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Utilizing the NSSE to Examine Behavior and Characteristic Differences between First-Year Students Who Persisted with First-Year Students Who Did Not Persist

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Utilizing the NSSE to Examine Behavior and Characteristic Differences between
First-Year Students Who Persisted with First-Year Students Who Did Not Persist

A dissertation submitted in partial fulfillment
of the requirements for the degree of
Doctor of Education in Higher Education

by

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Abstract

This study examined the differences between first-year students who persisted with first-year students who did not persist to the second year at a mid-size, doctorate-granting, public, research university in the mid-south. Specifically, the study utilized the National Survey of Student Engagement (NSSE) to compare the level of student-faculty interaction, experiences with the campus environment, and engagement in collaborative learning. Additionally, the study examined whether the differences in the three student engagement behaviors varied by gender, race/ethnicity, and first-generation college student status. Three theoretical frameworks were used as the foundation for the study including Tinto's model of institutional action, Astin's theory of involvement, and Kuh's construct of student engagement. The final sample included 1,402 degree-seeking first-year students who completed the survey in the spring of 2016. Results were analyzed using descriptive statistics and independent samples *t*-Tests. With the overall sample, the analysis revealed that persisters had significantly higher mean scores with engagement in collaborative learning than non-persisters. Also, female non-persisters were found to have significantly higher levels of student-faculty interaction than female persisters. Furthermore, white student persisters reported significantly better experiences with the campus environment than white student non-persisters. Likewise, the analysis revealed that white student persisters were more engaged in collaborative learning than white student non-persisters. These results provide a number of opportunities for institutions exploring initiatives that may influence their levels of student engagement and retention rates. Specifically, the NSSE can be a beneficial tool with helping institutions utilize their resources to identify policies, programs, and practices that can have a positive influence on student persistence.

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Dedication

I dedicate this manuscript to my parents, Harold and Viv Stephens. Mom, your passion for life and strength to overcome any obstacle helped me work through many roadblocks throughout this process. Dad, your wisdom and levelheaded thinking provided me a vision to find the right path to complete the journey. Even though you no longer have a physical presence here on earth, you both continue to inspire me in all that I seek to accomplish in life.

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Chapter I

INTRODUCTION

Context of the Problem

In today's society, a college degree has replaced the high school diploma as the pillar for economic viability (DeBerard, Spielmans, & Julka, 2004; Kuh, Cruce, Shoup, Kinzie, & Gonyea, 2008; Pike & Kuh, 2005a). A college degree also helps individuals manage an ever increasingly complex culture in the twenty-first century (Cabrera, Burkum, La Nasa, & Bibo, 2012; Carey, 2004; Kuh et al., 2008; Kuh, Kinzie, Buckley, Bridges, & Hayek, 2007; Morisano, Hirsh, Peterson, Pihl, & Shore, 2010; Pennington, 2004; Pike & Kuh, 2005a). Specifically, there are numerous long-term benefits from earning a bachelor's degree. These include economic, cognitive, as well as social advantages. For example, college graduates will earn, on average, 70% more than their high school graduate counterparts (Carey, 2004; Morisano et al., 2010; Pennington, 2004). Generally, college graduates earn one million dollars more than high school graduates over the course of their careers (DeBerard et al., 2004; Hagedorn, 2012; Kuh et al., 2007; Pascarella & Terenzini, 2005). College graduates also tend to have a longer life expectancy, experience fewer health problems, drink less alcohol, smoke less, and maintain healthier diets (Pascarella & Terenzini, 2005; Renn & Reason, 2013). In contrast, individuals without a college degree will more likely be exposed to violence, addiction, poverty, illness, incarceration, and other forms of abuse (Hagedorn, 2012; Carnevale & Desrochers, 2003; Swail, 2004).

While the evidence supports the numerous benefits of completing a college degree, little progress has been made in improving retention and graduation rates. According to Carey (2004), graduation rates in the United States have remained fairly stagnant over a twenty-year period

(Morrison & Silverman, 2012). Carey (2004) reported that students who enrolled in post-secondary education in 1992 had an eight-year graduation rate of 67%, as compared with the classes of 1972 and 1982 which had similar graduation rates of 66%. Further, the National Center for Education Statistics (2015) reported first-time, full-time undergraduate students who enrolled in a public 4-year degree-granting institution in 2012, re-enrolled in the fall 2013 at an average rate of 80%. The 6-year graduation rate for first-time, full-time undergraduate students who began their path toward a bachelor's degree at a public 4-year degree granting institution in the fall 2007 was 58%. Graduation rates at public institutions were higher for females than for males (60% vs. 55%) (NCES, 2015). Additionally, the 6-year graduation rate for historically under-represented students is significantly lower (Carey, 2004; Kuh et al., 2008). According to Kuh et al. (2008), African American students and Latinos have a 6-year graduation rate of approximately 46%. Carnevale and Desrochers (2003) reported that the national economy can no longer afford these low graduation rates. It is predicted that by 2020 the United States will experience a 14 million shortfall of college-educated working adults (Carnevale & Desrochers, 2003; Kuh et al., 2007; Pennington, 2004).

Many institutions continue to struggle with accomplishing their retention goals (Billson & Terry, 1982; Choy, 2001; Gofen, 2009; Marsh, 2014; Tinto, 2006). According to Tinto (2006), the most common research area in higher education is on college student retention (Demetriou & Schmitz-Sciborski, 2011). The research literature includes a wealth of articles, books and edited volumes, a journal, and a variety of conferences that are dedicated specifically to student retention. Numerous theories have been presented to help explain the complexities involved in student departure as well as persistence. Along with the extensive research, an abundance of companies and consulting firms have appeared on the higher education landscape.

