the coefficients were examined individually. Specifically, only the NSSE benchmarks *Level of Academic Challenge*

and *Active and Collaborative Learning* were shown to be predictive of successful matriculation among both minority and non-minority students.

## DEDICATION

This dissertation is dedicated to my parents Rheba and Danny, my beautiful daughter Cyan, my fiancée Eric and my wonderful brother Isaac and sister-in-law Kia. It is also dedicated to my late grandmother Margaret Robinson, who inspired me to become a nurse. These family members have all been supportive of me during this journey and never stopped believing in it or in me.

## ACKNOWLEDGEMENTS

The completion of this dissertation could not have been possible without the support and encouragement of many individuals. I want to express a deep appreciation to those who have been instrumental in helping me through this incredible journey. Without all of you, I could not have achieved this great accomplishment.

Above all, I want to thank God because, without him, starting and completing this academic journey would not have been possible. To my mother and father, Rheba and Danny, thank you both for always encouraging and believing in me and motivating me to do my very best academically. You have always provided an ear to listen, no matter how many times I needed to talk, and have always offered encouraging words or scriptures for me. I want to thank you both for understanding that I often could not visit or spend time with you due to the multiple deadlines I have had to meet. To my beautiful daughter Cyan who has inspired me to never quit and has been there with me from the very beginning of this academic journey. To my fiancée Eric: your love, support and continuous encouragement have been life changing and a tremendous blessing for Cyan and myself. To my brother Isaac and sister-in-law Kia, thank you for believing in me and giving me encouragement. I want to send a special thanks to my dissertation support mentor, Dr. Lisa Ford, thank you so much for all of your time, support, feedback and suggestions. Your advice and encouragement has improved and positively impacted my life greatly. To my forever friends Kell, Kalima, Antonina, Kyiara, Eboni, Kelly, April, Candice, Julie and Georgia who I consider my sisters in God, without all of your kind

words, encouragement and love I could not have made it through this journey, thank you.

Without you all, I could not have made it through this incredible, academic journey. I love you all! In addition, I want to thank my dissertation chairperson, Dr. Houser, for agreeing to chair my dissertation. Thank you for believing in me and supporting me; I am so thankful for your leadership and graciousness. To my committee members Dr. March, Dr. Atkinson, Dr. Graves, and Dr. Nnedu, thank you all for your time, support, feedback, patience and suggestions. A special thanks as well to Dr. Tomlinson for your support, leadership and graciousness, which I am so appreciative of. Even though you all have very busy and have full schedules you agreed to serve on my committee. I will be indebted and grateful to you all for the rest of my life.

Finally, I want to extend special thanks and appreciation to the Director of Institutional Research and the Director of the Office of Institutional Effectiveness at the institution that was used for this study. Without their direction and support I would not have been able to obtain the data for this study. Last but not least, I want to thank my editors, Dr. Ethel Kloos, Lynda Joeman and Ellen Shuman for editing and formatting my dissertation in such a short time. Your expertise and encouragement is greatly appreciated.

## CONTENTS

ABSTRACT.....	ii
DEDICATION.....	iv
ACKNOWLEDGEMENTS.....	v
LIST OF TABLES.....	xi
CHAPTER I: INTRODUCTION.....	1
Background.....	6
Student Engagement.....	7
Student Departure.....	9
Statement of the Problem.....	11
Statement of Purpose.....	12
Research Questions.....	12
Summary of Methods.....	13
Definitions and Terms.....	14
Summary.....	16
CHAPTER II: LITERATURE REVIEW.....	18
Theoretical Framework.....	18



Social Dominance Theory.....	19
Tinto’s Interactionist Model .....	21
Factors Influencing Persistence Among Nursing Students.....	24
Student Engagement .....	25
Student-Faculty Interaction.....	25
Mentorship .....	26
Factors Specific to Minority Students.....	27
Strategies to Encourage Persistence.....	29
The BESTRN Program .....	29
Preadmission Assessment .....	30
The CANDO Program .....	31
Direct Faculty Mentorships.....	32
National Survey on Student Engagement .....	33
Limitations of Existing Research.....	43
Summary.....	45
CHAPTER III: METHODOLOGY .....	47
Research Questions.....	48
Research Design.....	48
Setting.....	50
Sample.....	52

Data Collection Instruments .....	53
Validity and Reliability.....	54
Data Collection and Sample Size.....	57
Data .....	58
Ethical Considerations .....	58
Summary.....	59
CHAPTER IV: DATA ANALYSIS .....	60
Description of the Sample.....	61
Results.....	63
Answers to Research Questions.....	70
Summary .....	70
CHAPTER V: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS .....	72
Summary and Discussion of Findings .....	75
Research Question 1 .....	75
Discussion of Findings.....	77
Implications of the Research Results.....	82
Limitations of the Study.....	84
Recommendations for Further Research.....	87
Recommendations for Nursing Education Practice .....	88
Conclusion .....	91

REFERENCES.....92

APPENDIX A: THE NATIONAL SURVEY OF NSSE INSTRUMENT 2014..... 101

APPENDIX B: IRB CERTIFICATION ..... 109

## LIST OF TABLES

Table 1 <i>Differences between the former NSSE Benchmarks and New Engagement Measures</i> ....	41
Table 2 <i>Institutional Characteristics, 2014-2015</i> .....	52
Table 3 <i>NSSE Cronbach's Alpha Values by Class</i> .....	56
Table 4 <i>Sample Demographic Characteristics: Gender by Minority/Non-Minority</i> .....	62
Table 5 <i>Sample Demographic Characteristics: Academic Class by Minority/Non-Minority</i> .....	62
Table 6 <i>Descriptive Benchmark Variables by Minority/Non-Minority</i> .....	64
Table 7 <i>Multivariate F Ratios for Benchmarks by Minority/Non-Minority, n=74</i> .....	65
Table 8 <i>Univariate Results for Four Dependent Variables by Minority/Non-Minority, n=74</i> ....	66
Table 9 <i>Hierarchical Regression Analysis Results, n=74</i> .....	69

## CHAPTER I: INTRODUCTION

Globally, nursing researchers have acknowledged that low retention rates from Bachelor of Science in Nursing (BSN) degree programs are a worsening problem (Abele, Penprase, & Ternes, 2013). The failure to keep students engaged results in a continued shortage of qualified and diversified nurses within our healthcare communities. It has been estimated that by 2035 there will be a worldwide shortage of 12.9 million healthcare workers; today that figure stands at 7.2 million (World Health Organization, 2013). This can be expected to have devastating implications for the health care of billions of people globally. In the United States, retention rates among nursing students have been reported to be as low as 50% (Abele et al., 2013; Brown & Marshall, 2008). The National Center for Education Statistics noted that only around 60% of students who began a bachelor's degree at a 4-year college in the fall of 2008 completed that degree within 6 years (Institute of Education Sciences, 2015).

The successful matriculation of students throughout nursing educational programs must therefore become a priority for nursing faculty, administrators and institutions. It is also important for nursing researchers to investigate the reasons for the continually widening gap between the number of students enrolled at the start of a nursing program and the number who persist to graduation (Glossop, 2002; Urwin et al., 2010). Nursing schools continue to struggle with creating and developing learning environments that are not only educationally supportive,

but also socially supportive of all groups of students, especially minorities (Donnell, 2015; Quaye & Harper, 2014).

Disproportionately low success rates among minority nursing students contribute to the national nursing shortage, and have an impact on the inability of the U.S. healthcare system to respond proficiently to the current diverse needs of all Americans (Bednarz, Schim & Doorenbos, 2010; National Research Council, 2004). Even though there has been an approximate increase of about 25 percent in the size of the minority population nationally over the last ten years, the lack of diversity among the nursing workforce continues (Diefenbeck, Michalec & Alexander, 2016). Within this study, the term “minority” is used to refer to part of a wider population which has different characteristics from others in that population, and which is often subjected to differential treatment due to race or ethnicity. In the context of the study, minority students are students categorized as Black, American Indian, Alaskan Native, Asian, Native Hawaiian or Pacific Islander. Individuals who identify as Hispanic or Latino may be of any race (Office of Management and Budget, 2003).

Approximately 37 percent of the U.S. population identifies as minority, comprising those identifying as Hispanic (16.3%), African-American (13.6%), American Indian (1.2%), Asian (5.6%), or Native Hawaiian and Other Pacific Islander (0.2%) (Humes, Jones, & Ramirez, 2014; U.S. Census Bureau, 2016). However, according to the National Nursing Workforce Study conducted in 2013 by the National Council of State Boards of Nursing and the Forum of State Nursing Workforce Centers, nurses who identify themselves as being from minority backgrounds represented only 19% of the registered nurse (RN) workforce. Based on ethnic/racial backgrounds, the study reported that 83% of the RN population at that time identified as being White/Caucasian, while the remainder identified as being Black/African-American (6%), Asian

(6%) Hispanic (3%), American Indian/Alaskan Native (1%), Native Hawaiian/Pacific Islander (1%) and “Other” (1%) Native American/ Hawaiian/Pacific Islander (1%) and other (1%) (National Council of State Boards of Nursing and The Forum of Nursing Workforce Centers, 2013).

The gap between our nation’s population mix and the predominantly nonminority healthcare workforce stems in part from the large number of minority students who fail to persist in and graduate from nursing programs (Childs et al., 2004 ; Rice et al., 2013). For the academic years 2002-2011, for example, baccalaureate nursing programs across the country showed enrollment of only 26.5% minority students, as compared with 73.5% of nonminority students (American Association of Colleges of Nursing (AACN), 2014), and retention rates among minority nursing students remain disproportionately low (AACN, 2014). The National Nursing Workforce Study findings cited above indicate that, of the 26.5% of minority students enrolled in 2002-11, only 19% were part of the nursing workforce in 2013, indicating that many did not graduate from their nursing programs.

Researchers have indeed shown that nursing students from minority groups have significantly higher dropout rates compared with nonminority nursing students (Tab, 2016; White & Fulton, 2015), reportedly ranging between 15% and 85% (Gardner, 2005; Harris, Rosenberg, & O’Rourke, 2014). Minority students often face unique challenges upon arrival to college, relating for example to a lack of pre-college academic preparedness and lower socio-economic backgrounds, and these can influence rates of persistence and successful matriculation among this group (Childs, Jones, Nugent, & Cook, 2004; Davis, Davis, & Williams, 2010; Mingo, 2008). Academic institutions must address these challenges, not only through recruitment

and enrollment of more minority nursing students, but through clear initiatives and strategies to help retain and successfully graduate students after admission.

Successful matriculation among minority nursing students is important because this is directly related to public health outcomes. Diversity in the healthcare workforce leads to improved access to care for minority patients, improved educational experiences for health professional students, and greater patient choice and satisfaction (Murray et al., 2016; Tab, 2016). At least in part, the shortage of minority healthcare professionals as well as lower levels of trust in healthcare professionals among minority populations is likely to be linked to the persistent disparities in healthcare and health status experienced by these groups (Mittman & Sullivan, 2011; National Academies Press, 2006; National Institutes of Health, 2010; White & Fulton, 2015). Overall, minority populations have shorter life expectancies and higher rates of chronic conditions such as HIV/AIDS, cancer, diabetes, and heart disease (Mingo, 2008; Tab, 2016; U.S. Department of Health and Human Services, 2010). As well as reducing health disparities between groups, a diversified nursing workforce can help improve the overall quality of healthcare and have a positive impact on patient outcomes (Mittman & Sullivan, 2011), while also reducing documented cases of institutional discrimination in the healthcare system (Sidanius & Pratto, 2004; Sidanius, Pratto, van Laar, & Levin, 2004; Skloot, 2010; Veal, Bull, & Miller, 2012).

Improving minority nursing student engagement by identifying the factors that contribute to successful matriculation and academic achievement among this population might be a first step in addressing gaps in healthcare. However, the study of student engagement within higher education is extremely complex and multifaceted. Both quantitative and qualitative studies have revealed a multitude of reasons for students' failure to remain engaged and retained.



A nursing student that drops out of a program has wasted resources, time, and money, as well as taking up a place that might have been held by another qualified student. The student who drops out will not graduate or become a nurse, and therefore fails to augment the nursing workforce (Bennett, Bormann, Lovan, & Cobb, 2016). It is important to recognize, though, that exploring why students drop out of nursing school without identifying what contributes to successful completion of their programs of study limits researchers to acknowledging the problem, without providing a solution. Instead, it is crucial to investigate the factors that contribute to the successful progress of students through their programs of study.

Recently, researchers have suggested that successful matriculation and student engagement levels are more valuable measures of the quality of an institution's nursing program than the National Council Licensure Examination (NCLEX) first-time pass rate (Murray, Pole, Ciarlo & Holmes, 2016). This study proposes to focus mainly on student engagement as measured by the five National Survey of Student Engagement (NSSE) "Benchmarks of Effective Educational Practice": *Level of Academic Challenge, Active and Collaborative Learning, Student-Faculty Interaction, Enriching Educational Experiences, and Supportive Campus Environments*. However, persistence or retention of both minority and non-minority students is a significant aspect of the discussion in this area (McCormick, Gonyea & Kinzie, 2013). Lack of successful matriculation among minority nursing students has continued to be a troubling issue, according to several educational researchers (Abele et al., 2013; Donnell, 2015; Kuh, Kinzie, Schuh & Whitt, 2010; Rice, Rojjanasrirat, & Trachsel, 2013; Tab, 2016; Tinto, 2012).

Only a few previous studies have investigated the differences between minority and non-minority nursing students' perceptions of educational strategies that promote success, positive

student engagement and persistence (Childs et al., 2004; Dapremont, 2014; Graham, Phillips, Newman, & Atz, 2016; Murray, Cole, Ciarlo, & Holmes, 2016; Tab, 2016) and a substantial research gap remains in this area. A review of the literature, presented in Chapter II, revealed that some initiatives to enroll more minority nursing students have been introduced, but that few of these have significantly improved persistence and matriculation among minority students and helped increased minority graduate numbers (Murray et al., 2016; Tab, 2016; Wilson, Sanner, & McAllister, 2010).

This study addresses the current research gap by examining possible causes of the disproportionately low success rates among minority nursing students compared to non-minority nursing students, and by exploring the relationships between student engagement patterns and academic performance, and how these differ between the two groups.

### **Background**

The research literature demonstrates evidence that particular strategies appear to be associated with more positive outcomes in terms of successful matriculation and graduation of minority nursing students. These strategies include faculty mentoring and advising, tutoring, program orientation, and test-taking skills and study skills development. Clinical development, NCLEX preparation, and a learning environment with full faculty commitment to minority student populations were also found to be important (Igbo et al., 2011; Murray et al., 2016; Sutherland, Hamilton, & Goodman, 2007). Researchers have noted that the more that students engage academically and socially with others on campus, specifically with faculty and peers, the more likely it is that they will remain in school and graduate from college (Kuh et al., 2010; Tinto, 2012; White & Fulton, 2015).

Studies by Bean (1986) and Tinto (2012) provided evidence that academic as well as social engagement are essential if students are to persist in their course and complete their programs of study. Other studies have revealed that individuals who identify themselves as minorities need supportive services to be in place within their programs in order to encourage social integration and social engagement (Mooring, 2016; Kuh et al., 2010). Faculty involvement, mentoring, one-on-one coaching, and emotional support can all increase the likelihood that both minority nursing students and non-minority nursing students will remain within their programs and persist to graduation (Mooring, 2016; Tab, 2016). Minority students face many more challenges than nonminority students, however, and both faculty involvement and social engagement are therefore even more important to their persistence and graduation (Kuh, 2009; Murray et al., 2016; Pascarella, 1982; Tinto, 2012). Some common barriers that minority students face include loneliness, isolation, lack of peer interaction, and unsupportive faculty (Gardner, 2005; Tab, 2016; White & Fulton, 2015). These barriers correlate with students' lack of engagement with peers and faculty, and therefore have an impact on the disproportionately low retention rates among minority students.

### **Student Engagement**

The term *engagement* is often used to represent the quality of involvement and effort of a student in productive academic learning activities (Kuh, 2009; Tinto, 2012). Student engagement has become widely recognized as having a strong influence on students' learning and academic achievement, and this has therefore been widely researched and theorized (Kuh, 2009).

Researchers have found that greater student engagement or student involvement with their institution is associated with a higher likelihood of graduation (Gordon, Ludlum, & Hoey, 2008; Pascarella, Seifert, & Blaich, 2010; Tinto, 2012). Two factors have been identified as

contributing to student engagement levels and their academic success: first, the amount of effort and time that students invest in their studies and, second, the way institutions distribute resources and organize learning opportunities and activities to encourage students to participate in and benefit from these (Kuh et.al, 2010).

The National Survey of Student Engagement (NSSE) examines how colleges and universities use resources and organize curricula to optimize evidence-based learning opportunities. The NSSE was designed specifically to evaluate the extent to which students are engaged and what they gain from their college experiences. Researchers have established that what students actually do during college is a greater indicator of persistence than what they actually learn or which college they attend (Kuh et.al, 2010). It has also been observed that the more a student is involved socially and intellectually within their college environment, the better the student learns and the greater chance the student has of persisting and eventually graduating (Tinto, 1993).

Although studies have used the results of student engagement surveys such as the NSSE to identify ways of improving student outcomes, very little previous research has investigated the links between minority student outcomes with responses to such surveys. Similarly, although researchers have historically noted a significant difference in the academic persistence of minority students and students from disadvantaged backgrounds compared with non-minority students, there remains a paucity of research into the extent to which pre-college variables, college variables and demographic variables influence student engagement, matriculation and academic outcomes among minority nursing students, or the differences in these relationships between minority and non-minority nursing students (Chambers & Chiang, 2012; Hall, Cabrera & Milem, 2011; Tinto, 2012).

## **Student Departure**

Early departure from an academic program has been linked with a lack of engagement or involvement within a student's social and intellectual environments (Kuh et al, 2010; Urwin et al., 2010). Student departure can also be described as non-completion or delayed graduation, or in terms of an overall loss of students from the start of the program to completion (Abele et al., 2013). Researchers have documented a multitude of reasons why minority nursing students drop out of academic programs (Tinto, 2012). Financial issues, academic failures, personal illness, lack of support within the program, family commitments, lack of academic preparation, social isolation and loneliness, social adjustment issues, and culturally-biased curricula are the most commonly observed reasons for lack of retention (Evans, 2013; Gardner, 2005; Mingo, 2008; Mooring, 2016). Administrators and nursing faculty must consider these factors when creating and implementing effective retention strategies targeted at both non-minority and minority students (Evans, 2013).

Student departure negatively affects both nursing programs and individual nursing students. Students often experience both social and psychological problems, along with considerable financial losses. Universities suffer financially since federal and state funding is based on enrollment numbers. Schneider (2010) noted that, in 2007 in the United States alone, the cost to institutions of first-year college students not returning for a second year was \$1.35 billion. Further, qualified students who could not be admitted due to unavailable space (and who might have graduated in place of the dropped-out students) translate into further losses, both to the students and the programs (Bennett et al., 2016; Donnell, 2015).

Nursing programs and colleges must create strategies and activities that are designed to help students complete their courses of study and graduate (Carolan & Kruger, 2011; Rice et al.,

2013). Successful matriculation and ultimately graduation rates are important measures of nursing program effectiveness (Abele et al., 2013). Although there is no official standard benchmark, the National League for Nursing and the Commission on Collegiate Nursing Education has suggested that a retention rate of 80% or greater should be a goal for all nursing programs (Commission on Collegiate Nursing Education [CCNE], 2009). It is possible to measure student engagement across a large number of universities, and administration and faculty can immediately use NSSE engagement data to improve the undergraduate student experience (Kuh, 2009, Kuh et al., 2010; Popkess & McDaniel, 2011).

To date, there is no standard national retention program for nursing schools. The Educational Policy Institute (2013) reported that higher education administrators should utilize a five-domain system to encourage successful matriculation among minority students. The domains consist of *recruitment and admissions*, *financial aid*, *academic success support services*, *student services*, and *curriculum and instruction*. A variety of interventions and retention strategies can be derived from these domains, such as mentoring activities, faculty development to address cultural competence and sensitivity, and financial support to students in the form of cash stipends (Loftin, Newman, Gilden, Bond, & Dumas, 2013). These strategies and interventions are reviewed in more detail in Chapter II.

For over 30 years, leading educational researchers have reported that minority student retention rates remain disproportionately low (Bennett et al., 2016; Eaton & Bean, 1995; Mooring, 2016; Northall, Ramjan, Everett, & Salamonson, 2016; Tinto, 2000; Tracey & Sedlacek, 1985). Some researchers have concluded that minority students' rates of graduation increase when institutions of higher learning focus administratively upon the successful matriculation of these students (Loftin et al., 2013). At least one study has also showed that

successful schools implement rigorous intervention programs in a consistent manner over an extended period of time (Wilson, Sanner, & McAllister, 2010). Institutional improvement begins when both administrators and educators focus on the problem of student dropout through the students' perspectives and needs. Nursing schools and administrators who attempt to identify the barriers faced by many minority students have an opportunity to create customized strategies and programs to retain these students (Mooring, 2016). Today, schools of nursing must create a more culturally diverse environment and practice continuous self-evaluation in-order to improve successful matriculation among nursing students, from both minority and non-minority groups (National League of Nursing, 2009; Tinto, 2012).

### **Statement of the Problem**

Years of educational research have not revealed a substantial amount of knowledge on how pre-college variables and college variables influence student engagement among minority students in colleges (Hall, Cabrera & Milem, 2011). Nursing and medical organizations, accrediting bodies, and health policymakers are all applying pressure on nursing programs to enroll, maintain, and successfully graduate minority nursing students (Baker, 2010; Mittman & Sullivan, 2011). Owing to a lack of resources, including qualified faculty, nursing schools turned away 75,587 applicants in the 2010-2011 school year (AACN, 2014). Policymakers and researchers have noted that there is a shortage of qualified nurses in the United States, and the nursing shortage will worsen, with the loss of as many as 1 million nurses and 250,000 public health professionals by the year 2020 (AACN, 2014).

Minorities will soon represent over half of the U.S. population, but account for less than 20% of the total nursing workforce (Abele et al., 2013; Harris et al., 2014; Noone, 2008). This gap could continue to widen if there is no substantial change within nursing education programs.

The underrepresentation of minority nurses in the nation's healthcare workforce is a problem which contributes to the continued nursing shortage, and which stems directly from the disproportionately low academic achievement and rates of persistence among minority nursing students. This underrepresentation of minorities within the health profession also results in gaps in the provision of culturally competent care for all people, regardless of their race, color, or culture.

### **Statement of Purpose**

The main purpose of this quantitative study was to explore the relationship between student engagement patterns and activities and matriculation, based on data relating to undergraduate minority and non-minority nursing students at one public higher education institution located in the southeast United States. The engagement patterns were defined in terms of the benchmarks measured by the NSSE (Level of Academic Challenge, Active Collaborative Learning, Student-Faculty Interaction, Enriching Educational Experiences, and Supportive Campus Environment). The second objective of the research was to determine if there is any change in observed differences between minority and non-minority nursing students in the relationships between student engagement patterns and matriculation, when controlling for selected personal factors (sex, race).

### **Research Questions**

The first research question of the study was: Is there a difference between minority and non-minority baccalaureate nursing students on student engagement activities as measured by the NSSE benchmarks (Level of Academic Challenge, Active Collaborative Learning, Student-Faculty Interaction, Enriching Educational Experiences, and Supportive Campus Environment)?



The second research question was: When controlling for demographics (sex, race) how do the NSSE benchmarks (Level of Academic Challenge, Active Collaborative Learning, Student-Faculty Interaction, Enriching Educational Experiences, and Supportive Campus Environment) predict success or matriculation among minority and non-minority students?

### **Summary of Methods**

I controlled for demographic variables through the use of a 2-step hierarchical logistic regression; for the first step, I determined if demographic variables contributed significantly to the prediction of successful matriculation (persistence and academic achievement). I then examined the Omnibus chi-square to determine if taken together, the coefficients for the demographic variables were significant. A *p*-value for the chi-square less than .05 indicates that the model with the demographics alone is significant. In other words, significance means that the demographics do contribute to the prediction of successful matriculation. A *p*-value greater than .05 would indicate that the demographics do not contribute to the prediction of successful matriculation (persistence and academic achievement).

For the second step, I added the NSSE benchmarks/themes to the model and the Omnibus chi-square was again examined. The *p*-value for the chi-square of the second step indicates if the change in the chi-square from Step 1 with the addition of the NSSE benchmark/themes is significant. A *p*-value less than .05 would indicate the NSSE benchmarks/themes do contribute significantly to the model when demographics are controlled.

I examined the NSSE data for freshman and senior students who completed the survey during the spring of 2014, and I linked the responses to their matriculation data (first year students' fall-to-fall retention and end of year GPA, and seniors number of semesters taken to

degree completion), whether they remained within the program by the spring of 2014, personal characteristics, precollege and college factors.

### **Definitions and Terms**

*Family Educational Background:* Whether mother and father attended college, graduated or dropped out or their highest level of education attained.

*Grade Point Average (GPA):* As defined by Merriam-Webster dictionary, the average obtained by dividing the total number of grade points earned by the total number of credits attempted (called also *quality point average*).

*Matriculation:* To be enrolled at a college or university. Within the context of this study, continuous enrollment from semester to semester and successful progression within program of study.

*Minority students:* Minority groups are parts of a population differing from others in some characteristics and often subjected to differential treatment due to race or ethnicity. In the current study, minority students were defined as students whose race is Black, American Indian or Alaskan Native, Asian, or Pacific Islander, and whose ethnicity may or may not be of Hispanic origin (Office of Management and Budget (OMB), 2003).

*National Survey of Student Engagement.* The primary research instrument for this proposed study was the NSSE (2014), which surveys first-year and senior level college students regarding their engagement levels. By design, the NSSE assesses the extent of student engagement. The NSSE's purpose is to provide data that institutions can use to improve the undergraduate experience (Chambers & Chiang, 2011; Kuh et al., 2010). The NSSE instrument relies on student self-reporting, and collects data on how students spend their time and energy on educationally purposeful activities; their personal perceptions of their institutions' commitment

to providing resources that support student success and development, and specific background and demographic information. A copy of the NSSE (2014) instrument is included in Appendix A.

*Race:* The most recent federal recommendations by the Office of Management and Budget (OMB) suggest that “respect for individual dignity should guide the methods and processes of obtaining data on race and ethnicity; ideally allowing the individual to respond and self-identify him/herself as to which particular race they identify with” (OMB, 2003). The groups used to categorize race for U.S. citizens and the five categories that the OMB defines are Black or African American, White, American Indian or Alaskan Native, Asian, and Native Hawaiian or other Pacific Islander. Individuals may decide to report more than one race to define their racial status, such as “American Indian” and “White”. The racial categories included in the census questionnaire generally reflect a social definition of race recognized in this country and not an attempt to define race biologically, anthropologically, or genetically. In addition according to OMB, the categories of the race item include racial and national origin or sociocultural groups.

Individuals who define their origin as Hispanic or Latino may be of any race. According to both the U.S. OMB and the Census Bureau, the data on race were taken from answers to the question on race that was asked of individuals in the United States. The Census Bureau collects racial information in accordance with guidelines given by the U.S. OMB, and this racial information is based on self-identification (OMB, 2003).

*Sex:* Female or Male, self-identified within the NSSE survey.

*Retention:* Retention is a measure of the rate at which students persist in their educational programs at an institution, expressed as a percentage. For four-year institutions, retention is the percentage of first-time bachelors (or equivalent) degree-seeking undergraduates

from the previous fall who are again enrolled in the current fall. For all other institutions, retention is the percentage of first-time bachelors from (or equivalent) degree seeking undergraduates from the previous fall who either re-enrolled or successfully completed their program by the current fall. In this study retention was defined as successful completion of a student's program within the six-year graduation period (Ginder, Kelly-Reid, & Mann, 2015).

*Student engagement:* Also known as student involvement, student engagement is a measure of how much time and effort students put into their studies and other educationally purposeful activities. This can also relate to involvement with faculty, student peers, campus activities, and involvement in extracurricular activities (Kuh, 2009; Tinto, 2012).

### **Summary**

In the United States, low retention rates are a problem for nursing education in general and for minority nursing students specifically. This problem is particularly troubling because of the negative consequences for students, institutions, and society as a whole. Individual students who do not persist to graduation may suffer financial losses. Institutions also face financial losses, both in the form of lost tuition fees as well as losses associated with the failure to admit alternative students who might have persisted to graduation. In the United States, the number of minority nurses in the workforce is not proportional to the number of minority individuals in the population. The low retention rates among minority nursing students contribute to this issue, indirectly leading to disparities in healthcare stemming from the unavailability of minority health care professionals to care for minority populations.

To address this problem, the current quantitative study has examined the relationships between student engagement activities and successful matriculation among minority nursing students and non-minority nursing students at one selected college in the southeastern United

States. I examined the relationships between first-year and senior level students' responses on the NSSE and their matriculation status in order to determine whether student engagement and demographic variables predict retention and successful matriculation. In addition, I examined whether the observed relationships persist when controlling for personal variables, pre-college and college variables. This study is important because, without a clear understanding of the factors that contribute to both minority nursing students' and non-minority nursing students' successful matriculation, it is impossible to develop effective interventions and retention strategies targeting this population.

In Chapter II, the theoretical framework for the study is presented and existing research and theoretical literature related to the research topic is reviewed. This includes an assessment of the gaps and limitations in existing research. Chapter III describes the methodology of the study, including a description of the setting, the research instruments, and data collection and analysis procedures.

## CHAPTER II: LITERATURE REVIEW

This chapter contains a review of theoretical and research literature related to the research topic. The chapter includes a detailed presentation of the theoretical framework of the study, which combines social dominance theory with Tinto's (1993) interactionist model of student retention. Following this, there is a review of literature related to retention and persistence among nursing students, which focuses on the factors that encourage persistence and graduation. Next, studies are reviewed which have empirically demonstrated the impacts of strategies for encouraging persistence and academic achievement. A review of relevant research that has used data generated by the National Survey on Student Engagement (NSSE) is also presented. Finally, I discuss the limitations of the existing body of research. A summary concludes the chapter.

### **Theoretical Framework**

Student's lack of matriculation and program completion is a complex problem that is directly influenced by several factors (Kuh et al., 2010; Pascarella & Terenzi, 2005; Tinto, 2012). It is helpful for researchers to approach student educational research methodically and guided by theory (Pascarella et al., 2010). The theoretical framework for this study consisted of Sidanius and Pratto's (2004) social dominance theory (SDT) and Tinto's (1993) interactionist model. These theories are relevant to the present study because they deal with minority status in society and with the factors that contribute to student matriculation and completion in higher education institutions. The following sub-sections describe these theories in detail.

## **Social Dominance Theory**

Social Dominance Theory (SDT) focuses on the complexities of social institutions and cultural ideologies that produce group-based social inequality (Sidanius et al., 2004). According to SDT, researchers must question why humans organize their societies as group-based hierarchies. A hierarchy is a social system characterized by differential group power distribution, and SDT focuses on the struggle of power between hierarchies and group-based systems within society (Rosenthal & Levy, 2010; Sidanius & Pratto, 2004).

SDT theorists assert that hierarchies within human society form around characteristics such as race, gender, class, and religion, and that these characteristics form the status of individuals (Sidanius & Pratto, 2004). People with lower status in the hierarchy constitute disadvantaged groups that may face discrimination, both institutionally and interpersonally (Rosenthal & Levy, 2010; Sidanius & Pratto, 2004). SDT theorists attempt to examine many complex and interrelated problems within our society (e.g., prejudice, racism, intergroup conflict, and stereotyping) by describing the processes by which these problems arise: “Social dominance theory is very much a model about *process*, specifically the processes that create and recreate group based social hierarchy” (Sidanius et al., 2004, p. 849). SDT research aims to examine realistic situations in which groups of people are in either oppressed or dominant positions, rather than making assumptions or studying situations through a priori theoretical lenses.

Social dominance theory involves defining the processes that create and recreate group-based social hierarchies. These processes result in societies in which certain groups of people, mainly minorities and disadvantaged groups, continually face obstacles upon entering postsecondary education institutions (Sidanius et al., 2004). The obstacles are both academic and

socioeconomic in nature; minorities are likely to be unprepared academically for the rigors of postsecondary education, owing to educational and institutional discrimination practices within our hierarchal society, as well as differences in access to resources such as good quality schools and healthcare.

SDT is relevant to the current study because the minority status of students, and their positions within social hierarchies influence their likelihood of graduating from nursing school. A student's family background and pre-college schooling interact and influence institutional commitment, which reduces the likelihood of dropping out and quitting (Tinto, 2012; Kuh, 2009; Loftin et al., 2013). Student engagement positively influences students' satisfaction with college and increases Student-Faculty Interaction, which improves student learning, in turn increasing the likelihood of a student persisting through college (Kuh, 2009).

Throughout the literature on minority retention and graduation, researchers have documented barriers to persistence including lack of academic preparation and lack of faculty support and mentorship, which are two main obstacles often faced by minority students (Childs et al., 2004; Evans, 2013). As a conceptual framework, SDT examines the mechanisms of minority students' poor academic preparation in relation to their subordinate social status. Minority students are less likely to exhibit academic preparation for the rigors of postsecondary education (Childs et al., 2004; Sidanius et al., 2004; Tinto, 2012). According to Tinto (2012) and other researchers, minority students are less likely to persist compared with nonminority students owing specifically to the lower quality of their academic preparation (Loftin et al., 2013; Pascarella & Terenzini, 2005; Tinto, 1993; White & Fulton, 2015). Indeed, as a group, minorities are more likely to originate from poorer backgrounds and to have experienced inferior educational preparation (Loftin et al., 2013). STD provides a framework for understanding this



phenomenon because it suggests that, owing to their lower status in social hierarchies, minorities are subject to institutionally discriminatory practices, including lower access to high quality primary and secondary education compared with non-minorities.

Although SDT as a socially focused framework supports and overlaps with the discussion of matriculation and graduation, the complexities of student matriculation, graduation and engagement meant that the study also required a second, education-focused framework in order to provide a robust understanding of the phenomenon of interest. This secondary framework consisted of Tinto's (1993) interactionist model, described in detail in the next sub-section.

### **Tinto's Interactionist Model**

A voluminous body of research on persistence and successful matriculation (e.g., Bean, 1986; Bingham & Solverson, 2016; Mooring, 2016; Northall et al., 2016; Pascarella & Terenzini, 2005; Schrum, 2015; Tinto, 1993) suggests that many students arrive at college with precollege academic and personal characteristics that directly affect how they experience college, persist through their coursework, and engage with peers and faculty. Students' success and overall satisfaction with college has been shown to have an impact on persistence (Carolan & Kruger, 2011; Donnell, 2015; Kuh, 2010; Pascarella & Terenzini, 1991; Tinto, 1993). Based on these empirical findings, many theories and models have been developed to explain and predict student persistence. The most common is Tinto's (1993) interactionist model.

The first references to this model appeared in 1975 to explain that students' family backgrounds and precollege academic preparation interact with one another to influence goal commitment (commitment to the goal of graduation) (Murray et al., 2016; Pascarella & Terenzini, 2005). According to Tinto (1993), goal commitment reduces the likelihood of a student dropping out. Tinto also argued that students possess an initial commitment to the

institution and an initial commitment to graduation, and that students' goal commitment coincides with their institutional commitment (Tinto, 2012). Institutional commitment can lead to peer group and faculty interaction, which leads directly to social integration, increasing the likelihood of persistence and matriculation (Abele et al., 2013; Mooring, 2016; Murray et al., 2016; Pascarella & Terenzini, 2005; Tab, 2016).

Tinto (1993) described persistence as a longitudinal process, because students' background characteristics affect the way they interact with their college environments, which may influence educational and social outcomes. Specifically, Tinto posited that individual characteristics could affect whether students persist to graduation or depart or drop out prior to obtaining their degree. As discussed earlier, some minority students have been found to have come from disadvantaged backgrounds and to have experienced inferior schooling prior to college, placing them at an academic disadvantage (Tinto, 1993, 2012).

Tinto's model suggests that institutions must be involved in and take responsibility for student persistence (Tinto, 2012). Once an institution admits a student, it has an ethical obligation to help students to persist and graduate. Institutions must focus on what they can do to create and foster a positive learning environment that directly supports persistence (Loftin et al., 2013; Schrum, 2015). Tinto (2012) posited that universities and colleges must maintain environments with specific conditions in order to retain students. These conditions, described in the succeeding paragraphs, were defined by Tinto (2012) as *expectations*, *support*, *assessment and feedback*, and *involvement*. The NSSE, which is used to measure student engagement in the present study, collects data relevant to each of these conditions, making Tinto's model particularly relevant for the study. The following paragraphs explain specifically how Tinto's conditions reflect the NSSE benchmark/themes variables.

**Expectations.** According to the model, student success depends on students' self-expectations (Tinto, 2012). In addition, faculty expectations for the students influence whether a student succeeds or fails. Low expectations lead to failure, whereas high expectations encourage success. The NSSE benchmark of academic challenge reflects Tinto's (2012) focus on expectations (Tinto, 2012). For example, in the NSSE survey, question five asks participants to what extent their instructors have "clearly explained course goals and requirements" during the current school year. This question addresses whether instructors' expectations of students are clear to students (see Appendix A).

**Support.** According to Tinto (2012), support is integral to a student's success. Lack of financial support is known to be a major issue for many minority students (Graham et al., 2016; Tab, 2016). Academic and social forms of support are also known to be very important to students during their first year of college (Kuh, 2009; Tinto, 2012). Two of the five NSSE benchmarks address the condition of support. Both Student-Faculty Interaction and Supportive Campus Environments reflect the level of support an institution offers. Question 13 of the NSSE (2014) survey asks participants to rate the quality of their interactions with fellow students, academic advisors, faculty, student services staff, and other staff. Question 14 asks how much participants' institutions emphasize the provision of support to help students succeed, learning support services, and other items related to Tinto's construct of support (see Appendix A).

**Assessment and feedback.** Tinto's (2012) third condition consists of assessment and feedback (Tinto, 2012). Students are seen to be more successful when faculty assess their performance and provide frequent feedback. This process of providing frequent feedback also assists faculty and staff to encourage and support positive behaviors to improve student success. Several NSSE (2014) items address Tinto's assessment and feedback condition. For example,

question five asks participants to indicate the extent to which their instructors have provided feedback on work in progress and on tests or assignments during the current school year (see Appendix A).

**Engagement.** Tinto's fourth condition consists of involvement, more commonly referred to as engagement. Tinto (2012) posited that, the more students engage socially and academically with their peers, faculty, and staff, the more likely it is that they will be successful. Student engagement leads to social alliances and emotional support, which, in turn, leads to greater educational success (Dapremont, 2014).

Tinto (2012) divided engagement into two forms: academic and social engagement, both of which he argued positively influence persistence. To develop his theory, Tinto drew on the work of Durkheim (1961) and Spady (1970), who believed that friendship, shared values, and social support reduce the likelihood of suicide. Tinto extended this theory to dropout, positing that engagement could reduce the risk of a student departing early from their academic program (Pickering, Walford, & British Centre for Durkheimian Studies, 2000).

According to Tinto's (1993) model, social integration leads to increased satisfaction, which in turn increases a student's institutional commitment and thereby increases persistence. The NSSE (2014) emphasizes the importance of creating conditions that lead to student engagement, and the instrument's foundation is the idea that student engagement is the most important factor influencing student success and persistence (Kuh et al., 2010).

### **Factors Influencing Persistence Among Nursing Students**

Student dropout rates remain high among minority nursing students, ranging between 15% and 85% (Gardner, 2005; Harris et al., 2014). Many minority students receive inadequate preparation for the academic rigors of nursing programs (Tinto, 2012). It was recently reported

that, overall, non-minorities accounted for 73.5% of students on baccalaureate nursing programs in the United States, while minorities accounted for less than 27% (AACN, 2014). The educational literature reviewed for this study did not reveal significant differences in success rates between two-year associate nursing programs and baccalaureate four-year degree programs (Higgins, 2005; Mooring, 2016). There is a need, therefore, for increased persistence efforts among both minority and non-minority nursing students at all levels. The following sub-sections identify and discuss the factors that previous studies have shown to be associated with student persistence.

### **Student Engagement**

Many minority students experience distinct obstacles in making contact with and establishing social and personal interaction with other students, which negatively affects their persistence. Student engagement helps all students develop positive habits that increase their ability to continually learn and develop (Kuh, 2009; Tinto, 2012). First-year departure is known to account for a high percentage of dropout from academic institutions (Kuh et al., 2010; Tinto, 2012). A study by the ACT (2015) found that students with higher engagement scores attained a postsecondary degree within four years at a higher rate than students with lower engagement scores.

### **Student-Faculty Interaction**

The existing body of research on Student-Faculty Interaction demonstrates that faculty contact improves student satisfaction and increases student academic successes. Students who are actively engaged in academic life at college, and who are in frequent contact with faculty inside and outside of classrooms are likely to learn better and persist than those with lower levels of Student-Faculty Interaction (Pascarella & Terenzini, 1991; Tinto, 2012). Cosgrove (1986)

found evidence that direct mentoring programs promoting frequent contact with faculty were associated with higher student satisfaction with their institutions and contributed to significant developmental gains among students who participated in the programs compared with students who did not participate (Cosgrove, 1986). This suggests that contact with faculty members promotes positive student development. More recently, researchers (Kuh, 2009) have confirmed that meaningful interactions between students and their instructors are important for quality learning experiences. Several questions on the NSSE (2014) instrument relate to Student-Faculty Interaction (see Appendix A).