Each of them proclaim that they have the specific tools that will help institutions improve their retention and graduation rates. Additionally, Tinto (2006) claimed that a number of institutions have made significant improvements in their graduation rates. However, for many campuses few gains have been made in improving student retention, as well as graduation rates. Thus, regardless of the number of years that retention has been investigated, there is still much work to be done to enhance student engagement and improve learning which ultimately reaps the outcomes of increased student retention and graduation rates (Tinto, 2006, 2012).

Statement of the Problem

More recently, Tinto (2012) recommended that research on student retention should transition from focusing on student departure models to a model of institutional action. Specifically, there is little an institution can do regarding student attributes or external events. Student characteristics such as personality, drive, or motivation, as well as external forces such as family, work, and other matters may influence whether a student will persist or not. Tinto (2012) remarked that blaming the student was much easier than the institution accepting responsibility for student success. Regardless, there is little a campus can do to influence these student-centered factors. However, institutions can control the settings or environments in which they choose to place their students.

According to Tinto (2012), there are at least four conditions that a campus can control that will positively influence the likelihood of student success. The first condition is related to the expectations an institution places on a student. Research supports the concept that students are much more successful when expectations are clear and consistent for what is required (Chickering & Reisser, 1993; Tinto, 2012). Furthermore, institutions that maintain high expectations will likely have students meet those standards. Support is the second condition that

encourages student success (Tinto, 2012). The evidence identifies three types of support that encourage student success (a) academic, (b) social, and (c) financial. The availability of tutoring, study groups, as well as supplemental instruction can be an important condition that will influence the persistence of students. Tinto (2012) noted that the most important condition for support is in the classroom of an institution "...for it is success in those places of learning that form the building blocks upon which student success in college is built" (p. 256). Social support can include counseling, mentoring, and ethnic student centers. These types of support centers can provide a safe zone, especially for students who feel in the minority. Assessment and feedback is the third condition for student success (Tinto, 2012). Students are more likely to succeed when they have frequent and quality feedback. Finally, the fourth condition for student success is involvement, or what is now referred to as engagement (Astin, 1985, 1993; Tinto, 1993, 2012). The more a student is academically and socially engaged, the more likely they are to persist and ultimately succeed in college (Kuh et al, 2006; Tinto, 2012).

The construct of student engagement has been consistently supported throughout the retention literature (Kuh et al., 2006; Kuh et al., 2008; Lau, 2003; Pascarella & Terenzini, 2005; Pike & Kuh, 2005a; Pike, Kuh, & Gonyea, 2003; Tinto, 2006, 2012). Specifically, student engagement can be defined as "...both the time and energy students invest in educationally purposeful activities and the effort institutions devote to using effective educational practices" (Kuh et al., 2008, p. 542). In a study by Kuh et al. (2008), student engagement in educationally purposeful activities was found to have a positive statistically significant relationship with first-year student grades, as well as persistence to the second year of college. Institutional practices such as first-year seminars, service-learning courses, and learning communities played a noteworthy role with increased grades, as well as persistence to the second year at the same

institution, even though the researchers controlled for a number of pre-college characteristics. Additionally, Kuh et al. (2008) found that the benefits of the participation had a greater effect for low ability students and students of color when compared with high ability and white students.

Two specific areas of inquiry have recently evolved in the study of retention and student engagement (Kuh et al., 2008). The first area of research is related to the link between student engagement in educationally purposeful activities and desired outcomes such as grades and persistence (Astin, 1985; Cabrera et al., 2012; Kuh et al., 2008). Student engagement embodies two specific characteristics (Kuh, Kinzie, Buckley, Bridges, and Hayek, 2006). Most notably, student engagement is representative of the amount of time and energy a student places into their studies and other educationally purposeful activities (Astin, 1985; Kuh et al., 2006; Kuh et al., 2008). The second characteristic of student engagement relates to how the institution utilizes its resources and organizes its curriculum, including extracurricular activities and support services that helps entice students into participating in activities that facilitate the desired outcomes of improved persistence, student satisfaction, learning, and increased graduation rates (Astin, 1985; Kuh et al., 2006).

The second area of investigation has focused on the causes and consequences of student success and how these factors interact with gender, race/ethnicity, and first-generation college student status. According to Reason (2003), women became the majority in higher education in 1980 and enrollment continues to increase. In 2003-2004, women represented 58% of students who enrolled in postsecondary education (Nora & Crisp, 2012). Reason (2003) also reported that approximately 25% of the undergraduate population in 1994 was made up of students of color. Race and ethnicity, as well as family income, play a significant role in retention studies because of the marked differences between historically underserved students' and white

students' undergraduate experiences at Predominantly White Institutions (Kuh et al., 2008; Reason, 2003). First-generation students also graduate at a much lower rate than second-generation students. Pike and Kuh (2005a) reported that first-generation students have a three-year persistence rate of 73%, while second-generation students have a three-year persistence rate of 88%.

According to Tinto (2012), researchers have learned a significant amount of why students leave the institution. However, much more work can still be done to better understand what the institution can do to help students stay engaged and ultimately succeed. Thus, it would be meaningful to examine the behavioral differences of first-year students to determine how best a mid-size, doctorate-granting, public, research university could utilize their resources to enhance policies, programs, and practices that would have a positive influence on student success and persistence.

Purpose of the Study

The purpose of conducting this study was to examine the differences with student-faculty interaction, experiences with the campus environment, and engagement in collaborative learning, as measured by the National Survey of Student Engagement (NSSE), between first-year students who persisted and first-year students who did not persist to the second year at a mid-size, doctorate-granting, public, research university in the mid-south. The study also examined whether or not the differences in the three student engagement behaviors between persisters and non-persisters varied by gender, race/ethnicity, and first-generation college student status. If the differences between the three engagement behaviors and student persistence are determined to be statistically significant, the institution may better utilize its resources to help entice students into behaviors that will support and encourage their success.