### **Mentorship**

Researchers have established a link between persistence, on the one hand, and mentorship, faculty, and peer advisement, on the other (Foster, Ooms, & Marks-Maran, 2015; Huybrecht et al., 2011; Riley & Fearing, 2009; Wilson, Andrews, & Leners, 2006). Mentoring, in particular, is known to have a significant impact on persistence among minority students (Kuh et al., 2010; Tinto, 2012). Within nursing, student-faculty mentoring is an effective strategy for enhancing diversity in nursing education through increased recruitment and persistence of minority students (Benner, Sutphen, Leonard, & Day, 2010; Tinto, 1993; Wilson et al., 2006).

Relational mentoring strategies have shown to improve students' academic success (Foster et al., 2015; Huybrecht et al., 2010; Riley & Fearing, 2009). According to Wilson, Andrews, & Leners (2006), these strategies include: (a) communication through regular social contact, academic advising/counseling, and modeling of ways to cope with stress; (b) professional leadership skill development, teaching assertiveness, and sharing of professional "lived experiences"; (c) confidence-building activities, making judicious choice of clinical placements, fostering career development, and interview coaching; and (d) support-seeking

strategies, involving encouragement to join support groups, enhancing awareness and access of campus community resources. Relational mentorship between faculty and students acknowledges that the student is not an empty vessel, but an active learner in his or her own learning experiences.

One of the studies reviewed (Foster et al., 2015) focused specifically on mentorship among minority nursing students. This mixed-methods study had the goal of gaining a greater understanding of minority nursing students' expectations and experiences of mentorship. It used a sequential, exploratory design and collected data using both a semi-structured focus group and an online questionnaire. The results showed that the nursing student participants valued the teaching, encouragement, mentoring, and support that mentors provided (Foster et al., 2015). This supports the importance of mentoring for improving retention in postsecondary nursing institutions.

### **Factors Specific to Minority Students**

In a few studies, researchers have focused specifically on minority nursing students' persistence and engagement (Abele et al., 2013; Dapremont, 2014; Gardner, 2005). Dapremont (2014) sought to determine the obstacles that minority nursing students face and the factors necessary to create supportive learning environments in which the likelihood of persistence is maximized. The researcher explored eighteen minority nursing students' experiences while enrolled in a predominantly nonminority nursing program. Analysis of in-depth interviews revealed eight themes relevant to the participants' experiences: loneliness and isolation, differentness, peers' lack of understanding and sensitivity about cultural differences, lack of faculty support, absence of acknowledgement of individuality from faculty, coping with

insensitivity and discrimination, determination to build a better future, and overcoming obstacles (Dapremont, 2010, 2014).

In another important minority-focused study (Gardner, 2005), several interventions intended to increase persistence among minority nursing students were applied and evaluated. These included expanded hours for the retention coordinator, tutoring and study skills courses, and development of a mentoring network connecting minority registered nurses with students for scheduled mentorship activities. Preliminary findings revealed 100% retention at the end of the first year. The researcher noted that providing a supportive environment through academic outreach and mentoring services, along with establishing a retention coordinator to direct the program, led to a successful initial year (Gardner, 2005).

More recently, studies have revealed that both faculty and peer support positively affects persistence among minority nursing students (e.g. Murray et al., 2016). The objective of one study (Murray et al., 2016) was to create a project to recruit and retain nursing students from underrepresented minority groups and disadvantaged backgrounds into nursing education. Participants consisted of 21 high school students enrolled in a pre-professional education program designed to prepare them for admission into a nursing program. The researchers applied retention strategies to newly enrolled nursing students, and the nursing school created a retention specialist position. The retention specialist worked exclusively with minority students, the advisors, and faculty. This individual conducted weekly meetings with students that had GPAs at or below 2.5 on a 4.0 scale and scheduled advisement meetings to discuss the students' academic progress and standing. The retention specialist also created a tracking system to monitor the retention rate in the school of nursing overall, by gender, by ethnicity and race, and by status as a first-generation college student. The resulting retention database allowed for tracking each



individual student's use of tutoring and other services. Finally, retention advisors worked within the nursing program to assist with various services, including academic tutoring and skills workshops targeting reading comprehension, time management and note taking, exam preparation, and writing. All 21 students who enrolled in the nursing education program successfully graduated and passed the licensure examination (Murray et al., 2016). This study revealed that faculty mentorship and multiple retention strategies are important to minority students' success (Murray et al, 2016). Together, the studies reviewed in this section demonstrate that institutional factors such as mentorship and faculty interaction are particularly important for persistence among minority nursing students.

### **Strategies to Encourage Persistence**

There are several existing examples of successful strategies that encourage persistence and the promotion of student engagement in secondary nursing programs. The following subsections discuss some of the most prominent as they pertain to minority nursing students.

#### **The BESTRN Program**

Brown and Marshall (2008) reported on a project to increase student enrollment, persistence, and success, as well as the cultural competence of faculty and students, in the nursing department at Norfolk State University (NSU). This program specifically sought to increase the enrollment and success of minority students. The project's title was, "Baccalaureate Enrollment and Success Tactics for RNs" (BESTRN), and it was designed to cater to the needs of minority students through various retention strategies. Peer and faculty mentoring, technology-derived learning opportunities, and early identification of at-risk students were important components of the retention strategy (Brown & Marshall, 2008).

To focus on academic outcomes during BESTRN, NSU nursing faculty used both summative and formative evaluation tools and computerized learning tools to encourage practice and facilitate remediation. NSU nursing faculty used the Health Education Systems Incorporated (HESI) exam and other custom exams prior to the completion of each clinical course to assess effectiveness of the teaching and learning process and to ensure that each student had the necessary knowledge to go forward to the next level of the nursing program (Brown & Marshall, 2008). At the completion of the program, students were required to meet a minimum score on the HESI Exit exam in order to graduate. The purpose of this intervention was to ensure that students were adequately prepared to take the NCLEX-RN exam (Brown & Marshall, 2008). Reported results from NSU's BESTRN program revealed significant improvements. Over the two years of the program, the nursing program increased minority student enrollment by 20%, increased retention by 25%, and improved the first-attempt NCLEX pass rate by 14% (Brown & Marshall, 2008). This interesting case demonstrates the potential for institutional intervention programs targeting minority students to improve retention among this population.

### **Preadmission Assessment**

Higgins (2005) conducted a study to determine the most effective strategies for increasing the NCLEX-RN pass rate and retention rate in a community college nursing program. The setting for the study was a community college with a total student enrollment of 30,000 students. The study sample included all students enrolled in the program in the fall of 1999 ( $n = 67$ ), spring of 2000 ( $n = 69$ ), and fall of 2000 ( $n = 77$ ) (Higgins, 2005).

Higgins (2005) collected ex-post-facto data from 213 former nursing students' records, and qualitative data from 10 full-time faculty, 30 new graduates, and 45 directors of associate degree nursing programs in Texas. In the quantitative data analysis, the relationships between the

academic variables of two prerequisite biology courses and three components of a preadmission test, on the one hand, and completion of the nursing program, were investigated. The results showed that the NCLEX-RN pass rate could be predicted by the following variables: whether students had taken a prerequisite biology course, their scores on the science component of the preadmission test, their HESI exit exam scores, and whether they had taken a nursing skills course. Qualitative data analysis showed that preadmission requirements, faculty test item writing, campus counselors, and teaching methods were all instrumental in the completion of the program and in passing the NCLEX-RN. The researcher concluded that the findings supported preadmission assessment of nursing school applicants (Higgins, 2005). This perspective contrasts sharply with that of Brown and Marshall (2008) and the BESTRN program, because it focuses on the role of precollege student factors, rather than institutional responsibility, in promoting persistence. However, the qualitative findings suggested that Student-Faculty Interaction and other institutional factors can also be important.

### **The CANDO Program**

Igbo et al. (2011) implemented and evaluated a multidisciplinary strategy to encourage the persistence of nursing students from disadvantaged backgrounds. Three baccalaureate-nursing programs within the Texas Medical Center implemented the intervention. The main objective of this three-year program, known as the Consortium to Advance Nursing Diversity and Opportunity (CANDO), was to increase the number of baccalaureate-prepared nurses from minority backgrounds (Igbo et al., 2011).

The CANDO program had three tiers: (1) recruitment (a one-month summer program for students in high school and junior colleges); (2) pre-entry (a one-month summer program for students accepted to a nursing program); and (3) retention (a nine-month program focused on

assisting students during the first year of the nursing program). Igbo et al. (2011) emphasized the unique design of CANDO with respect to the high level of collaboration among the three participating nursing programs and the level of involvement of multiple disciplines in designing and supporting the program.

Multidisciplinary teams led a variety of activities, including workshops on test-taking strategies, critical thinking, study skills, and preparation for lectures. The teams also addressed medical terminology and written and oral communication skills. Over the three-year period of study, 105 students were involved in the nine-month retention program. The overall graduation rate reported was 76.8% for the three-year period, exceeding the state average (Igbo et al., 2011). The nursing faculty and the non-nursing faculty from all three schools collaborated to implement best practices for increasing the students' academic readiness, success, and persistence, producing a positive outcome (Igbo et al., 2011). By focusing on recruitment and retention equally, the CANDO program contrasts with the BESTRN program and Higgins' (2005) preadmission assessment program. The results suggest that a combination of multiple strategies may be most effective in promoting retention among minority nursing students.

### **Direct Faculty Mentorships**

Identification and remediation of at-risk students are important within every nursing program, and active management throughout at-risk students' enrollment can lead to successful graduation of at-risk minority students (Reinhardt, Keller, Summers, & Schultz, 2012). Loma Linda University (LLU) in Southern California implemented a program that serves as an example of an active management approach, in the form of faculty mentorships. LLU has shown success in recruitment of underrepresented minorities, and its minority retention rate is over 90% (American Association of Colleges of Nursing, 2001; Reinhardt et al., 2012). The program is

individualized and created jointly; each student has a faculty mentor with the same or similar ethnic background as the student. This demonstrates that a focus on personal factors like race and ethnicity in minority retention programs can lead to positive results.

Not every nursing program can implement every retention strategy, but individual initiatives to increase graduation among minorities can collectively help promote diversity and cultural competence within the nursing profession (Rosenberg & O'Rourke, 2011). A commitment from faculty and institutions to incorporate successful strategies within their respective nursing programs can lead to increased persistence among minority nursing students (Rosenberg & O'Rourke, 2011; Tinto, 2012). Although these results are promising, there still remains a shortage of minorities in the health professions and a lack of diversity among nurses nationally (Mittman & Sullivan, 2011). Therefore, there is room for more research on the specific impact of retention strategies and their mechanisms.

### **National Survey on Student Engagement**

Researchers developed the National Survey on Student Engagement (NSSE) based on the idea that the more students engage in certain types of activities (e.g., active learning, student-faculty contact, and interaction with peers), the more likely it is that they will persist and graduate from their programs (Kuh et al., 2010; Price & Baker, 2012). The NSSE is intended specifically for use by four-year colleges and universities (Kuh, 2010). It measures five dimensions of student engagement, known as the five benchmarks: *Level of Academic Challenge*, *Enriching Educational Experiences*, *Student-Faculty Interaction*, *Active and Collaborative Learning*, and *Supportive Campus Environment*. The NSSE benchmarks stem from predictor variables identified in existing research to represent the time and energy students devote to educationally purposeful experiences; these variables are the best evidence-based

predictors of personal learning, retention, and persistence (Kuh, 2009; Tinto, 1993).

In 2013 the NSSE benchmarks were expanded and redefined as *themes* and *engagement indicators*, developed with the purpose of achieving “more specificity and more actionability” from the data. The goals and purposes of the NSSE survey remain grounded in its core mission of assessing student engagement in effective educational practices to inform improvement efforts. The NSSE survey development team strives to ensure that the instrument remains up to date with trends in higher education and includes new measures relevant to effective learning and teaching. They also continually endeavor to improve on the clarity, consistency, and applicability of the survey and to strengthen the properties of existing measures (NSSE, 2014a).

The five NSSE benchmarks are described in more detail in the next subsection, along with the themes and engagement indicators (EI) that have now replaced them.

### **Benchmarks to Engagement Indicators and High-Impact Practices**

**Level of Academic Challenge.** This is an eleven-item scale on which students report the time they spend preparing for class, the amount of writing and reading they have completed, and their colleges’ expectations for academic performance. Key items such as study time, reading, and writing are reported within this theme. The scale consists of the following items:

- Preparing for class (studying, reading, writing, rehearsing etc. related to academic program)
- Number of assigned textbooks, books, or book-length packs of course readings
- Number of written papers or reports of 20 pages or more
- Number of written papers or reports of between 5 and 19 pages
- Number of written papers or reports of fewer than five pages

- Coursework highlighting analysis of the basic elements of an idea experience or theory
- Coursework highlighting synthesis and organizing of ideas, information, or experiences into new, more complex relationships and interpretations
- Coursework highlighting the making of judgments about the value of information, methods or arguments
- Coursework highlighting application of theories or concepts to problems or in new situations
- Working harder than you thought you could to meet an instructor's standards or expectations
- Campus environment highlighting time studying and on academic work (Pike, 2012)

The *Level of Academic Challenge* has now been renamed simply *Academic Challenge*, and is defined as a *theme* and described as an *engagement indicator*. This benchmark has been expanded to focus specifically on distinct dimensions of academic effort, including new topics of interest. More specifically this is now broken down into: *Higher-Order Learning, Reflective & Integrative Learning, Learning Strategies and Quantitative Reasoning*, as described below.

*Higher-Order Learning* (HO) represents how much students' coursework reflects challenging cognitive tasks such as application, synthesis, judgment and analysis (NSSE, 2014a). *Reflective & Integrative Learning* (RI) represents the extent to which students are motivated to make connections between their learning and the people and world around them. *Learning Strategies* (LS) represents how often students actively engage with course work rather than approaching learning as absorption (NSSE, 2014a). Finally, *Quantitative Reasoning* (QR) can

be defined as how often students are asked to evaluate, support and critique arguments using statistical or numerical facts.

**Active and Collaborative Learning.** This is a seven-item scale on the extent of a students' class participation, the degree to which they have worked collaboratively with other students within the classroom and outside of class, and the amount of tutoring and number of community-based projects in which they have been involved. The items in this scale are as follows:

- Asked questions in class or contributed to class discussions
- Created a class presentation
- Worked with other students on projects during class
- Worked with classmates outside of class to prepare class assignments
- Tutored or taught other students
- Participated in a community-based project as part of a regular course.
- Discussed ideas from your readings or classes with other outside of class (students, family members, co-workers, etc.) (Pike, 2012)

*Active and Collaborative Learning* has been renamed *Learning with Peers* and is defined as a *theme* and described as an *engagement indicator*. Specifically, this benchmark is now defined now as *Collaborative Learning and Discussions with Diverse Others*. It has been modified to focus specifically on and to emphasize student-to-student collaboration. Updated diversity items from *Enriching Educational Experiences* have been moved into this theme. Collaborative Learning (CL) represents how often students worked on group projects, asked others to help with difficult material or explained it to others, and worked through course material in preparation for exams with peers. Discussions with Diverse Others (DD), represents



how often students had discussions with people who are different from them in terms of race or ethnicity, political views, economic background and religion beliefs. Popkess & McDaniel (2011) used the NSSE responses to compare nursing students with students majoring in other disciplines. They reported that the nursing students were more academically challenged, engaged in more rigorous curricula, and engaged less in active and collaborative learning than other students.

**Student-Faculty Interaction.** The *Student-Faculty Interaction* scale consists of six items. Students report on the extent of their interaction with faculty, staff and advisors and on their discussions of ideas with faculty members outside of the classroom; they also report on the extent to which they receive prompt feedback on their academic performance and work with faculty members on research projects. The specific items in this scale are as follows:

- Discussed grades or assignments with an instructor
- Talked about career plans with a faculty member or advisor
- Discussed ideas from your readings or classes with faculty members outside of class
- Worked with faculty members on activities other than coursework (student-life activities, committees, orientation, etc.)
- Received prompt feedback from faculty on your academic performance (written or oral)
- Worked with a faculty member on a research project outside of program or course requirements (Pike, 2012).

*Student-Faculty Interaction* has been renamed *Experiences with Faculty* and is now defined as a theme, and the updated *Student-Faculty Interaction* indicator is combined with a second measure, defined as Effective Teaching Practices. Student-Faculty Interaction (SF) can

be defined as how often students interact with their faculty outside of courses, for example when talking about career plans, discussing academic performance or course content and working on non-course activities.

**Enriching Educational Experiences.** This is a scale with twelve items, that investigates the extent of students' interaction with those of different racial backgrounds or with different values or political opinions; their use of information technology; and their participation in activities such as studies abroad, community service, internships and co-curricular activities. The items making up this scale consist specifically of:

- Participating in co-curricular activities (Student government, organizations, sports, publications, etc.)
- Clinical assignment, practicum, field-experience, internship, or co-op experience
- Volunteer work or community service work
- Foreign language coursework
- Studying abroad
- Independent study or self-designed major
- Culminating senior experience (project, capstone course, thesis, comprehensive exam, etc.)
- Serious conversations with students of different political opinions, religious beliefs or personal values
- Serious conversations with students of a different ethnicity or race
- Using electronic technology to complete or discuss an assignment
- Campus environment encouraging contact among students from different economic, racial, ethnic or social backgrounds

- Participate in a learning community or some other formal program where groups of students take two or more classes together (Pike, 2012)

*Enriching Educational Experiences* is now defined as a theme entitled *Participation in High-Impact Practices*, which includes: *Learning Communities; Service-Learning; Research with Faculty; Study Abroad; Internships and Field Experiences; and Culminating Senior Experiences*. The scores on the enriching experiences benchmark were noted within one prominent study to be significantly associated with institutions' 6-year graduation rates. In particular, the study found that the Enriching Educational Experiences scores were the third most dominant factor explaining the institutions' graduation rates. This directly contradicts the belief, held by some outside of higher education, that students' persistence to their degree can be impeded when they become active in a variety of experiences outside of the classroom. Instead students' involvement in many different educational activities that may include studying abroad, internships and self-created majors seem to increase the likelihood of obtaining a degree within 6 years (Pike, 2013).

**Supportive Campus Environment.** Lastly, this is a six-item scale measuring the extent to which students feel that the campus helps them succeed socially and academically; assists them in coping with nonacademic responsibilities; and promotes supportive relationships among faculty members, administrative personal, and among students and their peers. The specific items in this scale are as follows:

- Campus environment provides the support you need to help you succeed academically
- Campus environment helps you cope with your non-academic responsibilities (family, work, etc.)

- Campus environment provides the support you need to thrive socially
- Quality of relationships with faculty members
- Quality of relationships with other students
- Quality of relationships with administrative personnel and offices (Pike, 2012).

The theme has been renamed *Campus Environment* and now includes *Quality of Interactions and Supportive Environment*. Quality of Interactions (QI) represents the quality of student interactions with their peers, faculty, staff advisors and other offices. Supportive Environment (SE) represents students' perceptions of how much their institution emphasizes services and activities that support both their development and learning. Table 1 summarizes the differences between the former NSSE benchmarks and the new engagement measures.

In representing the many dimensions of student engagement, the NSSE reports on 10 Engagement Indicators calculated from 47 core NSSE items. The indicators are grouped within four themes (created from the previous NSSE Benchmarks). Additionally, in a separate report, NSSE provides results on six High-Impact Practices, labeled for their positive associations with student learning and persistence (NSSE, 2015).

In the *Engagement Indicators* report, each EI is expressed on a 60-point scale. Component items are converted to a 60-point scale (e.g., Never=0, Sometimes=20, Often=40, and Very often=60), then averaged together to compute student-level scores. Institutional EI scores are weighted averages of student-level scores for each class level. Student-level EI scores are provided to participating institutions in their NSSE data file.

Table 1

*Differences between the former NSSE Benchmarks and New Engagement Measures*

Former NSSE Benchmarks	New Engagement Measures
Level of Academic Challenge	Higher-Order Learning Reflective and Integrative learning Learning Strategies Quantitative Reasoning <i>Theme: Academic Challenge</i>
Active & Collaborative Learning	Collaborative Discussions with Diverse Others <i>Theme: Learning with Peers</i>
Student-Faculty Interaction	Student-Faculty Interaction Effective Teaching Practices <i>Theme: Experiences with Faculty</i>
Supportive Campus Environment	Quality of Interactions Supportive Environment <i>Theme: Campus Environment</i>
Enriching Educational Experiences	Participation in High-Impact Practices Learning Communities Service-Learning Research with Faculty Study Abroad Internships and Field Experiences Culminating Senior Experiences

The NSSE provides universities and colleges valuable information on how undergraduates view and rate their collegiate experiences. The survey collects information on how students spend their time, what they gain from the institution, and their level of participation in learning activities and experiences with faculty, both inside and outside the classroom (Kuh, 2010). Over 1,100 postsecondary institutions and colleges in the United States and Canada administer the NSSE. Between 2000 and 2012, approximately 3.7 million students enrolled in 1,552 universities and colleges completed the NSSE (Pike, 2012).

One of the most important research projects carried out using the NSSE was the Documenting Effective Educational Practice (DEEP) project (Kuh et al., 2010). This project, which focused on student engagement and retention rates, was implemented in 20 diverse institutions around the country, 11 of which were public and 9 private. The researchers stated that they chose these particular colleges and universities “in part to represent the diversity of baccalaureate-granting institutions” (Kuh et al., 2010, p. 18). In addition, the 20 schools had higher than average ratings in the five NSSE benchmark areas (Student Interaction with Faculty, Active and Collaborative Learning, and Level of Academic Challenge, Supportive College Campus Environments, and Enriching Educational Experiences).

The primary purpose of the DEEP project was to reveal what these colleges and universities do to promote student success, in order to provide a model for other colleges and universities to follow (Kuh et al., 2010). The researchers compared the five NSSE benchmark areas with six-year graduation rates at each of the schools they studied. Additionally, they sought to identify the common factors among these 20 schools that might be contributing to their high levels of student engagement and retention. Results showed that the schools had several effective interventions and strategies in common. Many offered first-year seminars, learning communities,

and study abroad opportunities for their students. These strategies are also common to hundreds of other colleges and universities but according to Kuh et al. (2010), the 20 schools that took part in the project stood apart from others in how they implemented their interventions. The researchers discovered that complex combinations of internal and external factors, along with strong campus cultures, promoted successful outcomes for students.

### **Limitations of Existing Research**

Many of the studies reviewed here have limited applicability because they were based on small samples generated using convenience-sampling methods. In many studies, the nursing students researched were from just one or two universities. Even the larger studies, such as Kuh et al. (2010), had relatively small sample sizes that hinder their wider relevance. More than 700 four-year colleges and universities have used the NSSE, for example, but only 20 were chosen for the DEEP project (Kuh et al., 2010). As a result, the findings may not have generalizability to all four-year nursing programs.

There remains a paucity of research on minority nursing students' persistence. As mentioned earlier, only a few previous studies were designed with the objective of discovering the difference between minority and non-minority nursing students' perceptions of educational strategies that promote success, positive student engagement and persistence (Childs et al., 2004; Dapremont, 2014; Graham et al., 2016; Murray et al., 2016; Tab, 2016). Typically, nursing programs do not record separate retention rates for minority nursing students. Further, researchers have noted that it is often very difficult to obtain data specifically on persistence and matriculation from nursing programs and institutions, especially relating to minority nursing students (Evans, 2013; Mooring, 2016; Tinto, 2012). Some demographic data are not revealed or

shared due to the very small numbers within the minority subgroup of students, which mean that programs are often unwilling or unable to divulge this information due to ethical reasons.

There is a significant gap in the nursing literature pertaining to effective strategies and educational practices geared directly to improving persistence and matriculation rates among minority nursing students (Childs et al., 2004; Evans, 2013). There has been a recent increase of retention programs and interventions within many universities, but the results of any evaluations of these often remain unpublished (Evans, 2013; Mooring, 2016; Tinto, 2012). There is a pressing need, therefore, for further research on persistence and academic achievement among minority students and on the impacts of various interventions on these.

Studying the reasons for low matriculation among minority nursing students forces institutions to consider the effectiveness of their educational structures, including for example admission policies, student-faculty engagement, quality of campus life, teaching quality, academic quality, and intellectual development (Pascarella, & Terenzini, 2005; Tinto, 2012). Institutions must critically review their educational practices in order to improve. Although there are many interventions available to increase student persistence, there is no standard blueprint for applying these (Kuh et al., 2010).

Furthermore, much of the existing literature focuses insufficiently on institution-specific factors, and little educational research exists that takes into account the unique characteristics of each student body. Some studies have attempted to show that there are clear differences in scores among adult students versus traditional age students due to the greater focus of the mature learners on out of the classroom experiences. The scores are generally lower on survey items arguing there may be some bias against adult learners supporting the notion that the idea of one size does not fit all and measures of engagement may not adequately mirror the perspectives or



experiences of certain populations or groups (Price & Baker, 2012). Gathering data on personal characteristics alongside student engagement and retention rates could help address this limitation.

### **Summary**

Despite fifty years of research on the causes of decreasing persistence among students, there is still no simple answer or easy fix for student departure. Matriculation and persistence research remain complex problems within education today. The complexities involved in understanding the low rates of matriculation among minority nursing groups pose major obstacles to the creation of retention programs or interventions that will yield positive educational results within institutions (Tinto, 2012). Demographic variables such as sex and race often impact nursing students' educational participation and experiences due to the many barriers and obstacles faced by individuals within certain sub-groups, such as minorities. These may include feelings of physical and emotional alienation due to the pressure of being able to afford and sustain a nursing education (Diefenbeck, Michalec, & Alexander, 2016). Within higher education, some school-based influences have been identified, relating to the interactions and experiences students have with their peers, faculty and advisors. However, researchers have suggested that many of the causes of low persistence among minority students are non-academic in nature, including for example financial obligations, family obligations, stress, isolation, or loneliness (Abele et al., 2013).

Nursing programs, nursing faculty, administrators, and institutions have acknowledged that the retention rates in bachelor-level nursing programs remain low (Abele et al., 2013; Mooring, 2016; Murray et al., 2016). There is no difference in two-year and four-year nursing programs with regards to persistence. Multidisciplinary strategies can increase retention rates

with diversity led recruitment practices, pre-entry assessments, early identification of at-risk students, and faculty-led mentoring and feedback interventions for at-risk minority students (Murray et al., 2016; Riley & Fearing, 2009; Wilson et al., 2010).

Relational mentorship, frequent and consistent interaction between faculty and students, reflective pedagogy, and active learning have all been shown to be successful in increasing persistence (Abele et al., 2013). Kuh (2010) and Tinto (2012) agree that faculty mentoring improves minority students' success, along with supportive learning environments and strong faculty support (Bennett et al., 2016; Murray et al., 2016). All these factors improve persistence by creating student engagement. The NSSE benchmarks measure the most important elements of student engagement (Kuh, 2009, 2010; Tinto, 1993, 2012). Among the five NSSE benchmarks/themes, faculty mentorship and supportive learning environments appear to be particularly important, as the more successful studies reviewed here have shown.

The next chapter sets out the methodology for the study. The chapter contains a description of the setting and sample, the research design, the data collection and analysis procedures. I also describe validity, reliability, and ethical considerations in Chapter III.

### CHAPTER III: METHODOLOGY

The purpose of this quantitative study was to use NSSE benchmark/theme data to investigate any differences between minority and non-minority nursing students' engagement and persistence, at one baccalaureate nursing program in the southeast United States. The study has also explored the ways in which pre-college characteristics and demographic factors (sex, race, family educational background, college GPA) contribute to or predict success among both minority nursing students and non-minority nursing students and any differences in these between the two groups. As discussed in the preceding chapters, the more students engage socially and academically with faculty, peers, and staff, the more likely it is they will be successful in college (Tinto, 2012). This study addresses a gap in the existing literature regarding the extent to which student engagement influences persistence among both minority and non-minority nursing students. There is also a lack of previous research investigating how college and pre-college related demographics together influence engagement among minority students and non-minority students (Hall, et.al, 2011), which the current study addresses. Some of the studies reviewed in Chapter II suggest that both policymakers and educational researchers should take a closer look at determinants of engagement by racial/ethnic groups and review the differences between all groups of students (Hall, Cabrera & Milem, 2011).

In this chapter, I present the study methodology. The chapter contains sections on the following topics: the setting and sample for the study, the research design, the research

instruments (including the NSSE), data collection, data analysis, validity and reliability, and ethical considerations. A summary concludes the chapter.

### **Research Questions**

The first research question of the study was: Is there a difference between minority and non-minority baccalaureate nursing students on student engagement activities as measured by the NSSE benchmarks (Level of Academic Challenge, Active Collaborative Learning, Student-Faculty Interaction, Enriching Educational Experiences, and Supportive Campus Environment)?

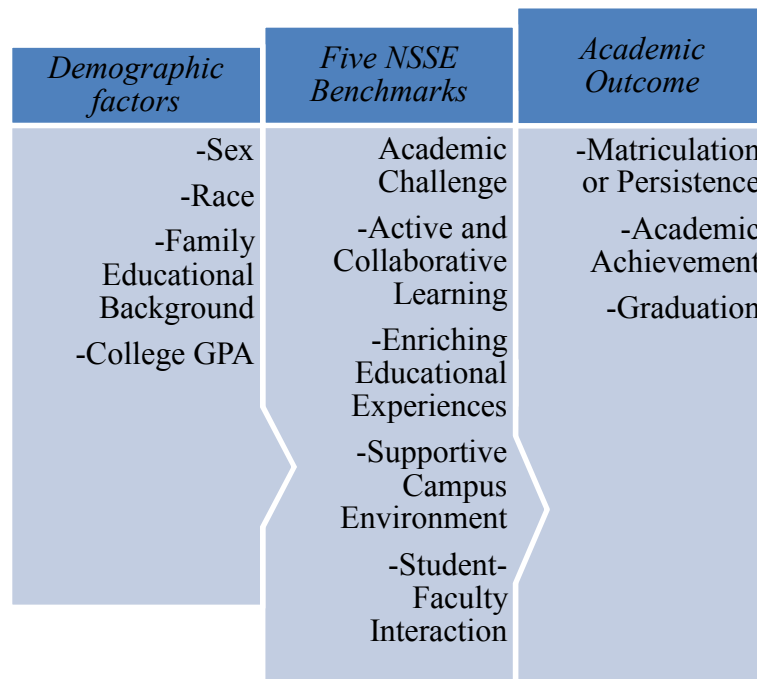
The second research question was: When controlling for demographics (sex, race), do the NSSE benchmarks (Level of Academic Challenge, Active Collaborative Learning, Student-Faculty Interaction, Enriching Educational Experience, and Supportive Campus Environment) predict success or matriculation among minority nursing students?

### **Research Design**

The research design reflects the study objectives of examining differences between minorities and non-minorities in successful matriculation and exploring whether demographic factors and precollege variables, in conjunction with student engagement as measured by the five NSSE benchmarks/themes, may predict successful matriculation (whether or not the student remained enrolled) and persistence to graduation. The differences between minority and non-minority groups were compared. Figure 1 contains a graphical representation of this conceptual design.

The study used quantitative methods with an ex post facto design, based on secondary analysis of NSSE data collected from freshmen and seniors from the 2014 NSSE survey. Creswell (2009) noted that a quantitative design is the most logical method to use when a study involves exploring interrelationships among variables that are analyzable by standard statistical

procedures. For the purposes of the study, I analyzed demographic data (sex, race), successful matriculation (whether or not the student was retained) and NSSE data measuring five benchmarks/themes of engagement. Logistical regression was used to examine the relationships between the engagement benchmarks, the demographics, and whether or not students remained enrolled.



*Figure 1.* Five NSSE benchmarks and their relationship to six-year graduation rate, persistence and academic achievement in relation to students’ precollege and college background.

This study design is ex post facto, or “after the fact,” since it is based on existing data (Creswell, 2009). The NSSE 2014 survey had already happened, and both the demographic and academic characteristics of students were already established and recorded. Ex post facto studies are appropriate for answering research questions about correlations between variables (Abele et al., 2013; Bennett et al., 2016; Donnell, 2015). Owing to the ex post facto design, however, no

manipulation of variables was possible, which prevented the drawing of any cause and effect conclusions (Donnell, 2015).

### **Setting**

I initially attempted to include within my study four to five nursing programs. I reached out to a total of six nursing programs. One declined participation but gave no specific reasons, and two had no available IRB staff available, and therefore I was unable to obtain IRB approval to request data. One reported that the NSSE administration in 2014 suffered from very low response rates (9% response rates for Freshman and 14% response rate for Seniors). Specifically this particular institution reported seven minority “health professions” and 20 non-minority senior students who completed some or all of the questions. Subsequently this institution reported too few numbers to conduct any meaningful analysis.

Only three institutions had available IRB staffing, and initially agreed to share very limited NSSE survey information and limited demographical information. All three of these schools participated in the NSSE in Spring, 2014, with the survey administered to all freshmen and seniors. The institutions’ total undergraduate populations ranged between 6,587 and 32,058 (Institute of Education Sciences, 2015). All three institutions have higher six-year graduation rates for their total body of minority students versus non-minority students. These three schools were a sample of convenience, since I had access to the three programs owing to geographical proximity and previous employment at one of the schools. At the time of the research, however, I was not an employee or affiliate of any of the schools, and the schools were not selected based on any pre-existing knowledge of the characteristics of their baccalaureate nursing student populations.

In the event, however, only one school agreed to participate and provided limited NSSE survey information and limited demographical information for the purpose of analysis. One of the other schools that had originally agreed to participate stated that although they participated with the NSSE survey, the results were not separated among colleges, so there was no way to determine who from the nursing school participated versus those from other majors such as education or math. This school also reported that they would be unable to divulge minority status of a nursing student due to extreme low numbers with participation < than 10 students who identified as minority. Altogether this school was very reluctant to take part due to concerns about possible ethical issues. This institution was therefore not included in the final analysis. Another of the three schools that had previously agreed to participate subsequently cited ethical reasons for non-participation, stating that due to sanctions and written agreement and confidentiality forms, they could not share any NSSE data separated by race, sex or school program or any raw data at all.

The remaining school that did participate in the study has a diverse population of students and attracts applicants from all socioeconomic backgrounds. The institution nursing program has high rankings in the *US News & World Report* owing to high first-time pass rates (above 90%) for the 2012 NCLEX-RN examination (National Council of State Boards of Nursing, 2015; US News & World Reports, 2015, January 29, August 11). Institutional data indicates that the undergraduate population for the 2014-2015 academic year consisted of 23,592 students, 80% of which were full-time. Of the total 32,058 undergraduates, 20,571 were full-time, first-time enrolled. The gender breakdown of this institution's entire cohort was 49% male, and 57% female. Of this cohort, 30%-71% were minority; nonminority 50%; and unknown ethnicities 0%; nonresident aliens 41%. Of the three schools that originally agreed to participate in the study,

this university had the highest total number of RN graduates of 222 and their six-year graduation rates were equal among minorities and non-minority students (IES,2015). Specific and required data for analysis was provided after IRB approval and assistance from the Director of Institutional Effectiveness.

Table 2  
*Institutional Characteristics, 2014-2015*

	Total Full Time Undergraduate Population	Student-to-Faculty Ratio	Six-Year Graduation Rates for Minorities in cohort / Total RN Graduates	Six-Year Graduation Rates for Non-Minorities in cohort
Participating University	23,592	21-1	44% / 222	44%

*Note.* Data reported for the 2014-2015 academic year for total number of minority and non-minority graduates for entire student body and total number of RN graduates (Institute of Education Sciences, 2015)

The institution which provided data for this study consists of two campuses and thirteen different colleges, and is located in a large suburban area. The institution includes Colleges of Business, Architecture, Computing and Software Engineering, Humanities and Social Sciences, Science and Mathematics, Arts, Engineering, Technology, and Health and Human Services. This institution offers more than 150 undergraduate, graduate and doctoral degrees to its more than 35,000 students. One of the 50 largest public institutions in the country, it is also listed as a doctoral institution with moderate research activity by the Carnegie Classification of Institutions of Higher Learning.

### Sample

The NSSE was administered to all freshman and seniors in Spring 2014. At this time, there were approximately 1026 freshman and seniors in the three schools originally selected for participation in the study; only those students who completed the NSSE were included in the



initial sample. The achieved initial sample size was 513, corresponding with the number of available NSSE responses from nursing students at the three schools. The results of the power analysis revealed a necessary sample size of at least 242. However, only one of the schools sent the NSSE scores for their individual nursing students. The other two schools only sent an entire school summary rather than the summaries for the nursing students alone. The summary data could not be used in the analysis as the statistical tools used required individual student data, not group summary data. Therefore, instead of 242 from three schools, the final achieved sample consisted of 98 nursing students from one school.

### **Data Collection Instruments**

The primary research instrument for this proposed study is the NSSE, which surveys first-year and senior level college students regarding their engagement levels. By design, the NSSE assesses the extent of student engagement. The NSSE's purpose is to provide data that institutions can use to improve the undergraduate experience (Chambers & Chiang, 2011; Kuh, 2010).

The NSSE is a web-based, 28-item, Likert-scale self-reported survey. It solicits responses to questions on how students spend their time and energy on educationally purposeful activities, their personal perceptions of their institutions' commitment to providing resources that support student success and development, and specific background and demographic information. A copy of the NSSE instrument appears in Appendix A.

The first 14 survey items are arranged in three groups. The first group asks about educational development and personal development during the academic year (e.g. how many hours the students have devoted to their schoolwork and extracurricular activities). The second group of questions asks the students' opinions on their college environment, and the third group

asks about their participation in college activities (e.g. whether they have taken advantage of working with a faculty member on a research project, internships, community service or study abroad). The types of response options for items in this section included *very often*, *often*, *sometimes*, and *never*.

The professional and educational development items ask students to assess and report on their involvement in activities such as public speaking, writing papers, critical and analytical thinking, self-reflection, and on their interactions with diverse others. Students are required to rate these items on a scale including *very often*, *often*, *sometimes*, and *never*. The survey also asks students to report their opinions of their institution, including their overall satisfaction with college, with the response options including *excellent*, *good*, *fair*, or *poor*. They are also asked about the extent to which their institutions are perceived to value volunteer work, community service, and other educationally purposeful activities, with the response options including *very much*, *quite a bit*, *some* or *very little*.

The remaining 14 items of the NSSE instrument ask for demographic information including sex, age, college classification, race/ethnicity, college major, on-campus/off-campus residence, grades, fraternity/sorority membership, athletic affiliation, and parents' education levels (NSSE, 2014a).

### **Validity and Reliability**

Rigorous quantitative research uses valid and reliable research instruments (Creswell, 2009). The use of validated existing research instruments can help ensure the validity and reliability of quantitative studies (Creswell, 2009). Validity refers to whether a particular instrument measures what its developers intended it to measure and whether one can draw useful and meaningful inferences from the scores of the instrument (Creswell, 2009). Reliability is the

consistency of measurements over repeated administrations of the instrument (Creswell, 2009). According to the developers of the NSSE, its validity and reliability have been thoroughly tested (Kuh, 2009, 2010; Kuh et al., 2011; Pike, 2012). Over several years, the NSSE instrument has proven to be reliable, given the consistent patterns of responses and normal distributions (Kuh, 2009, 2010; Kuh et al., 2011; Pike, 2012).

The NSSE adheres to five conditions shown to improve the validity of self-report instruments (Popkess & McDaniel, 2011): (a) respondents know the purpose of the survey; (b) the questions are phrased clearly and unambiguously; (c) the questions refer to recent activities; (d) the respondents think the questions merit a serious and thoughtful response; and (e) answering the questions does not threaten, embarrass, or violate the privacy of the respondent or encourage them to answer in socially desirable ways (Kuh, 2009).

The administration of the NSSE is different from that of many other surveys. A third party, the Indiana University Center for Survey for Post-Secondary Research, sends the survey direct to randomly selected first-year and senior students at four-year universities and colleges. The patterns of responses between first-year students and seniors suggest the items have validity (Kuh et al., 2010). The validity of the instrument receives support from empirically tested theoretical assumptions (Kuh et al., 2002).

One measure of the reliability of a scale is internal consistency (Creswell, 2009). Cronbach's alpha is an estimate of the internal consistency of a set of items, indicating how well those items interact within the population and the extent to which the set of items measures a single construct (Hinkle, Wiersma & Jurs, 2003). Cronbach's alpha ranges in value between 0 and 1. Values that are closer to 1 indicate a higher internal consistency and values closer to 0 indicate a lower internal consistency. The results reported by NSSE's 2014 internal consistency

report include Cronbach’s alphas among various populations for the NSSE Engagement Indicators, which indicate a high degree of reliability for the scales. Cronbach’s alphas ranged between .765 for the first-year Learning Strategies scale and .898 for the senior Discussions with Diverse Others scale. The average inter-item correlations for the scales fell within acceptable levels (NSSE, 2015). Table 3 presents the Cronbach’s alpha values by class (NSSE, 2014b).