Research Questions

The following research questions were utilized in this investigation:

1. What differences existed in the level of student-faculty interaction between first-year students who persisted and first-year students who did not persist to their second year?
 - a. What gender differences existed in the level of student-faculty interaction between first-year students who persisted and first-year students who did not persist?
 - b. What race/ethnicity differences existed in the level of student-faculty interaction between first-year students who persisted and first-year students who did not persist?
 - c. What differences existed in the level of student-faculty interaction between first-generation students who persisted and first-generation students who did not persist?
2. What differences existed in experiences with the campus environment between first-year students who persisted and first-year students who did not persist to the second year?
 - a. What gender differences existed in experiences with the campus environment between first-year students who persisted and first-year students who did not persist?
 - b. What race/ethnicity differences existed in experiences with the campus environment between first-year students who persisted and first-year students who did not persist?
 - c. What differences existed in experiences with the campus environment between first-generation students who persisted and first-generation students who did not persist?
3. What differences existed with engagement in collaborative learning between first-year students who persisted and first-year students who did not persist to the second year?
 - a. What gender differences existed with engagement in collaborative learning between first-year students who persisted and first-year students who did not persist?
 - b. What race/ethnicity differences existed with engagement in collaborative learning

- between first-year students who persisted and first-year students who did not persist?
- c. What differences existed with engagement in collaborative learning between first-generation students who persisted and first-generation students who did not persist?

Definitions

There are a number of unique terms and phrases commonly utilized throughout the research literature in the study of higher education, specifically in the areas of retention and student engagement. This type of language may be unfamiliar to individuals outside of the higher education environment. Therefore, a number of terms included in this particular study are defined below.

Campus environment: Measured by the students' perceptions of how much an institution provides a supportive environment where it offers and encourages services and activities that promote learning and development (NSSE, 2016c).

Collaborative learning: Measured by how much a student works on group projects, asks others for assistance, or explains information to other students, as well as working with other students in preparing for examinations (NSSE, 2016c).

Educationally purposeful activities: Recognized academic and social activities that tend to lead to high levels of student engagement. The most common educational activities include student-faculty interaction, cooperation among students, active learning, prompt feedback, time on task, high expectations, and respect for diverse talents and methods of learning (Chickering & Gamson, 1999; Kuh, 2002).

Engagement Indicators: Constructs designed to provide distinct information about a specific feature of student engagement. The National Survey of Student Engagement (NSSE,

2016) identifies 10 indicators grouped into four themes that help institutions compare student behaviors and characteristics.

First-generation college student: A student whose family had no parent or guardian who has earned a baccalaureate degree (Choy, 2001; Pike & Kuh, 2005a).

Involvement: The amount of physical and psychological energy that students dedicate to their academics (Astin, 1984).

Non-persisters: A student who leaves college before graduating and never returns to complete a degree (Hagedorn, 2012).

Persisters: A student who enrolls in college and remains enrolled until they graduate (Hagedorn, 2012).

Second-generation college student: Students who had one parent or guardian who successfully earned at least one baccalaureate degree (Pike & Kuh, 2005a).

Student engagement: The time and energy students invest in educationally purposeful activities and the effort institutions dedicate to utilizing effective educational practices (Kuh et al., 2008).

Student-faculty interaction: This affiliation has a positive relationship with a student's cognitive growth, development, and persistence. Because a faculty member demonstrates intellectual work, as well as their promotion of knowledge and skills, they assist students in making connections between their studies and their future plans (NSSE, 2016c).

Student retention: Remaining in school until earning a college degree (Hagedorn, 2012).

Students of color: Refers to students who are American Indian or Alaska Native, Asian, Black or African American, Hispanic or Latino, Native Hawaiian/Other Pacific Islander, two or more races/ethnicities, or other (Li & Carroll, 2007; NSSE 2016c).

Delimitations and Limitations

Many doctoral studies are restricted due to time limitations and minimal resources. As a result, these restraints can influence the reliability and generalizability of a study. This study examined first-year student behaviors and characteristics at a single, mid-size, doctorate-granting, public, research university. Institutional studies provide additional understanding to the areas of student engagement and retention. However, because each campus environment has a culture that is somewhat unique to each institution, the generalizability of the study may be limited to similar type and size institutions.

The NSSE examines 10 engagement indicators that help institutions measure the level of engagement for their students. Due to the time restrictions, this study was limited to examining only three of the 10 engagement indicators. Thus, the recommendations for policies, programs, and practices are limited to the three engagement indicators reviewed.

Also, numerous studies throughout the retention and student engagement literature address the influence that pre-college experiences may have on student success. These factors may include academic preparation, educational aspirations, socioeconomic status, motivation to learn, as well as the college choice process (Tinto, 2012). Limiting this study to only examine gender, race/ethnicity, and first-generation college student status may place restrictions on any assumptions made regarding retention and student success.

Significance of the Study

This study made several contributions to the retention and student engagement literature. The study was designed to provide additional support for the NSSE to be utilized as a beneficial instrument in helping institutions effectively use their resources to identify policies, programs, and practices that may result in a positive influence on student persistence. If specific student

behaviors, activities, and experiences can have a positive influence on student retention, then it is meaningful to be able to advance the research on what behavioral differences exist between students who persist and students who do not persist to the second year.

Secondly, it was beneficial to examine how observed differences in student engagement between persisters and non-persisters varied by the characteristics of gender, race/ethnicity, and first-generation college student status. As enrollment increases for each of these student populations, this study provided a better understanding of how the behaviors, activities, and experiences of these student groups influence student success and persistence. Institutions may utilize this information to identify appropriate support and programs that would help entice these student populations into behaviors that have a positive influence on student engagement and persistence.