Table 3  
*NSSE Cronbach’s Alpha Values by Class*

Engagement Indicator	1 <sup>st</sup> Year	Senior
Higher-Order Learning	.853	.856
Reflective & Integrative Learning	.875	.885
Learning Strategies	.765	.778
Quantitative Reasoning	.857	.875
Collaborative Learning	.807	.805
Discussions with Diverse Others	.886	.898
Student-Faculty Interaction	.829	.853
Effective Teaching Practices	.843	.865
Quality of Interactions	.845	.806
Supportive Environment	.888	.891

*Note.* Source: Permission obtained to use 6/7/2017 NSSE 2014 Report. Data retrieved from Internal Consistency of the Engagement Indicators (NSSE 2014) Report; Questions, response options, and variable names for the individual items within each Engagement indicator are available in the NSSE Codebook ([nsse.iub.edu/html/data\\_codebooks.cfm](http://nsse.iub.edu/html/data_codebooks.cfm)).

The NSSE draws directly on other surveys (e.g., HERI or the Higher Education Research Institute, a UCLA first-year student survey and its follow-up). The NSSE survey “relied heavily

on the items that had already been used which gives the instrument immediate credibility” (Schroeder, 2003, p. 10). Research has shown that students are credible, accurate reporters of their activities and how much they have personally benefitted from their collective college experiences, provided the survey items are clearly worded (Kuh, 2009; Kuh et al., 2010).

### **Data Collection and Sample Size**

The university included in this research had already collected the data necessary for the study using the Spring 2014 NSSE. Due to typical low response rates on these surveys, I planned to combine three institutions’ NSSE data to obtain a sample size suitable for examination. I was only able to include one university within the study. Approval was obtained from the Institutional Review Board (IRB) to gain access to the archived student data.

To determine an appropriate sample size for logistic regression and MANOVA, I conducted a power analysis using G\*Power. For the MANOVA the following parameters were used: effect size=.40; alpha=.05; power=.80; number of response variables= 5 (number of engagement scales). The results of the power analysis revealed a necessary sample size of at least 322. For logistic regression the following parameters were used: one-tailed test: odd ratio=1.5;  $\Pr(Y=1/x=1)$ ;  $H_0=.2$ ; alpha=.05; power=.80;  $R^2$  other  $x = .0$ . The results of the power analysis revealed a necessary sample size of at least 242. These parameters are appropriate to determine the required sample size to detect medium effects based on the statistical test called a power analysis (Faul, Erdfelder, Buchner & Lang, 2009). As the MANOVA would require a larger sample, a sample size of 322 will be used. The total number of RN graduates overall from all three institutions totaled 513 students, indicating that the sample size was sufficient to answer the research questions. Three schools agreed to participate. However, only one of the schools sent

the NSSE scores for their individual nursing students. Therefore, instead of 242 from three schools, the initial sample consisted of 98 nursing students from one school.

### **Data**

Descriptive and inferential statistical techniques were used to analyze the data and answer the research questions. Descriptive statistics summarize the data (Hinkle et al., 2003), and include means and standard deviations for continuous variables and number and percentage for categorical variables. Inferential statistics make predictions and draw conclusions and inferences based on the data collected (Hinkle et al., 2003).

The first research question of the study was: Is there a difference between minority and non-minority baccalaureate nursing students on student engagement activities as measured by the NSSE benchmarks (Level of Academic Challenge, Active Collaborative Learning, Student-Faculty Interaction, Enriching Educational Experiences, and Supportive Campus Environment)?

The second research question was: When controlling for demographics (sex, race), how do the NSSE benchmarks (Level of Academic Challenge, Active Collaborative Learning, Student-Faculty Interaction, Enriching Educational Experience, and Supportive Campus Environment) predict success or matriculation among minority and non-minority nursing students?

### **Ethical Considerations**

For the protection of the institutions and their students, no identifiable information or individual institutional names have been used in the thesis, and will not be used in any future publications. I specifically requested that the institutions provide only aggregate data sets with de-identified data files containing no names or other student identifiers (e.g., names, social

security numbers, addresses, or phone numbers, or any indirect identifiers such as codes or pseudonyms that are linked to the student's identity). The de-identified data sets, however, included demographic information (sex and race) relating to all of the freshman and senior students who participated in the Spring 2014 NSSE survey. The study results are provided only in aggregate form. With only a de-identified data set for the purpose of this study I did not have access to any students' names or identifying information, and the complete anonymity of students has been maintained. As an additional protection for participating institutions and their students, all data has been stored on locked or password-protected devices, and will be destroyed after five years. Because the study used an ex post facto design, there was no requirement for participants to provide informed consent.

### **Summary**

This chapter has provided an overview of the proposed research design, instrumentation, data collection and data analysis procedures, sample selection, and the reliability and validity of the research instrument. It has explained that the study has used quantitative methods with an ex post facto design. To answer the research questions, logistic regression analysis and descriptive statistics have been used. Historically, student retention studies have been correlational in design (Terenzini, 1982); therefore, the results of this study can be compared with those of previous researchers. The current chapter also included a description of the ethical considerations relevant to the study. The following chapter sets out the research results.

## CHAPTER IV: DATA ANALYSIS

The primary purpose of this study was to explore the relationship between students self-reported engagement patterns, and activities and matriculation, based on data relating to undergraduate minority and non-minority nursing students. The engagement patterns are the benchmarks as measured by the NSSE (Level of Academic Challenge, Active Collaborative Learning, Student-Faculty Interaction, Enriching Educational Experiences, and Supportive Campus Environment). This chapter presents the results of the data analyses. It provides a detailed description of the sample population and addresses the two research questions that directed the study. The chapter is presented in two distinct sections. The first section describes the descriptive statistics applied to provide a description of the sample population obtained for this study. The second section presents the answers to the research questions by utilizing logistic regression analysis, chi-square, and statistical analysis MANOVA. The predictor variables and NSSE benchmark scores were first analyzed separately to determine their specific relationships to the prediction of success and matriculation among minority and non-minority nursing students. These variables were then entered into a final logistic regression model in order to reveal their respective contributions to the prediction of successful matriculation for the sample of minority and non-minority nursing students.



## **Description of the Sample**

The sample consisted of two groups of students: (1) Minority and non-minority freshman nursing students from the Fall 2013 freshman cohorts of full-time, first-year students who participated in the spring 2014 administration of the NSSE; and (2) Minority and non-minority seniors nursing students who began their college matriculation as full-time, first time freshman at the selected institution who participated in the Spring 2014 administrations of the NSSE.

As mentioned in the previous chapter, many previous studies involving engagement research have had limited applicability because they were based on small, convenience samples. In many of these studies, the nursing students researched were from just one or two universities. I attempted to include within my study at least four nursing programs, and initially contacted a total of six nursing programs to seek their agreement to participate. In the event, I obtained IRB approval and consent to participate from three institutions, but only one of these schools provided sufficient and specific data needed for the analysis, consisting of NSSE 2014 data for their minority and non-minority nursing students. The Office of Institutional Effectiveness and Research at this public institution researched their database to obtain the target population sample of minority and non-minority, full-time, first-time freshman and seniors who began as full-time first-time students. The analysis was conducted using the data from this university.

The results of the power analysis revealed a necessary sample size of at least 242. Three schools had agreed to participate. However, only one of the schools sent the NSSE scores for their individual nursing students. The other two schools only sent an entire school summary rather than the summaries for the nursing students alone. The summary data could not be used in the analysis as the statistical tools used required individual student data, not group summary data. Therefore, instead of 242 from three schools, the actual achieved sample consisted of 98 nursing

students from one school. Of the 98 records supplied, nine of the students-did not complete the entire survey. These cases were therefore eliminated leaving a total of 89 nursing students in the final sample.

The sample of selected students from the 2014 NSSE consisted 78.7% (n=70) freshmen and 21.2% (n=19) seniors. Overall, sixty-three percent (62.9%; n=56) were non-minority nursing students and 37.1% (n=33) were minority nursing students. Most of the minority (87.9%) and non-minority (92.9%) nursing students were female (Table 4), and the majority of both the minority (87.9%) and non-minority (73.2%) nursing students were freshmen (Table 5).

Table 4  
*Sample Demographic Characteristics: Gender by Minority/Non-Minority*

	Non-minority		Minority	
	n	% <sup>a</sup>	n	% <sup>b</sup>
Male	4	7.1%	4	12.1%
Female	52	92.9%	29	87.9%

<sup>a</sup>percents represent percent of respective variable levels for non-minority nursing students

<sup>b</sup>percents represent percent of respective variable levels for minority nursing students

Table 5  
*Sample Demographic Characteristics: Academic Class by Minority/Non-Minority*

	Non-minority		Minority	
	n	% <sup>a</sup>	n	% <sup>b</sup>
Freshman	41	73.2%	29	87.9%
Senior	15	26.8%	4	12.1%

<sup>a</sup>percents represent percent of respective variable levels for non-minority nursing students

<sup>b</sup>percents represent percent of respective variable levels for minority nursing students

Minority nursing students were just slightly over-represented in this sample compared with national data: according to the AACN's (2015) annual survey on enrolment and graduation in baccalaureate and graduate degree programs in nursing, 31.6% of baccalaureate nursing students were of minority racial/ethnic groups. Male students are slightly under-represented in the sample compared with their distribution among nursing students nationally: AACN (2017) reports that in 2016, male students accounted for approximately 12% of all baccalaureate and graduate nursing students, compared with 9% of this sample. In broad terms, however, it can be concluded that the distribution of the sample by minority/non-minority and by gender is not markedly different to the national distribution.

## **Results**

Level of Academic Challenge (LAC): The score was calculated by summing the responses to questions #1 (a-h), #2 (a-g), #4 (a-e), #6 (a-c), #7 (a-c), 9 (a-c), #10, and #16 (See Appendix A for corresponding numbered questions within the 2014 sample NSSE Survey). For the minorities the scores ranged from 67 to 134 with a mean of 102.9 (SD (Standard Deviation) =16.2). For the non-minorities the scores ranged from 69 to 135 with a mean of 97.7 (SD=19.2) (Table 6).

Student Faculty Interaction (SFI): The score was calculated by summing the responses to questions #3 (a-d) and #5 (a-e) (See Appendix A for corresponding numbered questions within the 2014 sample NSSE Survey). For the minorities the scores ranged from 14 to 36 with a mean of 23.4 (SD=14.5). For the non-minorities the scores ranged from 9 to 36 with a mean of 24.1 (SD=5.2) (Table 6).

Active and Collaborative Learning (ACL): As discussed in Chapter 3, updated diversity items from *Enriching Educational Experiences* (EEE) have now been moved to this theme.

Scores were calculated by summing the responses to questions #8 (a-d), #11 (a-f), #12, and #17 (a-j) (See Appendix A for corresponding numbered questions within the 2014 sample NSSE Survey). For the minorities the scores ranged from 40 to 81 with a mean of 59.9 (SD=9.7). For the non-minorities the scores ranged from 35 to 77 with a mean of 57.0 (SD=9.5) (Table 5).

Supportive Campus Environments (SCE): Scores were calculated by summing the responses to questions #13 (a-e), #14 (a-i), #15 (a-h), #18, and #19. For the minorities the scores ranged from 53 to 91 with a mean of 70.6 (SD=9.5). For the non-minorities the scores ranged from 47 to 96 with a mean of 70.3 (SD=111.2) (Table 6).

Table 6  
*Descriptive Benchmark Variables by Minority/Non-Minority*

Benchmark	Minority	N	Mean	SD	Min	Max
LAC	No	53	102.9	16.2	69.00	135.00
	Yes	32	97.7	19.2	67.00	134.00
SFI	No	54	24.1	5.2	9.00	36.00
	Yes	32	23.4	4.5	14.00	36.00
ACL	No	55	59.9	9.7	40.00	81.00
	Yes	27	57.0	9.5	35.00	77.00
SCE	No	55	70.3	11.2	47.00	96.00
	Yes	28	70.6	9.5	53.00	91.00

*Note.* LAC = level of academic challenge, SFI = student faculty interaction, ACL = active and collaborative learning, SCE = supportive campus environments

The first research question of the study was: Is there a difference between minority and non-minority baccalaureate nursing students on student engagement activities as measured by the NSSE benchmarks (Level of Academic Challenge, Active Collaborative Learning, Student-Faculty Interaction, Enriching Educational Experiences, and Supportive Campus Environment)?

MANOVA was used to answer this research question. MANOVA is used when determining if there is a difference between groups on several dependent variables. The dependent variables were Level of Academic Challenge, Active Collaborative Learning, Student-Faculty Interaction, Enriching Educational Experiences, and Supportive Campus Environment. The independent variable was minority (yes, no).

The MANOVA results were non-significant,  $F(4, 69) = .512, p = .727$ . There was no significant difference between the minority and non-minority groups on the four dependent variables (NSSE benchmarks). (Table 7)

Table 7  
*Multivariate F Ratios for Benchmarks by Minority/Non-Minority, n=74*

Source	<i>F</i>	<i>df</i>	<i>p</i>	$\eta^{2a}$	<i>Power</i>
Minority	.512	4, 69	.727	.029	.165

<sup>a</sup> $\eta^2$  = effect size

Univariate analyses were conducted to examine the individual dependent variables. There were no significant differences between the minority and non-minority groups on the four dependent variables: LAC,  $F(1, 69) = 1.48, p = .228$ ; SFI,  $F(1, 69) = .15, p = .703$ ; ACL,  $F(1, 69) = .95, p = .333$ ; SCE,  $F(1, 69) = .12, p = .725$  (Table 8).

Table 8

*Univariate Results for Four Dependent Variables by Minority/Non-Minority, n=74*

DV	Minority	Mean	SD	F	<i>p</i>	$\eta^{2a}$	Power
LAC	No, <i>n</i> =50	103.7	16.3	1.48	.228	.020	.224
	Yes, <i>n</i> =24	98.3	20.6				
SFI	No, <i>n</i> =50	24.1	5.1	.15	.703	.002	.066
	Yes, <i>n</i> =24	23.6	4.9				
ACL	No, <i>n</i> =50	60.2	9.8	.95	.333	.013	.161
	Yes, <i>n</i> =24	57.8	9.7				
SCE	No, <i>n</i> =50	71.4	11.1	.12	.725	.002	.064
	Yes, <i>n</i> =24	70.5	9.1				

*Note.* LAC = Level of Academic Challenge, SFI = Student Faculty Interaction, ACL = Active and Collaborative Learning, SCE = Supportive Campus Environments

<sup>a</sup> $\eta^2$  = effect size

\* *p* < .05

\*\**p* < .01

The second research question was: When controlling for demographics (sex, race), how do the NSSE benchmarks (Level of Academic Challenge, Active Collaborative Learning, Student-Faculty Interaction, Enriching Educational Experiences, and Supportive Campus Environment) predict success or matriculation among minority and non-minority students?

As mentioned in Chapter III, some of the requested demographic data were not revealed or shared with the researcher due to very small numbers in the minority subgroup, and most programs were unwilling to divulge this information due to ethical reasons. The institution for

which results are presented provided demographic data on sex and race, but declined to provide family educational background or college GPA. The second research question therefore focused only on the control variables of sex and race.

Hierarchical Logistic Regression was used to answer the secondary research question. Logistic regression is used when the dependent variable is dichotomous. Hierarchical logistic regression is carried out in two steps. The dependent variable was matriculation (First-year/Freshman, Senior). In the first step the independent variables were sex (male, female) and minority (yes, no). In the second step the benchmarks (Level of Academic Challenge, Active Collaborative Learning, Student-Faculty Interaction, Enriching Educational Experiences, and Supportive Campus Environment) were also entered into the model as independent variables. The omnibus chi-square and the Nagelkerke  $R^2$  were examined to determine the change between Steps 1 and 2. Logistic regression predicts the probability of an outcome that is dichotomous. A dichotomous variable takes two possible values or categories (Campbell, 2016). For this study, the dependent variables (DV) consisted of the NSSE benchmarks (Level of Academic Challenge, Active Collaborative Learning, Student-Faculty Interaction, Enriching Educational Experiences, and Supportive Campus Environment). The independent variables (IVs) consisted of minority/non-minority.

The logistic regression technique MANOVA is used to determine if there is a difference between the dependent variable means for two independent samples. In this study, this was used to determine how the NSSE benchmarks (Level of Academic Challenge, Active Collaborative Learning, Student-Faculty Interaction, Enriching Educational Experience, and Supportive Campus Environment) predict success or matriculation among minority nursing students, when

controlling for demographics. As the school only provided data on the sex and race of students, these were the only control variables used in the analysis.

I controlled for demographic variables through the use of a 2-step hierarchical logistic regression. For the first step, I first determined whether demographics (sex, race) contribute significantly to the prediction of successful matriculation or persistence. I examined the Omnibus chi-square to determine whether, if taken together, the coefficients for the demographic variables were significant. A  $p$ -value for the chi-square less than .05 indicates that the model with the demographics alone is significant. In other words, significance means that the demographics do contribute to the prediction of persistence and academic achievement. A  $p$ -value greater than .05 would indicate that the demographics do not contribute to the prediction of persistence (fall to fall retention and end of year cumulative GPA 2.0) and academic achievement. For the second step, I added the NSSE benchmarks to the model and the Omnibus chi-square was again examined. The  $p$ -value for the chi-square of the second step indicates whether the change in the chi-square from Step 1 with the addition of the NSSE benchmarks is significant. A  $p$ -value less than .05 would indicate that the NSSE benchmarks do contribute significantly to the model when demographics are controlled.

The logistic regression results were non-significant. The Step 1 analysis indicated that the demographic variables sex and race were not significantly related to matriculation (chi-square=2.618,  $p$ =.270, Nagelkerke  $R^2$ =.053). As sex and race were insignificant only the benchmarks were added in Step 2, the model was significant (chi-square=22.070,  $p$ =.000, Nagelkerke  $R^2$  = .391). Chi-square was less than .05 and the Nagelkerke  $R^2$  increased from .053 to .391. This indicates that the benchmarks (*level of academic challenge, active and collaborative learning, student-faculty interaction and supportive campus environment*) as a group



significantly predict matriculation when controlling. To determine which benchmarks significantly predict matriculation the coefficients were examined. The coefficients for LAC (Level of Academic Challenge) ( $B = .058, p = .016$ ) and ACL (Active and Collaborative Learning) ( $B = .149, p = .003$ ) were both significant. The positive coefficients indicate that as the scores for these two benchmarks increase, matriculation increases (moves from first-year/freshman to senior). The coefficients for SFI (Student Faculty Interaction) ( $B = -1.03, p = .174$ ) and SCE (Supporting Campus Environments) ( $B = -.023, p = .564$ ) were not significant. This indicates that these two benchmarks do not predict matriculation (Table 9).

Table 9  
Hierarchical Regression Analysis Results,  $n = 74$

Variable	<i>B</i>	<i>SE</i>	<i>Wald</i>	<i>p</i>
Step 1				
Gender	-.451	.911	.25	.621
Minority	1.027	.697	2.17	.141
Step 2 <sup>a</sup>				
LAC	.058	.024	5.83*	.016
SFI	-1.03	.076	1.85	.174
ACL	.149	.050	8.73**	.003
SCE	-.023	.040	.33	.564

Note.  $\chi^2 = 2.618, p = .270$ , Nagelkerke  $R^2 = .053$  Step 1;  
 $\chi^2 = 22.070, p = .000$ , Nagelkerke  $R^2 = .391$  for Step 2

<sup>a</sup> LAC = Level of Academic Challenge, SFI = Student Faculty Interaction, ACL = Active and Collaborative Learning, SCE = Supportive Campus Environments

\* $p < .05$

\*\* $p < .01$

## **Answers to Research Questions**

*Research Question 1.* There were no differences between minority and non-minority baccalaureate nursing students on student engagement activities as measured by the NSSE benchmarks (Level of Academic Challenge, Active Collaborative Learning, Student-Faculty Interaction, Enriching Educational Experiences, and Supportive Campus Environment).

*Research Question 2.* When controlling for demographics (sex, race), the NSSE benchmarks Level of Academic Challenge and Active Collaborative Learning, predicted success or matriculation among minority and non-minority students, whereas Student-Faculty Interaction and Supportive Campus Environment were not found to predict matriculation. In the first hierarchical regression step, it was discovered that sex and race are not related to matriculation, therefore in Step 2 only the benchmarks were included. LAC (Level of Academic Challenge) and ACL (Active and Collaborative Learning) were not found to predict matriculation. SFI (Student Faculty Interaction) and SCE (Supportive Campus Environment) were found to predict matriculation.

### **Summary**

The objective of this chapter has been to present the results of the study, using descriptive statistics to describe the dataset and inferential statistics to answer the two research questions guiding this study. The analysis conducted in order to answer Research Question 1 revealed no difference between minority and non-minority baccalaureate nursing students on student engagement activities as measured by the NSSE benchmarks. The analysis conducted to answer Research Question 2 examined whether, when controlling for demographic variables (sex, race), the NSSE benchmarks predict success or matriculation. The results of the initial logistic regression indicated that the benchmarks (level of academic challenge, active and collaborative

learning, student-faculty interaction and supportive campus environment) as a group significantly predict matriculation. When examining the individual coefficients, Level of Academic Challenge and Active and Collaborative Learning were found to predict matriculation, but Student Faculty Interaction and Supportive Campus Environment were not found to predict matriculation. The final chapter discusses these findings and their implications, and sets out recommendations for nursing practice and for future research.

## CHAPTER V: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Over the last forty years, educational research has revealed specific conditions that are essential to encourage student persistence and academic achievement at post-secondary institutions. According to the well-known integration model, these conditions include expectations, support, assessment, feedback, and involvement. It is increasingly clear that student engagement is one of the most important conditions and has a significant impact on a student's academic performance, satisfaction with overall college experience, and ultimately, overall success. Globally, nursing researchers have acknowledged that low retention rates from Bachelor of Science in Nursing (BSN) degree programs are a worsening problem (Abele et al., 2013). One explanation for minority students not completing the nursing programs has focused on engagement. The failure to keep minority nursing students engaged results in a continued shortage of qualified and diversified nurses within our healthcare communities. This is a problem because success rates are low among this population, contributing to a shortage of qualified minority nurses and to disparities in health care for minority patients. In recent years, researchers have suggested that successful matriculation and student engagement levels are more valuable measures of the quality of an institution's nursing program than the National Council Licensure Examination (NCLEX) first-time pass rate (Murray et al., 2016). This study proposed to focus mainly on student engagement as measured by the five National Survey of Student Engagement

(NSSE) “Benchmarks of Effective Educational Practice”: *Level of Academic Challenge, Active and Collaborative Learning, Student-Faculty Interaction, Enriching Educational Experiences, and Supportive Campus Environments.*

The primary purpose of this study has therefore been to explore the relationship between student engagement patterns and activities and the matriculation of undergraduate first-year freshman and senior level minority and non-minority nursing students at one baccalaureate public nursing program located in the southeast United States.

The second purpose of this quantitative study has been to determine whether there is any change in the observed differences between minority and non-minority nursing students when controlling for selected personal factors (sex, race). Family educational background, and college GPA were not included due to the specific institutions’ policies and the IRB guidelines. As mentioned in earlier chapters, the issue of student engagement within higher education is a very complex one. When considering ways to improve the engagement of minority nursing students, researchers must identify the specific factors that may contribute to successful matriculation and academic achievement. Researchers have found that greater student involvement or student engagement with their institution is closely associated with a higher likelihood of successful matriculation and a greater chance of graduation (Gordon, et al., 2008; Pascarella, et al., 2010; Tinto, 2012).

The study was based on an ex post facto design, and used data from students’ responses to the 2014 National Survey of Student Engagement (NSSE). As mentioned in Chapter IV data from only one institution was included in the final analysis. The final achieved sample size was 89. Engagement patterns were measured using the NSSE benchmarks (Level of Academic Challenge, Active Collaborative Learning, Student-Faculty Interaction, Enriching Educational

Experiences, and Supportive Campus Environment). Logistic regression analysis was used to determine which predictor variables and interactions were required to describe the outcome, persistence or academic achievement when controlling for personal background variables (sex, race, family education background, and GPA).

This chapter reviews the ways in selected demographic factors and the expanded and redefined NSSE benchmarks have been found to predict successful matriculation among minority and non-minority nursing students at a public baccalaureate nursing program located in the Southeast United States, and any observed differences between the two groups. The chapter summarizes the study, discusses the research findings, and arrives at conclusions based on these findings. The chapter also considers the implications of the results for further practice and research.

The step 1 analysis indicated that the demographic variables sex and race were not significantly related to matriculation. In step 2, only two of the redefined NSSE benchmarks were found to be significant in predicting successful matriculation among minority and non-minority nursing students: Level of Academic Challenge, and Active and Collaborative Learning).

The study has revealed significant information on the engagement patterns of freshman and senior level nursing students. The *Level of Academic Challenge* and *Active and Collaborative Learning* NSSE benchmarks reflect the academic engagement that previous researchers found to be essential for students' persistence and completion of their programs (Bean, 1986; Tinto, 2012). The results of this study have confirmed the positive effects of academic engagement on students' educational success (Dapremont, 2014).

## Summary and Discussion of Findings

### Research Question 1

This question asked: Is there a difference between minority and non-minority baccalaureate nursing students on student engagement activities as measured by the NSSE benchmarks (Level of Academic Challenge, Active Collaborative Learning, Student-Faculty Interaction, Enriching Educational Experiences, and Supportive Campus Environment)? The dependent variables (NSSE benchmarks) consisted of Level of Academic Challenge, Active Collaborative Learning, Student-Faculty Interaction, Enriching Educational Experiences and supporting campus environments. The independent variable was minority (yes, no).

The MANOVA results were not significant; no significant difference was found between the minority and non-minority groups in their scores on the dependent variables. As discussed in earlier chapters, this finding was inconsistent with the findings of much of the research literature reviewed. Student dropout rates remain high among minority nursing students, ranging between 15% and 85% (Gardner, 2005; Harris et al., 2014). Many minority students receive inadequate preparation for the academic rigors of nursing programs (Tinto, 2012). As mentioned earlier, overall, non-minorities accounted for 73.5% of students in baccalaureate nursing programs in the United States, while minorities accounted for less than 27% (AACN, 2014). The findings of the present study also provide support for the argument that student engagement helps all students, including both minorities and non-minorities (Hall et al., 2011). The univariate analyses revealed no significant difference between the minority and non-minority groups in terms of their NSSE benchmarks scores. The educational research reviewed for this study did not reveal significant differences between the minority and non-minority groups in terms of level of engagement and success (Tinto, 2012; Kuh et al., 2010). Tinto (2012) asserted that among all students, both

minorities and non-minorities, those having a greater number of formal academic involvement with faculty, as well as a greater number of formal and informal involvement with peers, faculty and staff reported more overall satisfaction with their institutions.

As previously cited within Chapter II, among the five NSSE benchmarks, faculty mentorship and supportive learning environments appear to be particularly important, as the more successful studies reviewed here have shown. More engagement in learning activities within the classroom that students believe are meaningful and validating, leads to a greater amount of time and effort students put into their school work, which in turn increases persistence (Tinto, 2012). But my findings did not show that these two benchmarks *student-faculty interaction* and *supportive campus environment* to predict matriculation among minority and non-minority students. The limited participation of educational institutions and the resulting reliance on a sample from just one school may be the reason for the differences between the findings of this study and those of previous researchers with regard to these variables: further research based on a larger sample size from multiple institutions is needed to confirm or disprove this finding as it relates to minority and non-minority nursing students more generally.

## **Research Question 2**

This question asked: When controlling for demographics (sex and race), how do the NSSE benchmarks (Level of Academic Challenge, Active Collaborative Learning, Student-Faculty Interaction, Enriching Educational Experiences, and Supportive Campus Environment) predict success or matriculation among minority and non-minority students?

Hierarchical Logistic Regression was used to determine how the NSSE benchmarks predict success or matriculation among minority and non-minority students, when controlling for the independent variables of sex and race. The Hierarchical Logistic Regression was carried out



in two steps. The dependent variable was matriculation (first-year/freshman, senior). The first step was intended to determine whether demographic variables of sex (male, female) and race (minority/non-minority) contributed significantly to the prediction of successful matriculation. In the second step the benchmarks (Level of Academic Challenge, Active Collaborative Learning, Student-Faculty Interaction, Enriching Educational Experiences, and Supportive Campus Environment) were also entered into the model as independent variables.

The results were non-significant for demographic variables. The demographic variables sex and race were not significantly related to matriculation. This finding supports previous research which noted that there is a complex combination of factors related to persistence and matriculation that are very similar for both minority and non-minority students (Swail et al., 2003). Only the NSSE benchmarks *Level of Academic Challenge* and *Active and Collaborative Learning* were shown to be predictive of successful matriculation among both minority and non-minority students.

### **Discussion of Findings**

The findings of this study provide support for the impact on matriculation of some of the student engagement activities as measured by the NSSE benchmarks, specifically *Level of Academic Challenge* and *Active and Collaborative Learning*.

The NSSE benchmark *Level of Academic Challenge* reflects Tinto's (2012) focus on expectations. According to Tinto's model, student success depends on students' self-expectations (Tinto, 2012). In addition, faculty expectations for the students influence whether a student succeeds or fails. Low expectations lead to failure, whereas high expectations encourage success. For example, in the NSSE survey, question five asks participants to what extent their instructors have "clearly explained course goals and requirements" during the current school year. This

question addresses whether instructors' expectations of students are clear to students. The *Level of Academic Challenge benchmark* was expanded in the NSSE to include specific *engagement indicators as explained within Chapter II* (Higher Order Learning, Reflective & Integrative Learning, Learning Strategies and Quantitative Reasoning). The benchmark was expanded in order to focus specifically on distinct dimensions of academic effort as discussed within the literature review earlier, relating to students self-expectations as well as faculty expectations. The NSSE findings provide support for the argument that students' beliefs about the level of effort expected of them by their institution are directly linked with their level of effort, and specifically, with their success in college (Kuh et.al, 2009). In addition, specific items relating to writing, reading, and study time are now reported within this benchmark. The findings of this study support the argument that the NSSE benchmark *Level of Academic Challenge* can be predictive of successful matriculation and persistence among both minority and non-minority students.

The NSSE benchmark Active and Collaborative Learning reflects Tinto's fourth condition which consists of involvement, more commonly referred to as engagement. Tinto (2012) posited that, the more students engage socially and academically with their peers, faculty, and staff, the more likely it is that they will be successful. Student engagement leads to social alliances and emotional support, which, in turn, lead to greater educational success (Dapremont, 2014). *Active and Collaborative Learning* was shown to be predictive of successful matriculation among both minority and non-minority students. Tinto (2012) noted that among all students regardless of minority or non-minority status, students reporting greater relationships with faculty and staff, and formal and informal relationships with peers, staff and faculty, were found to have higher persistence and greater satisfaction with their institution. The findings relating to *Active and Collaborative Learning* were shown to be predictive of successful matriculation

among both minority and non-minority students, directly supporting Tinto's fourth condition of engagement.

The social dominance theory (SDT) (Sidanius & Pratto, 2004) potentially explains the results found here. The minority status of students, and their positions within social hierarchies, influence their likelihood of graduating from nursing school. SDT theorists attempt to examine many complex and interrelated problems within our society (e.g., prejudice, racism, intergroup conflict, and stereotyping) by describing the processes by which these problems arise: "Social dominance theory is very much a model about *process*, specifically the processes that create and recreate group based social hierarchy" (Sidanius et al., 2004, p. 849). SDT research aims to examine realistic situations in which groups of people are in either oppressed or dominant positions, rather than making assumptions or studying situations through a priori theoretical lenses. The findings of this study support the importance of examining the individual situations of students rather than making assumptions. SDT is a process-related model and the findings of this study are aligned with it because they show that student engagement on some of the benchmarks leads to persistence and successful matriculation. Social dominance theory (SDT) also addresses the issues of minority status in society and the complex factors that contribute to student matriculation and completion of higher education. The study provides support for this complexity by revealing that some of the NSSE indicators but not others were predictive of matriculation. Although SDT as a socially focused framework supports and overlaps with the discussion of matriculation and graduation, the complexities of student matriculation, graduation and engagement meant that the study also required a second, education-focused framework in order to provide a robust understanding of the phenomenon of interest.

However, some of the results do not support the findings of previous studies. In particular, Student Faculty Interaction (SFI) and Supportive Campus Environments (SCE) did not predict matriculation, in direct contrast with the findings of many previous studies. Both Student-Faculty Interaction and Supportive Campus Environments reflect the level of support an institution offers. Question 13 of the NSSE (2014) survey asks participants to rate the quality of their interactions with fellow students, academic advisors, faculty, student services staff, and other staff. Question 14 asks how much participants' institutions emphasize the provision of support to help students succeed, learning support services, and other items related to Tinto's construct of support (see Appendix A).

The NSSE benchmark *Student Faculty Interaction* benchmark was updated by incorporating an additional measure: Effective Teaching Practices. Previous researchers have noted that there is a direct relationship between effective teaching methods and desired outcomes for general measures of cognitive growth and course specific learning (Pascarella & Terenzini, 2005). The *Student Faculty Interaction* benchmark also reflects the findings of previous studies showing the importance of effective assessments that are both summative and formative, along with prompt and detailed feedback to improve students overall learning and success and persistence (Tinto, 2012; McCormick, Gonyea, & Kinzie, 2013). The *Supportive Campus Environment* benchmark reinforces Tinto's (2012) model, which posits that academic and social engagement are integral to student's success. Academic and social forms of support are also known to be very important to students during their first year of college (Kuh, 2009; Tinto, 2012).

Previous studies have shown that the more students engage academically and socially with others on campus, specifically with faculty and peers, the more likely they are to successfully matriculate (Igbo et al., 2011; Murray et al., 2016; Sutherland et al., 2007). Other studies reviewed in Chapter II found that faculty involvement, mentoring, and one-on-one coaching are also often closely associated with persistence and successful matriculation (Kuh et al., 2009; Pascarella, 1982; Tinto, 2012).

Although the findings of the current study did not provide support for these findings, this may at least in part reflect the small sample size and the low rate of institutional participation, which limited the analysis to one nursing program. This made it extremely difficult to accurately investigate their impact on persistence and successful matriculation. It is likely to be the case that the variables of Student Faculty Interaction (SFI) and Supportive Campus Environments (SCE) will vary considerably between educational institutions, reflecting school-level factors such as organizational culture, resources, faculty characteristics and facilities: this means that a research based on multiple institutions would be needed to properly investigate the impact of these factors on minority and non-minority student outcomes.

In broad terms, however, the study findings do reinforce the findings of earlier research demonstrating that higher levels of student engagement or student involvement with their institution are associated with a higher likelihood of successful matriculation and eventually graduation (Gordon et al., 2008; Pascarella et al., 2010; Tinto, 2012). This also provides support for research showing that students' academic success and engagement levels can be linked directly to the amount of time and effort that students invest in their studies, and the ways institutions create opportunities to interact with and learn from others with different backgrounds and life experiences (Kuh, et.al, 2010). The findings demonstrate that both minority and non-

minority nursing students who attended an institution with complex cognitive tasks and who were deeply engaged in their studies were more persistent and successfully matriculated within their program.

Overall, there were no significant differences between minority and non-minority baccalaureate nursing students on student engagement activities as measured by the NSSE benchmarks. This finding somewhat supports previous research showing that the complex combination of factors associated with persistence is for the most part very similar for both non-minorities and minorities (Swail et al., 2003). As mentioned in chapters III and IV, the limited and low overall institutional response rates of the NSSE may account for some of the findings, due to a small sample size. Researchers nationally and globally have reported a steady decline in survey response rates over time (National Research Council, 2013). Institutions that utilize the NSSE survey must aggressively create campaigns to encourage student participation. They must also commit to a culture of student success and student engagement, utilizing the NSSE survey as a tool to monitor and improve this over time.

### **Implications of the Research Results**

As noted above, the findings of the study may not be consistent with the results of previous studies in this area due to the small sample size and participation of just one school in the research. The sample was based on the 89 nursing students at one institution who matriculated and also participated in the spring 2014 administration of the NSSE. This consisted of 70 (78.7%) freshman and 19 (21.2%) seniors. There were 56 (62.9%) non-minority nursing students and 33 (37.1%) minority nursing students in the sample. Researchers have indicated throughout some of the studies reviewed within the literature that generally matriculation and persistence among minorities are lower than among non-minorities (Tinto, 2012; Kuh et al.,

2008). Due to such a small sample of minorities within this nursing cohort of freshman and seniors there may have been underrepresentation of the wider population of both minority and non-minority nursing students. A larger sample size may have generated different results pertinent to the NSSE benchmarks in regards to minority and non-minority nursing students.

It should be noted that some of the previous studies that compared minority and non-minority students and examined the association between levels of engagement and matriculation included sample sizes large as 927 (e.g. Hall et al., 2011). The findings of Hall et al. (2011) indicated that engagement levels were higher among freshmen minority students versus non-minority students and that the racially based differences ended by the completion of their sophomore year in college. Other researchers have conducted very large studies focused on the NSSE and predictions of student academic success, for example based on analysis of over 16,000 first-year beginner students and seniors who completed the NSSE survey over a number of years 2006-2012 (Fiorini, Liu, Shepard & Ouimet, 2014). This study compared the NSSE responses of nursing students to those of other majors and found that nursing were more academically challenged and engaged in more rigorous curricula; also that they engaged less in active and collaborative learning than other majors (Fiorini et al., 2014). Another important study within the research literature in this area noted that although nursing students are engaged in rigorous curricula, they do not perceive themselves to be engaged in interactive pedagogies or to be student - centered (Popkess & McDaniel, 2011).

Although some of the findings were inconsistent with those of previous studies, the analysis conducted for this study indicated that student engagement, as measured by the NSSE benchmarks overall, predicts matriculation for both minority and non-minority students. Although the results were significant for this sample, however, the small sample size and

inclusion of just one educational institution means mean that inferences to the wider population of minority and non-minority baccalaureate nursing students cannot be made, and more research based on a larger, more representative sample would be needed to confirm this.

Further, by examining the effects of each benchmark individually, the study provides tentative insights into the specific aspects and dimensions of student engagement that have the greatest impact, at least in the case of the present sample. Within the constraints of the study's methodology, therefore, the findings indicate that it may be important to provide supportive educational environments that support and promote the engagement of all students, in general but also in relation to the prediction of students' persistence and successful matriculation through their programs.

The study revealed that controlling for race and sex made no difference to the observed relationships, i.e. based on this sample, the impact of engagement on matriculation is consistent across all groups. In other studies similar findings were noted, in that minorities and males continue to be underrepresented within nursing programs and any significant differences between small groups are very difficult to discover (Popkess & McDaniel, 2011). The engagement levels were similar among both groups studied: based on the NSSE benchmarks there were found to be no significant differences between minorities and non-minorities in terms of the relationships between engagement and matriculation.

### **Limitations of the Study**

In the present study, sampling and access problems were encountered due to the very limited participation of schools; some agreed to participate but limited data was provided due to ethical and institutional policies and in the event only one provided adequate data for the analysis. Due to these issues this study is not generalizable to all minority or non-minority



nursing students and the sample population may not be typical of minority/non-minority nursing students from other institutions. The inclusion of only one educational institution in the study is a major limitation: although the sample size was adequate for the use of statistical analyses, and broadly reflected the national distribution of baccalaureate nursing students by minority/non-minority status and gender, it is not known to what extent the NSSE scores for students at this particular educational institution are similar to or differ from those at other educational institutions. The inclusion of NSSE data from multiple institutions would have allowed for more robust analysis of the relationships between the NSSE benchmark scores and matriculation data and may have resulted in different findings regarding the overall impact of student engagement (as measured by the NSSE benchmarks) on student outcomes, as well as the impact of specific benchmarks, and how these vary between minority and non-minority students.

Despite these shortcomings, the study is believed to make an important and useful contribution to this area of research. First, it helps demonstrate the value of the NSSE survey tool for educators, deans, faculty members and institutions of higher education. Student engagement and best educational practices have been researched and linked with positive outcomes for students using this tool (Popkess & McDaniel, 2011) and the study helps build on these. Various methods and interventions have been tested and proved effective for investigating relationships between engagement and matriculation, but little previous research has been carried out which compares minority and non-minority students with regard to these relationships. In this way, the study provides a model that can be used by other researchers to examine these relationships in other settings and with larger samples.

The study only allowed examination of the demographic variables of race and sex. Investigation of other pertinent variables such as pre-college characteristics, family educational

backgrounds and college GPA might have revealed other relationships between student engagement and matriculation, but unfortunately it did not prove possible to obtain this data from the participating institution.

Another major limitation of the study included the reduction of the scope of the study from between four and six institutions down to one. One non-participating school stated although they participated with the NSSE survey, the results were not separated among colleges, so there was no way to determine who from the nursing school participated versus those from other majors such as education or math. This institution that did not record separate data for their various majors/colleges was not included in the final analysis. This particular school also reported that they would be unable to divulge minority status of a nursing student due to extreme low numbers with participation < than 10 students who identified as minority. Altogether this school was very reluctant to take part due to concerns of possible ethical issues. Another non-participating school that had previously agreed to participate subsequently stated that, due to sanctions and written agreement and confidentiality forms, they could not share any NSSE data separated by race, sex or school program or any raw data at all. All of these limitations severely limited the potential analysis and it must be noted that the sample may be biased due to being only one institution studied.