Finally, this particular study was beneficial to the individual research site. Over the past 12 years, the campus has invested in the reorganization of summer orientation, the centralization of an academic support center, and software that can track advising notes. The institution also piloted an early alert system, expanded first-year seminars, as well as created the new office of retention and graduation. Significant resources have been devoted to improve student retention, as well as increase graduation rates. Yet, the first-year retention rate has slightly decreased during this same period. Progress has been made with graduation rates. However, the campus did not reach the goal it had established for graduation rates. Thus, much more work needs to be done to help this institution improve its retention and graduation rates. Therefore, this analysis may inform the institution which policies, programs, and practices have a positive influence on student engagement and retention. Furthermore, this contribution to the literature may influence

other institutions to utilize the NSSE as a tool that can help campuses more effectively apply their resources where they can have a positive outcome on student engagement and retention.

Theoretical/Conceptual Framework of the Study

Three familiar theories and/or models related to retention and student engagement provided the foundation for this study. Tinto's theory of student departure was utilized as the first model for this study. It has served as the theoretical framework for a number of studies related to college student retention (Morrison & Silverman, 2012; Pascarella & Terenzini, 2005; Renn & Reason, 2013). Tinto based his theory on the social anthropologist, Arnold Van Gennep, who researched the practice of becoming a member in a tribal society, and on Emile Durkheim's sociological theory that people commit suicide because they withdraw from society or fail to integrate into the social networks of their communities (Morrison & Silverman, 2012; Tinto, 1993). Tinto (1987, 1993) initially proposed that students needed to work through three stages in order for them to integrate into the campus community. The first stage was the ability for the student to separate from communities of the past (Morrison & Silverman, 2012). The next stage was for the student to be able to transition smoothly between the communities. The final stage was the ability to incorporate into the communities of the campus. According to Tinto (1987, 1993), persistence was based mostly on the student's ability to integrate into the social and academic systems within the college. A student must be willing to invest time, effort, and a number of resources to fulfill the academic and social demands of the university experience (Tinto, 1987, 1993).

From Tinto's initial research, student retention had more to do with the student's inability, his or her lack of motivation, and the incapacity to appreciate the benefits that a college graduation could provide. Basically, the burden of success was placed on the student, not the

institution (Tinto, 2006). Since that time, the focus of the retention research has evolved. Tinto (2012) admitted that students do not necessarily integrate into the institution. Students interact with a variety of people and situations on the campus that include both academic and social interactions. These interactions may help facilitate a sense of belonging or other interactions may cause the student to feel unwelcome. Overall, what matters most with a student's decision to stay or leave is not necessarily their interactions on the campus, but how they understood the interaction and how it made them feel about their environment (Tinto, 2012).

More recently, Tinto (2012) proposed a model of institutional action. Students come to campus with a number of attributes, abilities, skills, levels of academic preparation, as well as attitudes, values, and knowledge of higher education. In addition, students are involved in a number of external settings such as work, family, and the community, which places a variety of demands on the student's time and energy. None the less, these traits are considered fixed and out of range for the institution to be able to influence. Items that an institution can influence include the four components noted above, such as maintaining high expectations; the academic, social, and financial supports presented by the campus; frequent feedback provided to the students; and the educational and social programming that entices students to be engaged. Through appropriate policies, programs, and practices a campus can design institutional action that will shape an environment where students will succeed and as a result persist (Tinto, 2012). Examining the NSSE data may help this institution gain a better understanding of how students interact with the campus. As Tinto (2012) recommended, the campus may take institutional action to design policies, programs, and practices that will improve student engagement and its retention rates.

The next theory is based on Alexander Astin's theory of involvement to describe the dynamics of how students change or develop while in college (Astin, 1984, 1985; Pascarella & Terenzini, 2005). The theory focused more on student behaviors rather than thoughts and feelings (Astin, 1984; Evans, Forney, Guido, Patton, & Renn, 2010). Astin (1984, 1985) incorporated five basic components into his theory: (a) involvement requires psychological and physical energy into a variety of objects such as tasks, people, or activities; (b) involvement needs to be continuous, although different students will invest a varied amount of energy into a variety of tasks; (c) involvement contains both quantitative and qualitative characteristics; (d) how much a student will learn is directly related to the quantity and quality of involvement; and (e) educational effectiveness of any practice or policy is directly related to its ability to entice student involvement (Evans et al., 2010; Pascarella & Terenzini, 2005). Astin's theory of involvement combines both the psychological and sociological explanations of student development. The institution or environment plays a critical role by offering the student a plethora of academic and social opportunities for involvement (Astin, 1984; Pascarella & Terenzini, 2005). "According to the theory, the extent to which students are able to develop their talents in college is a direct function of the amount of time and effort they devote to activities designed to produce these gains" (Astin, 1985, p. 36). This particular study was designed to measure the influence the level of student-faculty interaction, the experiences with the campus environment, and engagement in collaborative learning have on student persistence. It is expected that students who persist will have higher levels of involvement in the institution's academic and social opportunities. These opportunities are defined in the NSSE as engagement indicators. Thus, this study was designed to provide additional support for Astin's theory of involvement.

A similar construct to involvement is student engagement. This concept has been defined as the time and energy students invest in educationally purposeful activities and the effort institutions dedicate to utilizing effective educational practices (Kuh et al., 2008). According to Kuh (2002), the best predictor of college student learning and development is the amount of time and energy students devote to educationally purposeful activities. The most common effective educational activities include student-faculty interaction, cooperation among students, active learning, prompt feedback, time on task, high expectations, and respect for diverse talents and methods of learning (Chickering & Gamson, 1999; Kuh, 2002).

In order to measure the extent to which students participate in these educationally purposeful activities, the Pew Charitable Trusts provided Indiana University with a \$3.3 million grant to begin this research endeavor designed to strengthen institutional responsibility for student learning (NSSE, 2000). Overall, the researchers believed that if students read more, write more, and increase their interaction with their instructors and peers, they would improve essential skills and competencies, specifically in the areas of critical thinking, problem solving, effective communication, and responsible citizenship (NSSE, 2000). The National Survey of Student Engagement (NSSE) began in 2000. Information from the survey provided institutions with information about activities that their students engaged in, as well as addressed areas that needed improvement. Additionally, researchers have been able to demonstrate a positive relationship between student engagement and grades, as well as student persistence (Astin, 1985, 1993; Kuh et al., 2008; Pike & Kuh, 2005b). Although the theoretical frameworks emphasized student engagement, Pike and Kuh (2005b) stressed that it is the institutional policies and practices that have the greatest effect on the levels of student engagement. Thus, the use of NSSE in this study was designed to help identify the institutional policies and practices, as well

as the student characteristics that have the greatest effect on this university's level of student engagement.

Chapter Summary

This chapter introduced the research topic and described the progress that had been made over decades of research on student engagement and persistence. In addition, the specific context of the problem was presented and the influence research has had on the profession of higher education. The specific research questions and the unique terms used in the study were also defined. Furthermore, the chapter identified the limitations and delimitations of the study, as well as the intended contributions made to the body of knowledge related to student engagement and persistence. Finally, the theoretical frameworks used for the study were presented, including Tinto's theory of student departure, as well as his proposed model of institutional action; Astin's theory of involvement; and Kuh's contributions to the student engagement movement.

Chapter II

REVIEW OF THE RELATED LITERATURE

Evolution of Retention and Involvement

In his own review of the retention literature, Tinto (2006) stated that initially the expectation of success was placed on the student. From a psychological approach, student retention had more to do with the student's lack of ability, less motivation, and less willingness to appreciate the advantages that a college graduation could provide. Basically, the burden of college success and persistence was placed on the student, not the institution. In the 1970s, society began to take into consideration the influence the environment could have on an individual. As a result, researchers in student retention began to take into account the role the institution played in whether the student would leave or remain on campus. Tinto (2006) utilized this information as he designed his retention model of the relationship between the environment, such as the academic and social systems within the institution and the students attending them (Tinto, 2006). Critical to the model was the ability for students to integrate into the academic and social components of the institution, along with the patterns of interaction between them especially during the first year of a student's college career (Keup & Barefoot, 2005; Kim, 2009; Tinto, 2006; Upcraft, Gardner, Barefoot, & Associates, 2005).

Much of the early work related to retention evolved into a period referred to as the *age of involvement* (Kuh, 2003; Tinto, 2006). Researchers, including Alexander Astin, Ernest Pascarella, and Patrick Terenzini, played a significant role to reinforce the value of student contact or involvement and apply them to a variety of student outcomes, including student retention. The most vital lesson that these researchers learned during this period was that involvement mattered and it mattered most during the first year of college (Keup & Barefoot,

2005; Pascarella & Terenzini, 2005; Tinto, 2006; Upcraft et al., 2005). This lesson led many practitioners to focus much of their efforts on the first year of college to address the transitional needs of freshmen. During the 1980s, numerous service programs were instituted to enrich the first year experience. These programs included recruitment/admission strategies, extended orientation, reading programs, freshman seminars, academic advising and support, learning communities, career planning programs, developmental courses, residence education, and a variety of extracurricular programs (Anttonen & Chaskes, 2002; Keup & Barefoot, 2005; Pascarella & Terenzini, 2005; Tinto, 2006). Unfortunately, much of the initial research was drawn from large residential universities and students of majority backgrounds. The exploration typically excluded students attending other types of universities, such as two- and four-year campuses. In addition, the research failed to include students of different gender, race/ethnicity, income, and orientation (Tinto, 2006).

More recently, the field of student retention research has undergone numerous changes (Tinto, 2006). First, the field has gained a much better understanding of the experience of students from different backgrounds, as well as a number of other factors that influence student retention, including cultural, economic, social, and institutional. For example, retention experts originally believed that in order for students to successfully adjust to the college campus, they should break away from their communities. However, now researchers recognize the significant role families, the community, church, or the tribe may play on a student's ability to successfully persist through college (Nora, 2001; Tinto, 2006). Next, retention researchers have developed an appreciation for the need of a variety of approaches, specifically for different institutional settings, such as residential and commuter campuses, or two- and four-year campuses. For instance, with commuter campuses, external forces can easily impact a student's ability to

remain in school. Thus, the classroom can have an even greater influence on a student's engagement. The classroom may be the only opportunity for students to meet one another or have any interaction with the faculty. Because of these numerous differences, Tinto (2006) warned that if involvement does not happen in the classroom, it is unlikely that it will happen anywhere else on campus. Finally, with a better understanding of the complexity of student retention, the models of retention have had to be expanded. They now include a range of models, such as sociological, psychological, as well as economic models that have been proposed to better explain the student departure concern. Throughout these changes and alternative models, one element has remained clear and consistent - "Involvement, or what is increasingly being referred to as engagement, matters and it matters most during the critical first year of college" (Tinto, 2006, p. 4). Unfortunately, it is still unclear how to make involvement matter, specifically for different types of students, such as first-generation or minority students, as well as different types of campuses, such as residential or commuter campuses (Tinto, 2006; Upcraft et al., 2005). Since institutions invest an inordinate amount of resources into retention initiatives in hopes of increasing their graduation rates, it is important to determine which methods used to engage students within the campus culture have the greatest influence on student persistence.