Other types of limitations that are common to research, such as respondent bias and researcher bias, are not considered to be a problem for this study. This is because the research used secondary data already collected for a different purpose, and was also based on quantitative methods. This meant firstly that the sample of participants were not aware that their data would be used for the purpose of this study, and did not modify their answers to reflect this. And secondly that the researcher was not able to influence the ways in which the questions were

asked and that there was no opportunity for subjectivity in interpretation of the research data in ways that might bias the overall findings.

The researcher did play a role, however, in determining the specific issue to conduct research on and how to go about this in terms of the methods and variables studied. Every attempt was made to achieve high levels of objectivity by using previously validated variables and established approaches to studying student engagement and matriculation. However, a degree of bias or subjectivity in this process may have influenced the outcomes and may account for some of the differences between the findings of this research and some of the previous studies in this area.

### **Recommendations for Further Research**

There are a number of recommendations for further research arising from this study. First, it is recommended that the study be replicated but with more than one nursing program. This will help provide a more robust and more representative understanding of the relationships between student engagement and matriculation for both minority and non-minority students, and how these vary between institutions.

Second it is recommended that multivariate analysis using a wider range of variables and based on a much larger sample should be conducted, to provide greater insights into the factors influencing student engagement and matriculation for minority and non-minority students. Given the constraints of the available data and sample size, the present study was unable to investigate the socio-demographic or other variables that influence levels and forms of engagement among students, and whether differences on these variables between minorities and non-minorities can account for the under-representation of minorities in nurse education matriculation statistics. A fuller understanding of the relationships between socio-demographic

factors, engagement and matriculation is essential in order to identify the ways in which the overall matriculation rates of minority nursing students can be improved.

Finally, it is recommended that qualitative research should be conducted in the form of in-depth interviews and or focus groups with minority nursing students, in order to provide deeper insights into their engagement levels, patterns and activities and the ways in which these help or encourage students to persist and matriculate from their nursing programs. Quantitative research is useful in demonstrating associations between variables, but understanding how these affect students in practice in the real world requires the use of qualitative research methods which allow the participants to explain their experiences and views in their own words.

### **Recommendations for Nursing Education Practice**

The study was conducted to address the problem of low retention rates from Bachelor of Nursing programs, the increasing shortage of nurses, and evidence of disproportionately low success rates among minority students. The findings demonstrated an association between student engagement and matriculation for both minority and non-minority nursing students, and revealed the specific types of engagement (based on the NSSE benchmarks) that are associated with successful outcomes. There are several implications of this for Nursing Education Practice.

Nationally, using the NSSE benchmarks for prediction of academic success of students and recent research has suggested that the benchmarks can provide dependable measures that are related to important indicators of effectiveness and quality within post secondary institutions (Pike, 2013). The NSSE benchmarks appear to be appropriate measures of student engagement for the purpose of assessing institutions effectiveness. Although this study was based on a small sample, nationally NSSE response rates have been noted to average around 29% (NSSE, 2015).

Depending on institution size, as few as 25 to 75 respondents have appeared to provide reliable institutional level estimates for most institutions (NSSE, 2015).

The results of the study provide support for the argument that educational institutions should provide the types of support and facilities to promote student engagement, since this is associated with improved outcomes for minority as well as non-minority students. Second, the results reveal the need for institutions to focus on increasing *Level of Academic Challenge* and promoting *Active and Collaborative Learning* and, particularly in the context of limited resources, to ensure that these areas receive adequate attention. Some ways that institutions can improve and focus on these areas include nursing educators employing more student-centered methods of instruction that encourages active and collaborative participation of students in class discussions and out of the class activities as well (Popkess & McDaniel, 2011). Nursing educators also can employ some clinical techniques within their classrooms, such as reflection and coaching. By asking students to reflect on their emotions and perceptions that may come up in clinical experiences, the nurse educator can coach the students in developing and practicing effective skills of involvement and engagement (Benner et al., 2010). The findings of this study can be used by nursing programs and nursing faculty by implementing specific active and collaborative learning strategies as a part of the academic curriculum to help students apply what they are learning to the nearby communities in which the quality of life of the residents can be improved (Kuh et al., 2010). As discussed earlier within the literature review, a very important the research project discussed was the Documenting Effective Educational Practice (DEEP) project that focused specifically on student engagement and retention rates. This project demonstrated how DEEP institutions actually link their students to their surrounding communities through specific programs that connect students to local employers and graduates to

create opportunities for students to interact with professionals within their field and apply principles learned in the class to the real world of work (Kuh et al., 2010). Similarly, nursing educators can create more customized clinical opportunities for students to work alongside other nurses, nursing leaders and administrators and apply what is taught in lecture to their clinical experiences within their clinical settings (Benner, Sutphen, Leonard & Day, (2010).

Nursing faculty should also focus more on deep learning activities. Nursing faculty can increase higher levels of student engagement by requesting students to write papers that require utilizing information from various fields, employing e-mail to discuss course topics and discussing feedback from assignments (Kuh et.al, 2008). Nursing educators can promote skills of involvement when students are engaged with other nursing professionals, families and patients in clinical settings that can help students develop and sharpen their clinical assessment skills. Nursing educators can also create opportunities within their classes for active learning by encouraging students to discuss their gaps in knowledge with open discussion on any biases, misconceptions or assumptions (Benner, et.al, 2010).

Finally, the main limitations of this study resulted from the unwillingness of nursing schools to participate in the study or to release detailed student data. This was largely for ethical reasons and to protect confidentiality. However, it will be important for nurse education institutions to participate in this type of research in order to help generate robust research evidence of the relationships between engagement and matriculation for all students, as well as the socio-demographic factors influencing these relationships. In this way, a better understanding of the reasons for the under-representation of minority students in matriculation statistics, and how to overcome this through measures to increase student engagement, can be obtained. Student data can be anonymized and analyzed only in aggregate form to ensure confidentiality.

Without this type of research, however, the under-representation of minorities in matriculation from Bachelor of Nursing programs is likely to continue.

### **Conclusion**

This study has generated some preliminary findings as well as providing a model for research into the relationships between student engagement and matriculation among minority and non-minority students on which future researchers can build. It has confirmed that student engagement is positively associated with matriculation for both minority and non-minority groups, and identified the specific forms of engagement that have an impact. However, limitations in the sample size and available data meant that it was not possible to understand more fully the socio-demographic factors influencing levels and types of engagement among minorities and non-minorities. Overcoming these limitations in future research will be essential in order to obtain a better understanding of the under-representation of minority nursing students in matriculation statistics, and how their levels of engagement can be increased in order to improve their matriculation rates. As noted earlier, this is important not only to address the growing shortage of nurses in the U.S., but also to ensure that the under-representation of minority nurses does not lead to gaps in healthcare through a lack of trust in health services among minority communities.

## REFERENCES

- Abele, C., Penprase, B., & Ternes, R. (2013). A closer look at academic probation and attrition: What courses are predictive of nursing student success? *Nurse Education Today*, 33(2013), 258-261. doi:10.1016/j.nedt.2011.11.017
- American Association of Colleges of Nursing. (2014, January 21). Enhancing diversity in the workforce. Retrieved from [www.aacn.nche.edu](http://www.aacn.nche.edu)
- American Association of Colleges of Nursing (2015). *Annual Survey of Baccalaureate and Graduate Nursing Programs*. Retrieved from <http://www.aacn.nche.edu/research-data/annual-surveys>
- American Association of Colleges of Nursing. (2017). *2016-2017 Enrollment and Graduations in Baccalaureate and Graduate Programs in Nursing*. Washington, DC: AACN.
- Baker, B. H. (2010). Faculty ratings of retention strategies for minority nursing students. *Nursing Education Perspectives*, 31(4), 216-220. Retrieved from <http://www.nln.org/newsroom/newsletters-and-journal/nursing-education-perspectives-journal>
- Bean, J. P. (1986). Assessing and reducing attrition. *New Directions in Higher Education*, 1986(53), 47-61. doi:10.1002/he.36919865306
- Bednarz, H., Schim, S., & Doorenbos, A. (2010). Cultural diversity in nursing education: Perils, pitfalls, and pearls. *Journal of Nursing Education*, 49(5), 253-260. doi:10.3928/01484834-20100115-02
- Benner, P., Sutphen, M., Leonard, V., & Day, L. (2010). *Educating nurses: A call for radical transformation*. San Francisco, CA: Jossey-Bass.
- Bennett, M., Bormann, L., Lovan, S., & Cobb, B. (2016). Preadmission predictors of student success in a baccalaureate of science in nursing program. *Journal of Nursing Regulation*, 7(3), 11-18. doi:10.1016/S2155-8256(16)32315-8
- Bingham, M. A., & Solverson, N. W. (2016). Using enrollment data to predict retention rate. *Journal of Student Affairs Research & Practice*, 53(1), 51. doi:10.1080/19496591.2016.11110035
- Brown, J. & Marshall, B. L.(2008). A historically Black university's baccalaureate enrollment and success tactics for registered nurses. *Journal of Professional Nursing*, 24, 21-29. doi:10.1016/j.profnurs.2007.06.006



- Campbell, M. (2016). Getting to grips with Statistics: Understanding variables. *British Journal of Midwifery*, 24(10), 738-741. doi:10.12968/bjom.2016.24.10.738
- Carolan, M. C., & Kruger, G. B. (2011). Concerns among first year midwifery students: Towards addressing attrition rates. *Contemporary Nurse: A Journal For The Australian Nursing Profession*, 38(1-2), 139-147. doi:10.5172/conu.2011.38.1-2.139
- Chambers, T., & Chiang, C. (2012). Understanding undergraduate students' experience: A content analysis using NSSE open-ended comments as an example. *Quality & Quantity: International Journal Of Methodology*, 46(4), 1113-1123. doi:10.1007/s11135-011-9549-3
- Childs, G., Jones, R., Nugent, K., & Cook, P. (2004). Retention of African-American students in baccalaureate nursing programs: Are we doing enough? *Journal of Professional Nursing*, 20(2), 129-133. doi:10.1016/j.profnurs.2004.03.002
- Commission on Collegiate Nursing Education. (2009). *Standards for accreditation of baccalaureate and graduate degree nursing programs*. Retrieved from <http://www.aacn.nche.edu/accreditation/pdf/standards09.pdf>2009
- Cosgrove, T. J. (1986). The effects of participation in a mentoring-transcript program on freshmen. *Journal of College Student Personnel*, 27(2), 119-24. Retrieved from <http://www.myacpa.org/journal-college-student-development>
- Creswell, J. W. (2009). *Research design qualitative, quantitative, and mixed methods approaches*. Los Angeles, CA: Sage.
- Dapremont, J. A. (2010). Success in nursing school: Black nursing students' perception of peers, family, and faculty. *Journal of Nursing Education*, 50(5), 254-260. doi:10.3928/01484834-20110317-03
- Dapremont, J. A. (2014). Black nursing students: Strategies for academic success. *Nursing Education Perspectives*, 35(3), 157-161. doi:10.5480/11-563.1
- Davis, S. P., Davis, D. D., & Williams, D. D. (2010). Challenges and issues facing the future of nursing education: Implications for ethnic minority faculty and students. *Journal of Cultural Diversity*, 35(3), 122-126. Retrieved from <http://www.tuckerpublish.com/jcd.htm>
- Diefenbeck, C., Michalec, B., & Alexander, R. (2016). Lived Experiences of Racially and Ethnically Underrepresented Minority BSN Students: A Case study specifically exploring issues related to recruitment and retention. *Nursing Education Perspectives*, 37(1), 41-44. doi:10.5480/13-1183
- Donnell, W. M. (2015). A correlational study of a reading comprehension program and attrition rates of ESL nursing students in Texas. *Nursing Education Perspectives (National League For Nursing)*, 36(1), 16-21. doi:10.5480/13-1212
- Durkheim, E. (1961). *Suicide*. Glencoe, CA: The Free Press.

- Eaton, S. B., & Bean, J. P. (1995). An approach avoidance behavioral model of college student attrition. *Research in Higher Education*, 36(6), 617-645. doi:10.1007/BF02208248
- Educational Policy Institute. (2013). *Retaining minority students in higher education: A framework for success*. Washington, CD: Author. Retrieved from <http://www.educationalpolicy.org>
- Evans, D. B. (2013). Examining the influence of noncognitive variables on the intention of minority baccalaureate nursing students to complete their program of study. *Journal of Professional Nursing*, 29(3), 148-154. doi:10.1016/j.profnurs.2012.04.016
- Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2009). Statistical power analyses using G\*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods*, 41, 1149-1160. doi:10.3758/BRM.41.4.1149
- Fiorini, S., Liu, T., Shepard, L., & Ouimet, J. (2014, November 5) *Using NSSE to understand student success: A multi-year analysis*. Presented at the Annual Conference of the Indiana Association for Institutional Research, Indianapolis, IN.
- Foster, H., Ooms, A., & Marks-Maran, D. (2015). Nursing students' expectations and experiences of mentorship. *Nurse Education Today*, 35(1), 18-24. doi:10.1016/j.nedt.2014.04.019
- Gardner, J. (2005). Barriers influencing the success of racial and ethnic minority students in nursing programs. *Journal of Transcultural Nursing*, 16(2), 155-162. doi:10.1177/1043659604273546
- Ginder, S. A., Kelly-Reid, J. E., & Mann, F. B. (2015). 2013-14 Integrated Postsecondary Education Data System (IPEDS) methodology report. NCEES 2014-067. *National Center for Education Statistics*. Retrieved from <http://nces.ed.gov/>
- Glossop, C. (2002). Student nurse attrition: Use of an exit-interview procedure to determine students' leaving reasons. *Nurse Education Today*, 22(5), 375-386. doi:10.1054/nedt.2001.0724
- Gordon, J., Ludlum, J., & Hoey, J. J. (2008). Validating NSSE against student outcomes: Are they related? *Research In Higher Education*, 49(1), 19-39. doi:10.1007/s11162-007-9061-8
- Graham, C. L., Phillips, S. M., Newman, S. D., & Atz, T. W. (2016). Baccalaureate minority nursing students perceived barriers and facilitators to clinical education practices: An integrative review. *Nursing Education Perspectives (National League For Nursing)*, 37(3), 130-137. doi:10.1097/01.NEP.0000000000000003
- Hall, W. D., Cabrera, A. F., & Milem, J. F. (2011). A Tale of Two Groups: Differences Between Minority Students and Non-Minority Students in their Predispositions to and Engagement with Diverse Peers at a Predominantly White Institution. *Research in Higher Education*, (4), 420.

- Harris, R. C., Rosenberg, L., & O'Rourke, M. E. G. (2014). Addressing the challenges of nursing student attrition. *Journal of Nursing Education*, 53(1), 31-37. Retrieved from <http://www.healio.com/nursing/journals/jne>
- Higgins, B. (2005). Strategies for lowering attrition rates and raising nclex-rn pass rates. *Journal of Nursing Education*, 44(12) 541-547. Retrieved from <http://www.healio.com/nursing/journals/jne>
- Hinkle, D.E., Wiersma, W., & Jurs, S.G. (2003). *Applied statistics for behavioral health sciences*. Boston, MA: Houghton Mifflin.
- Humes, K. R., Jones, N. A., & Ramirez, R. R. (2014). *Overview of Race and Hispanic Origin: 2010*. Sage Publications, Inc.
- Huybrecht, S., Loeckx, W., Quaeyhaegens, Y., De Tobel, D., & Mistiaen, W. (2011). Mentoring in nursing education: Perceived characteristics of mentors and the consequences of mentorship. *Nurse Education Today*, 31(3), 274-278. doi:10.1016/j.nedt.2010.10.022
- Igbo, I. N., Straker, K. C., Landson, M. J., Symes, L., Bernard, L. F., Hughes, L. A., & Carroll, T. L. (2011). An innovative, multidisciplinary strategy to improve retention of nursing students from disadvantaged backgrounds. *Nursing Education Perspectives*, 32(6), 375-379. doi:10.5480/1536-5026-32.6.375
- Institute of Education Sciences. (2015, August 8). *Undergraduate retention and graduation rates*. Retrieved from <http://nces.ed.gov/>
- Kahu, E.R. (2013) Framing student engagement in higher education. *Studies in Higher Education*, 38(5), 758-773.
- Kuh, G. D. (2009). The national survey of student engagement: Conceptual and empirical foundations. In R. M. Gonyea & G. D. Kuh (Eds.), *New Directions for Institutional Research* (pp. 5-20). Hoboken, NJ: Wiley Periodicals. doi:10.1002/ir.283
- Kuh, G. D., Cruce, T. M., Shoup, R., Kinzie, J., & Gonyea, R. M. (2008). Unmasking the Effects of Student Engagement on First-Year College Grades and Persistence. *The Journal of Higher Education*, 79(5), 540-563.
- Kuh, G. D., Hayek, J. C., Carini, R. M., Oimet, J. A., Gonyea, R. M., & Kennedy, J. (2002). *National Survey of Student Engagement*. Bloomington, IN: Indiana University Center for Postsecondary Research.
- Kuh, G. D., Kinzie, J., & Schuh, J.H. (2010). *Student success in college*. San Francisco, CA: John Wiley & Sons.
- Kuh, G. D., Kinzie, J., Schuh, J. H., & Whitt, E. J. (2011). Fostering student success in hard times. *Change*, 43(4), 12-19. doi:10.1080/00091383.2011.585311

- Loftin, C., Newman, S. D., Gilden, G., Bond, M. L., & Dumas, B. P. (2013). Moving toward greater diversity: A review of interventions to increase diversity in nursing education. *Journal of Transcultural Nursing, 24*(4), 387. doi:10.1177/1043659613481677
- McCormick, A. C., Gonyea, R. M., & Kinzie, J. (2013). Refreshing Engagement: NSSE at 13. *Change, 45*(3), 6-15.
- Mertes, S. J. (2015). Program of study and social integration. *Community College Journal of Research and Practice, 39*(12), 1170-1181. Doi; 10.1080/10668926.2015.1021405
- Mingo, A. D. (2008). Barriers and facilitators affecting African Americans continuation into graduate programs in nursing. *The ABNF Journal, 19*(2), 51-63. Retrieved from <http://www.tuckerpub.com/abnf.htm>
- Mittman, I. S., & Sullivan, L. W. (2011). Forming state collaborations to diversify the nation's health workforce: The experience of the Sullivan Alliance to transform the health professions. *Journal of Genetic Counsel, 20*(6), 547-555. doi:10.1007/s10897-011-9402-9
- Mooring, Q. E. (2016). Recruitment, and retention programs - challenges and solutions to the international problem of poor nursing student retention: A narrative literature review. *Nurse Education Today, 40*, 204-208. doi:10.1016/j.nedt.2016.03.003
- Murray, T. A., Pole, D. C., Ciarlo, E. M., & Holmes, S. (2016). A nursing workforce diversity project: strategies for recruitment, retention, graduation, and NCLEX-RN success. *Nursing Education Perspectives, 3*, 138. doi:10.5480/14-1480
- National Academies Press (2006). *To recruit and advance: women students and faculty in science and engineering*. Retrieved from <http://www.nationalacademiespress.com>
- National Council of State Boards of Nursing. (2015). *Research brief: 2014 nurse licensee volume and NCLEX examination statistics*. Retrieved from <https://www.ncsbn.org/search.htm?q=nclex+pass+rates+in+georgia+nursing+programs>
- National Council of State Boards of Nursing and The Forum of Nursing Workforce Centers (2013). National nursing workforce study of registered nurses. *Journal of Nursing Regulation, 4*(2), S3-S65. National Institutes of Health. (2010). *Health disparities*. Washington, DC: Author.
- National League of Nursing. (2009, January). *A commitment to diversity in nursing and nursing education*. Retrieved from <http://www.nln.org/about/position-statements/nln-reflections-dialogue/read/dialogue-reflection/2009/01/02/reflection-dialogue-3---a-commitment-to-diversity-in-nursing-and-nursing-education-january-2009>
- National Research Council. (2004). Transforming the institutional climate to enhance diversity in health professions. In B. D. Smedley, A. S. Butler, & L. R. Brostow (Eds.), *In the Nation's Compelling Interest: Ensuring Diversity in the Health-Care Workforce* (pp. 127-142). Washington, DC: The National Academies Press.