To best prepare for this literature review on student retention and engagement, the first resource utilized was the Mullins Library online search tool found on the University of Arkansas' website. A number of academic databases were employed to conduct the research, including the EBSCOhost Academic Search Complete, ERIC - Education Resources Information Center, Sage Online Journals, JSTOR, ProQuest, and PsycINFO. In order to narrow the examination, the following search terms were employed within the above mentioned databases:

academic success, accountability, college quality, college student engagement, institutional factors, first-generation college student, minority student success, retention, four-year completion, residential and commuter student, and student persistence. In addition, a number of higher education publications were also utilized to identify appropriate research for this review. These included the *College of Student Affairs Journal*; *Journal of College Student Development*; *Journal of College Student Retention: Research, Theory, and Practice*; *Journal of the First-Year Experience & Students in Transition*; *NASPA Journal*; *Research in Higher Education*; *Teaching in Higher Education*; *The Review of Higher Education*; and *The Journal of Higher Education*. Similar keywords mentioned above were utilized in each of the publication searches.

The literature review consists of two major sections. The first section provides an overview of student engagement and the theoretical framework that much of the research is based on. Within this section, a number of high impact practices of effective student engagement initiatives and their influence on student learning and institutional improvement are presented. These include first-year engagement, learning communities, and faculty-student interaction. The second section presents several influences on student retention. Two major subsections were included with this portion of the review. These include research on specific student populations, such as first-generation students and under-represented students. The second subsection is related to institutional characteristics, including institutional factors that influence retention. Living and learning communities as well as off-campus living are examined to best determine how administrators can positively influence student engagement and retention.

Overview of Student Engagement

For over 30 years, the Carnegie classification system has provided the guidelines for research on colleges and universities that helps distinguish one institution from another (Pike &

Kuh, 2005b). In 2000, the system's designers were reviewing criteria that could more clearly differentiate institutions. One aspect considered at that time was to classify institutions based on students' educational experiences, specifically student engagement. More evidence was being presented on the positive influence of students engaged in educationally purposeful activities on learning and student success in college. Even Pascarella and Terenzini (2005) stated that the quality of individual effort and level of involvement in academic, interpersonal, and extracurricular activities can be considered a true measure of the impact of college. Thus, according to Pike and Kuh (2005b) it is critical for institutions to design their academic, interpersonal, and extracurricular programs that will inspire student involvement and engagement. Hopefully, the outcomes of these programs will have positive effects on student learning, persistence, and success.

It is no surprise that many of the researchers investigating the influence engagement has on student retention has framed their investigations around the Input-Environment-Outcome (I-E-O) model. This model is considered to be more methodological than conceptual (Oseguera, 2005; Renn & Reason, 2013). According to Oseguera (2005), the I-E-O model provides researchers the opportunity to adjust for differences of student characteristics and gain a clearer understanding of the effects of different environments on outcomes. Three environmental influences on student involvement or engagement include the initiatives that institutions introduce such as first year engagement efforts, the implementation of learning communities, as well as providing for student-faculty interaction.

First-Year Engagement

In relation to involvement, Keup and Barefoot (2005) reported that many institutions have developed numerous programs and practices to assist first-year students with getting

engaged and to help them with their transition to college. The researchers reported that there are a number of correlational studies in the literature that demonstrate a positive relationship between participating in a first-year seminar and several student outcomes including academic performance, student engagement, and student retention. However, the researchers noted that there is a significant limitation related to this body of research. Unfortunately, most of the studies are based on case-studies and institution-specific quantitative research (Keup & Barefoot, 2005).

Therefore, Keup and Barefoot (2005) utilized a longitudinal, multi-institutional, national data set to assess the influence first-year seminars have on a set of student outcomes including behaviors and activities as well as measures of adjustment during the first year of college. Since this study was one of the first to use national data in relationship with first-year seminars, the researchers warned that the study was exploratory in nature. Keup and Barefoot's (2005) study addressed three concerns. The researchers wanted to determine if there was a statistically significant relationship between taking a first-year seminar and specific behaviors, activities, or experiences of students during their first year of college. Next, the researchers wanted to identify the influence of participating in a first-year seminar on a student's feelings of success and their adjustment to college. Finally, it was important to determine if first-year seminars had any direct and/or indirect effect on specific outcomes of the first year of college (Keup & Barefoot, 2005).

To investigate these concerns, Keup and Barefoot (2005) utilized data from two surveys administered by the Cooperative Institutional Research Program (CIRP) at the Higher Education Research Institute (HERI) housed at the University of California, Los Angeles. The 2000 CIRP Freshman Survey included responses from 269,413 students from 434 baccalaureate-granting

institutions. From these responses, 17,737 students from 57 institutions received a follow-up questionnaire, Your First College Year (YFCY), at the end of their first year. The researchers also utilized data from the 2001 YFCY, including a sample of 3,680 students (21% response rate) from 50 institutions. The data from 2001 were weighted to address the discrepancy for the nonresponse bias so the responses would approximate a similar response rate as the previous survey. For the multivariate analyses, the data were unweighted since the relationship between variables have a tendency to be strong regardless of possible respondent bias.

Utilizing descriptive analyses, Keup and Barefoot (2005) found that a student's participation in first-year seminars demonstrated the likelihood of participation in several educationally purposeful activities. These academic activities included interacting with faculty outside of class or office hours on a weekly basis (69.7%), as compared to non-participants (65.3%). In addition, students who take first-year seminars are more likely to participate in better academic activities such as studying with other students (8.1% difference), speaking up in class (5.7% difference), and discussing course content with students outside of class (4.7% difference). These findings support the notion that first-year seminars encourage effective student behaviors in and outside the classroom. Furthermore, first-year seminars encourage interaction between students and faculty. These types of courses also help in developing reciprocity and cooperation among students. Finally, first-year seminars encourage active learning (Keup & Barefoot, 2005).

Keup and Barefoot (2005) also used descriptive analyses to identify several important differences between participants and nonparticipants of first-year seminars regarding social experiences and campus involvement. The researchers found that participants in first-year seminars are more likely to engage in volunteer/community service work (10.1% difference) and

develop close friendships with other students (7.3% difference). Another outcome identified by the researchers included participants that completed first-year seminars worried less about meeting new people (-1.3% difference) and did not feel isolated from campus life (-2.9% difference).

Additionally, through the use of multivariate analyses Keup and Barefoot (2005) focused on the impact of the variables for required versus optional participation in first-year seminars on several outcomes. These outcomes included how first-year seminars impact students' feelings of success at establishing meaningful connections with faculty, students' feelings of success with establishing a peer network, and students' feelings of success with using campus services. The researchers found that required first-year seminars have a positive relationship with students' feelings of personal success, specifically in building connections with faculty and in creating a network of friends on campus. However, they also discovered through their analyses that optional first-year seminars do not have a statistically significant relationship on any of the three adjustment measures used in this research. Future research would help determine if students who self-select into first-year seminars possess the personal and academic skills to successfully engage in college. Regardless, this study presented evidence that first-year seminars demonstrate a meaningful curricular intervention that assists students with their transition to college. More importantly, the evidence was based on a national data set, not on case studies, nor was it institution-specific. Utilizing engagement techniques such as first-year seminars can not only have a positive influence on first-year retention, it can also play a significant role in increasing retention and improving graduation rates of an institution.

In a related study on first-year engagement, Kuh, et al. (2008) wanted to gain a clear understanding of the causes and consequences of student success in college and how these

features interact together with gender, race and ethnicity, and first generation status. More importantly, the researchers wanted to determine how specific student behaviors and institutional practices and conditions nurtured student persistence and success. To achieve this goal, the researchers examined the relationship between student engagement and two significant outcomes of college: academic achievement and persistence. In addition, the researchers wanted to determine the influence of engaging in educationally purposeful activities on these outcomes for students from different racial and ethnic groups.

To begin their investigation, Kuh et al. (2008) conducted a national study including 18 baccalaureate-granting institutions that administered the National Survey of Student Engagement (NSSE) at least once between 2000 and 2003. From this sample, 11 schools were Predominantly White Institutions (PWIs), four were Historically Black Colleges and Universities (HBCUs), and three were from Hispanic Serving Institutions (HSIs). Seven of the campuses focused primarily on undergraduate education, seven offered master's degrees, and four were doctoral degree granting institutions. Furthermore, four of the campuses had 90% or more of first-year students living on or close to campus, six campuses had between 75% and 89%, four campuses had between 50% and 74%, two campuses had between 25% and 49%, and two campuses had below 25%. There were no exclusively commuter campuses included in the sample.

Kuh et al. (2008) selected numerous sources of information to include in their analysis. These included information about students' backgrounds and pre-college experiences, such as their academic achievement collected from information submitted with the ACT or SAT (obtained from the College Board with permission from participating institutions); the students' responses to the NSSE collected during the spring semester of their first year; and information collected from each institution's office of institutional research including records on student

academic achievement and financial aid collected during numerous points throughout the academic year (which were specifically utilized to measure the two key outcome variables: academic year grade point average and college persistence). Combined together, these resources presented a longitudinal look at students from before they entered college to the fall semester of their second year. To assure consistency, the researchers only included the 6,193 students who had complete data for all the variables considered for analysis.

For this particular study, student engagement was defined as “both the time and energy students invest in educationally purposeful activities and the effort institutions devote to using effective educational practices” (Kuh et al., 2008, p. 542). The researchers utilized student engagement reflected by three individual measures from the NSSE. These included time spent studying, time spent in co-curricular activities, and an inclusive measure of engagement in effective educational practices. Academic achievement and persistence were measured by the academic year grade point average and persistence to the second year of college at the same institution. The aggregated information was provided by the participating institutions. Kuh et al. (2008) calculated the measures to guarantee that both constructs were computed consistently for all students included in the study.

Through a two stage analysis, Kuh et al. (2008) were able to produce a comprehensive representation of the relationships between students’ backgrounds and pre-college characteristics, college experiences, and the two outcomes measured. With regard to academic achievement, by regressing first-year grade point average on student background characteristics (including demographics, pre-college experiences, and prior academic achievement as predictors of GPA) and first-year experiences, when combined accounted for 29% of the variance of first-year grades, which represented the strongest influence on first-year GPA. When student

engagement measures were added to the model, an additional 13% of variance in first-year GPA was reflected, which accounted for a total variance of 42%. When considering first-year experiences with the model, the influence of demographic characteristics, pre-college experiences, and prior academic achievement remained statistically significant, but diminished in magnitude. Moreover, the effects of parents' educational experience basically vanished. These findings were consistent with much of the research previously published in the student engagement literature. The results suggest that a student's background characteristics and pre-college behaviors do have some influence on student persistence and success. Additionally, student engagement in educationally purposeful activities had a minor but statistically significant influence on first-year grades. Specifically, one-standard deviation increase in engagement type activities during the first year of college improved a student's GPA by approximately .04 points (Kuh et al., 2008).

When Kuh et al. (2008) examined if time spent studying was influenced by pre-college academic achievement (as measured by ACT scores), they found a statistically significant relationship. In other words, for every category of study time there was a positive relationship with the ACT score and a student's first-year GPA. The investigators also wanted to determine if the influence of educationally purposeful activities on first-year GPA differed by prior levels of academic achievement. Their analysis suggested that for students with an ACT score of 20, earned an increase in GPA of .06 for every standard deviation increase in participating in educationally purposeful activities. For students with an ACT score of 24, they gained .04 point GPA with the same amount of increase in engaging in educationally purposeful activities. Finally, students with a score of 28 on the ACT, gained only .02 points in their GPA (Kuh et al., 2008).