- National Research Council. (2013). *Nonresponse in social science surveys: A research agenda*. Washington, DC: The National Academies Press.
- National Survey of Student Engagement (2014a). *The NSSE update: Analysis and design of ten new Engagement Indicators*. Retrieved from [http://nsse.indiana.edu/pdf/NSSE\\_EI\\_Webinar.pdf](http://nsse.indiana.edu/pdf/NSSE_EI_Webinar.pdf)
- National Survey of Student Engagement (2014b). *Reliability*. Retrieved from <http://nsse.indiana.edu/html/reliability.cfm>
- National Survey of Student Engagement. (2015). *About NSSE*. Retrieved from [http://www.nsse.iub.edu/html/survey\\_instruments.cfm](http://www.nsse.iub.edu/html/survey_instruments.cfm)
- Noone, J. (2008). The diversity imperative: Strategies to address a diverse nursing workforce. *Nursing Forum*, 43(3),133-143. doi:10.1111/j.1744-6198.2008.00105.x
- Northall, T., Ramjan, L. M., Everett, B., & Salamonson, Y. (2016). Retention and academic performance of undergraduate nursing students with advanced standing: A mixed-methods study. *Nurse Education Today*, 39, 26-31. doi:10.1016/j.nedt.2016.01.010
- Office of Management and Budget. (2003, January 1). *Standards for the classification of federal data on race and ethnicity*. Retrieved from [http://www.whitehouse.gov/ombfedreg\\_raceethnicity](http://www.whitehouse.gov/ombfedreg_raceethnicity)
- Pascarella, E. T. (1982). *Studying student attrition*. San Francisco, CA: Jossey-Bass, 1982.
- Pascarella, E. T., Seifert, T. A., & Blaich, C. (2010). How effective are the NSSE benchmarks in predicting important educational outcomes?. *Change*, 42(1), 16-22. doi:10.1080/00091380903449060
- Pascarella, E. T., & Terenzini, P. (1991). *How college affects students*. San Francisco, CA: Jossey-Bass Publishers.
- Pascarella, E. T., & Terenzini, P. T. (2005). *How college affects students: a third decade of research*. San Francisco, CA: Jossey-Bass Publishers.
- Pickering, W. F., Walford, G., & British Centre for Durkheimian, S. (2000). *Durkheim's Suicide: A century of research and debate*. London, England: Taylor & Francis Routledge.
- Pike, G. R. (2012). Assessment measures: Criteria for evaluating campus surveys. *Assessment Update: Progress, Trends, and Practices in Higher Education*, 24(1), 10-12.
- Popkess, A. M., & McDaniel, A. (2011). Are nursing students engaged in learning? A secondary analysis of data from the National Survey of Student Engagement. *Nursing Education Perspective*, 32(2), 89-94. doi:10.5480/1536-5026-32.2.89

- Price, K. K., & Baker, S. N. (2012). Measuring students' engagement on college campuses: Is the NSSE an appropriate measure of adult students' engagement?. *Journal of Continuing Higher Education*, 60(1), 20-32. doi:10.1080/07377363.2012.649127
- Quaye, S. J., & Harper, S. R. (2014). *Student engagement in higher education: Theoretical perspectives and practical approaches for diverse populations*. Hoboken: Routledge.
- Reinhardt, A. C., Keller, T., Summers, L. O., & Schultz, P. (2012). Strategies for success: Crisis management model for remediation of at-risk students. *Journal of Nursing Education*, 51(6), 305-310. doi:10.3928/01484834-20120409-03
- Rice, J., Rojjanasrirat, W., & Trachsel, P. (2013). Attrition of on-line graduate nursing students before and after program structural changes. *Journal of Professional Nursing*, 29(3), 181-186. doi:10.1016/j.profnurs.2012.05.007
- Riley, M. & Fearing, A. D. (2009). Mentoring as a teaching-learning strategy in nursing. *Medsurg Nursing*, 18(4), 228-233. Retrieved from <https://www.amsn.org/professional-development/periodicals/medsurg-nursing-journal>
- Rosenberg, L., & O'Rourke, M. E. (2011). The diversity pyramid: An organizational model to structure diversity recruitment and retention in nursing programs. *Journal of Nursing Education*, 50(10), 555-560. doi:10.3928/01484834-20110616-02
- Rosenthal, L. & Levy, S. R. (2010). Understanding women's risk for hiv infection using social dominance theory and the four bases of gendered power. *Psychology of Women Quarterly*, 34(1), 21-35. doi:10.1111/j.1471-6402.2009.01538.x
- Schneider, M. (2010). Finishing the first lap: The cost of first-year student attrition in America's four-year colleges and universities. Retrieved from [https://archive.org/stream/ERIC\\_ED512253/ERIC\\_ED512253\\_djvu.txt](https://archive.org/stream/ERIC_ED512253/ERIC_ED512253_djvu.txt)
- Schroeder, C. (2003). How are we doing at engaging students? Charles Schroeder talks to George Kuh. *About Campus*, 8(1), 9-16. Retrieved from [http://onlinelibrary.wiley.com/journal/10.1002/\(ISSN\)1536-0687](http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)1536-0687)
- Schrum, R. A. (2015). Nursing student retention in an associate degree nursing program utilizing a retention specialist. *Teaching and Learning in Nursing*, 10, 80-87. doi:10.1016/j.teln.2014.09.002
- Sidanius, J., & Pratto, F. (2004). *Social dominance*. New York, NY: Cambridge University.
- Sidanius, J., Pratto, F., van Laar, C., & Levin, S. (2004). Social dominance theory: Its agenda and method. *Political Psychology*, 25(6), 845-880. doi:10.1111/j.1467-9221.2004.00401.x
- Skloot, R. (2010). *The immortal life of Henrietta Lacks*. New York, NY: Crown Publishers.

- Spady, W. G. (1970). Dropouts from higher education: An interdisciplinary review and synthesis. *Interchange*, 1(1), 64-85. doi:10.1007/BF02214313
- Sutherland, J. A., Hamilton, M., & Goodman, N. (2007). Affirming at-risk minorities for success (ARMS): Retention, graduation, and success on the NCLEX-RN. *Journal of Nursing Education*, 46 (8), 347-353. Retrieved from <http://www.healio.com/nursing/journals/jne>
- Swail, W.S., Redd, K., & Perna, L. (2003). Retaining minority students in higher education: A framework for success. *ASHE-ERIC Higher Education Report*, 30(2). Hoboken, NJ: Wiley.
- Tab, M. (2016). Helping minority students from rural and disadvantaged backgrounds succeed in nursing: A nursing workforce diversity project. *Online Journal of Rural Nursing & Health Care*, 16(1), 59-75. doi:10.14574/ojrnhc.v16i1.362
- Terenzini, P. T. (1982). Designing attrition studies. *New directions for institutional research*, 1982(36), 55-71. doi:10.1002/ir.37019823606
- Tinto, V. (1993). *Leaving college: Rethinking the causes and cures of student attrition*. Chicago, IL: The University of Chicago Press.
- Tinto, V. (2000). Linking learning and leaving. In J. M. Braxton (Ed.), *Reworking the student departure puzzle* (pp. 81-169). Nashville, TN: Vanderbilt University Press.
- Tinto, V. (2012). *Completing college rethinking institutional action*. Chicago: The University of Chicago Press. doi:10.7208/chicago/9780226804545.001.0001
- Tracey, T. J., & Sedlacek, W. E. (1985). The relationship of noncognitive variables to academic success: A longitudinal comparison by race. *Journal of College Student Personnel*, 26, 405-410. Retrieved from <http://www.myacpa.org/journal-college-student-development>
- Urwin, S., Stanley, R., Jones, M., Gallagher, A., Wainwright, P., & Perkins, A. (2010). Understanding student nurse attrition: Learning from literature. *Nurse Education Today*, 30(2), 202-207. doi:10.1016/j.nedt.2009.07.014
- U.S. Census Bureau. (2016, December 30). *Race, about*. Retrieved from <http://www.census.gov/topics/population/race/about.html>
- U.S. Department of Health and Human Services. (2010, December 29). *National healthcare disparities report*. Retrieved from [www.healthypeople.gov/2020/about/disparitiesAbout.aspx](http://www.healthypeople.gov/2020/about/disparitiesAbout.aspx)
- U.S. News and World Reports (2015, January 29). *Colleges in Georgia*. Retrieved from <http://colleges.usnews.rankingsandreviews.com/best-colleges/ga>
- U.S. News & World Reports, Education Rankings (2015, August 11). *College rankings list*. Retrieved from <http://www.educationrankingsandadvice@usnews&worldreports.lp>

- Veal, J. L., Bull, M. J., & Miller, J. F. (2012). A framework of academic persistence and success for ethnically diverse graduate nursing students. *Nursing Education Perspectives*, 33(5), 322-327. doi:10.5480/1536-5026-33.5.322
- White, B. J. & Fulton, J. S. (2015). Common experiences of African American nursing students: An integrative review. *Nursing Education Perspectives*, 36(3), 167-175. doi:10.5480/14-1456
- Wilson, V. W., Andrews, M., & Leners, D. W. (2006). Mentoring as a strategy for retaining racial and ethnically diverse students in nursing programs. *Journal of Multicultural Nursing & Health*, 12(3), 17-21. Retrieved from <http://tcn.sagepub.com/>
- Wilson, A. H., Sanner, S., & McAllister, L. E. (2010). An evaluation study of a mentoring program to increase the diversity of the nursing workforce. *Journal of Cultural Diversity*, 17(4), 144-150. Retrieved from <http://www.tuckerpub.com/jcd.htm>
- World Health Organization (2013, November 13) Global health workforce shortage to reach 12.9 million in coming decades. Retrieved from <http://www.who.int/mediacentre/news/releases/2013/health-workforce-shortage/en/>



APPENDIX A:  
THE NATIONAL SURVEY OF NSSE INSTRUMENT 2014

(Complete sample of the National Survey of NSSE Instrument 2014  
[nsse.iub.edu/html/survey\\_instruments.cfm](http://nsse.iub.edu/html/survey_instruments.cfm))



1.

**During the current school year, about how often have you done the following?**

*Response options: Very often, Often, Sometimes, Never*

- a. Asked questions or contributed to course discussions in other ways
- b. Prepared two or more drafts of a paper or assignment before turning it in
- c. Come to class without completing readings or assignments
- d. Attended an art exhibit, play, or other arts performance (dance, music, etc.)
- e. Asked another student to help you understand course material
- f. Explained course material to one or more students
- g. Prepared for exams by discussing or working through course material with other students
- h. Worked with other students on course projects or assignments
- i. Gave a course presentation

**2.**

**During the current school year, about how often have you done the following?**

*Response options: Very often, Often, Sometimes, Never*

- a.  
Combined ideas from different courses when completing assignments
- b.  
Connected your learning to societal problems or issues
- c.  
Included diverse perspectives (political, religious, racial/ethnic, gender, etc.) in course discussions or assignments
- d.  
Examined the strengths and weaknesses of your own views on a topic or issue
- e.  
Tried to better understand someone else's views by imagining how an issue looks from his or her perspective
- f.  
Learned something that changed the way you understand an issue or concept
- g.  
Connected ideas from your courses to your prior experiences and knowledge

**3.**

**During the current school year, about how often have you done the following?**

*Response options: Very often, Often, Sometimes, Never*

- a.  
Talked about career plans with a faculty member
- b.  
Worked with a faculty member on activities other than coursework (committees, student groups, etc.)
- c.  
Discussed course topics, ideas, or concepts with a faculty member outside of class
- d.  
Discussed your academic performance with a faculty member

**4.**

**During the current school year, how much has your coursework emphasized the following?**

*Response options: Very much, Quite a bit, Some, Very little*

- a.  
Memorizing course material
- b.  
Applying facts, theories, or methods to practical problems or new situations
- c.  
Analyzing an idea, experience, or line of reasoning in depth by examining its parts
- d.  
Evaluating a point of view, decision, or information source
- e.  
Forming a new idea or understanding from various pieces of information

5.

**During the current school year, to what extent have your instructors done the following?**

*Response options: Very much, Quite a bit, Some, Very little*

- a.  
Clearly explained course goals and requirements
- b.  
Taught course sessions in an organized way
- c.  
Used examples or illustrations to explain difficult points
- d.  
Provided feedback on a draft or work in progress
- e.  
Provided prompt and detailed feedback on tests or completed assignments

6.

**During the current school year, about how often have you done the following?**

*Response options: Very often, Often, Sometimes, Never*

- a.  
Reached conclusions based on your own analysis of numerical information (numbers, graphs, statistics, etc.)
- b.  
Used numerical information to examine a real-world problem or issue (unemployment, climate change, public health, etc.)
- c.  
Evaluated what others have concluded from numerical information

7.

**During the current school year, about how many papers, reports, or other writing tasks of the following lengths have you been assigned? (Include those not yet completed.)**

*Response options: None, 1-2, 3-5, 6-10, 11-15, 16-20, More than 20 papers*

- a.  
Up to 5 pages
- b.  
Between 6 and 10 pages
- c.  
11 pages or more

8.

**During the current school year, about how often have you had discussions with people from the following groups?**

*Response options: Very often, Often, Sometimes, Never*

- a.  
People of a race or ethnicity other than your own
- b.  
People from an economic background other than your own
- c.  
People with religious beliefs other than your own
- d.  
People with political views other than your own

9.

**During the current school year, about how often have you done the following?**

*Response options: Very often, Often, Sometimes, Never*

- a.  
Identified key information from reading assignments
- b.  
Reviewed your notes after class
- c.  
Summarized what you learned in class or from course materials

10.

**During the current school year, to what extent have your courses challenged you to do your best work?**

*Response options: 1=Not at all to 7=Very much*

11.

**Which of the following have you done or do you plan to do before you graduate?**

*Response options: Done or in progress, Plan to do, Do not plan to do, Have not decided*

- a.  
Participate in an internship, co-op, field experience, student teaching, or clinical placement
- b.  
Hold a formal leadership role in a student organization or group
- c.  
Participate in a learning community or some other formal program where groups of students take two or more classes together
- d.  
Participate in a study abroad program
- e.  
Work with a faculty member on a research project
- f.  
Complete a culminating senior experience (capstone course, senior project or thesis, comprehensive exam, portfolio, etc.)

12.

**About how many of your courses at this institution have included a community-based project (service-learning)?**

*Response options: All, Most, Some, None*

13.

**Indicate the quality of your interactions with the following people at your institution.**

*Response options: 1=Poor to 7=Excellent, Not Applicable*

- a.  
Students
- b.  
Academic advisors
- c.  
Faculty
- d.  
Student services staff (career services, student activities, housing, etc.)
- e.  
Other administrative staff and offices (registrar, financial aid, etc.)

14.

**How much does your institution emphasize the following?**

*Response options: Very much, Quite a bit, Some, Very little*

- a. Spending significant amounts of time studying and on academic work
- b. Providing support to help students succeed academically
- c. Using learning support services (tutoring services, writing center, etc.)
- d. Encouraging contact among students from different backgrounds (social, racial/ethnic, religious, etc.)
- e. Providing opportunities to be involved socially
- f. Providing support for your overall well-being (recreation, health care, counseling, etc.)
- g. Helping you manage your non-academic responsibilities (work, family, etc.)
- h. Attending campus activities and events (performing arts, athletic events, etc.)
- i. Attending events that address important social, economic, or political issues

15.

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

*Response options: 0, 1-5, 6-10, 11-15, 16-20, 21-25, 26-30, More than 30 (Hours per week)*

- a. Preparing for class (studying, reading, writing, doing homework or lab work, analyzing data, rehearsing, and other academic activities)
- b. Participating in co-curricular activities (organizations, campus publications, student government, fraternity or sorority, intercollegiate or intramural sports, etc.)
- c. Working for pay **on campus**
- d. Working for pay **off campus**
- e. Doing community service or volunteer work
- f. Relaxing and socializing (time with friends, video games, TV or videos, keeping up with friends online, etc.)
- g. Providing care for dependents (children, parents, etc.)
- h. Commuting to campus (driving, walking, etc.)

16.

**Of the time you spend preparing for class in a typical 7-day week, about how much is on *assigned reading*?**

*Response options: Very little, Some, About half, Most, Almost all*

17.

**How much has your experience at this institution contributed to your knowledge, skills, and personal development in the following areas?**

*Response options: Very much, Quite a bit, Some, Very little*

a.

Writing clearly and effectively

b.

Speaking clearly and effectively

c.

Thinking critically and analytically

d.

Analyzing numerical and statistical information

e.

Acquiring job- or work-related knowledge and skills

f.

Working effectively with others

g.

Developing or clarifying a personal code of values and ethics

h.

Understanding people of other backgrounds (economic, racial/ethnic, political, religious, nationality, etc.)

i.

Solving complex real-world problems

j.

Being an informed and active citizen

18.

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

*Response options: Excellent, Good, Fair, Poor*

19.

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

*Response options: Definitely yes, Probably yes, Probably no, Definitely no*

20a.

**How many majors do you plan to complete? (Do not count minors.)**

*Response options: One, More than one*

20b.

[If answered "One"] **Please enter your major or expected major:** [Text box]

20c.

[If answered "More than one"] **Please enter up to two majors or expected majors (do not enter minors):** [Text box]

21.

**What is your class level?**

*Response options: Freshman/first-year, Sophomore, Junior, Senior, Unclassified*

22.

**Thinking about this current academic term, are you a full-time student?**

*Response options: Yes, No*

23a.

**How many courses are you taking for credit this current academic term?**

*Response options: 0, 1, 2, 3, 4, 5, 6, 7 or more*

23b.

**Of these, how many are *entirely online*?**

*Response options: 0, 1, 2, 3, 4, 5, 6, 7 or more*

24.

**What have most of your grades been up to now at this institution?**

*Response options: A, A-, B+, B, B-, C+, C, C- or lower*

25.

**Did you begin college at this institution or elsewhere?**

*Response options: Started here, Started elsewhere*

26.

**Since graduating from high school, which of the following types of schools have you attended *other than* the one you are now attending? (Select all that apply.)**

*Response options: Vocational or technical school, Community or junior college, 4-year college or university other than this one, None, Other*

27.

**What is the highest level of education you ever expect to complete?**

*Response options: Some college but less than a bachelor's degree, Bachelor's degree (B.A., B.S., etc.), Master's degree (M.A., M.S., etc.), Doctoral or professional degree (Ph.D., J.D., M.D., etc.)*

28.

**What is the highest level of education completed by either of your parents (or those who raised you)?**

*Response options: Did not finish high school, High school diploma or G.E.D., Attended college but did not complete degree, Associate's degree (A.A., A.S., etc.), Bachelor's degree (B.A., B.S., etc.), Master's degree (M.A., M.S., etc.), Doctoral or professional degree (Ph.D., J.D., M.D., etc.)*

29.

**What is your gender identity?**

*Response options: Man; Woman; Another gender identity, please specify: ; I prefer not to respond*

30.

**Enter your year of birth (e.g., 1994):**

31.

**Are you an international student or foreign national?**

*Response options: Yes, No*

32.

**What is your racial or ethnic identification? (Select all that apply.)**

*Response options: American Indian or Alaska Native, Asian, Black or African American, Hispanic or Latino, Native Hawaiian or Other Pacific Islander, White, Other, I prefer not to respond*

33.

**Are you a member of a social fraternity or sorority?**

*Response options: Yes, No*

34.

**Which of the following best describes where you are living while attending college?**

*Response options: Dormitory or other campus housing (not fraternity or sorority house), Fraternity or sorority house, Residence (house, apartment, etc.) **within walking distance** to the institution, Residence (house, apartment, etc.) **farther than walking distance** to the institution, None of the above*

35.

**Are you a student-athlete on a team sponsored by your institution's athletics department?**

*Response options: Yes, No*

36.

**Are you a current or former member of the U.S. Armed Forces, Reserves, or National Guard?**

*Response options: Yes, No*

37a.

**Have you been diagnosed with any disability or impairment?**

*Response options: Yes, No, I prefer not to respond*

37b.

**[If answered "yes"] Which of the following has been diagnosed? (Select all that apply.)**

*Response options: A sensory impairment (vision or hearing), A mobility impairment, A learning disability (e.g., ADHD, dyslexia), A mental health disorder, A disability or impairment not listed above*

38.

**Which of the following best describes your sexual orientation? [Question administered per institution request.]**

*Response options: Heterosexual; Gay; Lesbian; Bisexual; Another sexual orientation, please specify; Questioning or unsure; I prefer not to respond*



APPENDIX B: IRB CERTIFICATION



April 17, 2017

Danielle Rice, RN-BC, BSN  
Department of ELPTS  
College of Education  
The University of Alabama  
Box 870231

Re: IRB # EX-17-CM-028 "An Exploratory Study Examining the Relationship between Student Engagement and Success between Minority and Non-Minority Nursing Students at Four Baccalaureate Nursing Schools in the Southeast"

Dear Ms. Rice:

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

Your application will expire on April 16, 2018. If your research will continue beyond this date, complete the relevant portions of Continuing Review and Closure Form. If you wish to modify the application, complete the Modification of an Approved Protocol Form. When the study closes, complete the appropriate portions of FORM: Continuing Review and Closure.

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

Good luck with your research.

Sincerely,



558 Rose Administration Building | Box 870127 | Tuscaloosa, AL 35487-0127  
205-348-8461 | Fax 205-348-7189 | Toll Free 1-877-820-3066