When the interaction between engagement in educationally purposeful activities and race were considered with the model, the researchers found a statistically significant relationship existed by race and ethnicity with Hispanic and white students, but not the other student groups. More specifically, for an increase by one standard deviation in educationally purposeful activities by Hispanic students, it would result in approximately .11 increase in first-year GPA, while only an increase of .03 for white students. Overall, engagement in educationally purposeful activities for first-year students provides a statistically significant influence on persistence in college, even after controlling for background characteristics, academic achievement, financial aid, and other campus experiences (Kuh et al., 2008).

Learning Communities

Another initiative presented in the student engagement literature includes the investigations of the benefits of engaging students in the classroom (Tinto, 2006; Ward & Commander, 2011), particularly the benefits of learning communities. In an attempt to gain a better understanding of the long-term effects of learning communities and their influence on student success at a large public institution in the southeast, Ward and Commander (2011), conducted a mixed methods study. Focus groups were conducted with junior and senior students and combined with quantitative academic performance, as well as survey data to provide additional support for learning communities.

To accomplish this goal, Ward and Commander (2011) explained that learning communities at this institution were designed according to the *clustered model* where students were grouped around a curricular discipline and were referred to as *Freshmen Learning Communities* (FLCs). Ideally, this particular grouping would improve students' connections to each other, their faculty, and the core courses they were studying for their major. The institution

enrolled a group of 25 students into a block of five courses during their first semester that included a three hour orientation course, along with four content area courses. Over a nine year period the researchers collected quantitative data that reflected much of the national findings on the influence of FLCs during that period. When compared with non-FLC students, the FLC students were retained at a much higher rate. For example, the 2006 FLC cohort had a retention rate of 84.26%, while the non-FLC cohort had a retention rate of 79.4%. Furthermore, the fifth year graduation rate for the 1999 cohort of FLC students was 45.1%, when compared with the non-FLC cohort graduation rate of 38.3%. This trend was consistent with the fall 2000 and fall 2001 cohorts.

These results appeared to be positive, but provided limited information for determining further action at the institution. Ward and Commander (2011) were interested in collecting a broader view of the benefits of the FLC experience from the students in order to provide an opportunity for their voices to influence future curriculum interventions. To accomplish this outcome, the researchers reviewed four different data sets. As mentioned above, the first set of quantitative data provided by the institution's Office of Institutional Research presented the long-lasting effects of FLCs in terms of academic achievement, retention, and graduation rates. With hopes of understanding the long term effects of the FLCs based on the students' experiences and their understanding of those experiences, the researchers decided to conduct focus groups. Invitations were sent to students from the 2004 FLC cohorts who were enrolled during the fall 2007 semester. A total of 24 students participated. Five different sessions were conducted using the standard focus group framework of open-ended questions for three sessions and in-depth interviews for two additional sessions. The student narratives were analyzed using a computer-assisted qualitative data analysis program that identified multiple themes.

The third set of data was collected from the 2008 administration of the National Survey of Student Engagement (NSSE). Finally, the fourth set of data came from an internal institutional survey administered to exiting students called the Survey of Recent Graduates (SRG). The SRG is designed to measure general education learning outcomes, program of study learning outcomes, student engagement, and student satisfaction [no information was provided on the reliability or validity of this instrument]. Information from both surveys were utilized to select items that paralleled with the four strongest narrative themes that materialized from the qualitative data analysis (Ward & Commander, 2011).

Ward and Commander (2011) were hesitant to accept a causal relationship between FLC membership and improved GPAs, retention rates, and graduation rates because of a number of influencing variables (e.g., maturity, employment, engagement in one's major) that may misrepresent the extent of the influence of FLC membership over time. Therefore, they incorporated the focus group data into their investigation. From this data set, nine major narrative themes emerged, suggesting that FLC membership continued to play a part of students' decisions and their behaviors throughout their undergraduate career. The major themes included student/professor connections, student collaboration, impact on study skills, engagement with the university and city, student friendships, impact on choice of major, FLC as a transition into college, continuation of the FLC program beyond the first semester, and the orientation course. With the identification of the nine themes, the researchers were able to connect four themes with items from the 2008 NSSE, as well as the institution's SRG. These included student/professor connections, student collaboration, engagement with the university/city, and student friendships.

The use of multiple methodologies provided a richer interpretation for supporting learning communities at the researchers' institution (Ward & Commander, 2011). Being a

member of a FLC provided students with not only an opportunity to develop close relationships with their faculty during their freshman year, but to extend those relationships throughout their undergraduate experience. The FLC also provided students with a collaborative opportunity to enhance their peer to peer relationships that continued over time. The research also demonstrated that participation in the learning community helped students feel more comfortable in the large university and urban setting. It also assisted them with engaging in more campus activities and allowed them to learn more about the city around their institution. Furthermore, participating in the FLC either reaffirmed or helped students reconsider their choice of major. Overall, the FLC helped students make a seamless transition into university life.

Student-Faculty Interaction

Much of the engagement literature references work that measures the quality of the undergraduate experience. Historically, quality measures of institutions were based on admission selectivity, the number of terminal degrees held by the faculty, the quality and quantity of library holdings, financial resources, and the prestige of the institution based on faculty research (Umbach & Wawrzynski, 2005). Over the past 20 years, a paradigm shift has begun to take place in higher education. These measures of quality have been frequently criticized because these characteristics failed to provide any measurement on "...how and why students were actively engaged in the learning process, the extent and nature of student interactions with faculty, the focus and intensity of academic experiences, and the overall level of student engagement" (Umbach & Wawrzynski, 2005, p. 154). Few empirical studies have been conducted that measure what faculty practices have had the greatest influence on student learning gains. Therefore, Umbach and Wawrzynski (2005) utilized two national data sets to investigate the relationship between faculty activities and student engagement. More

specifically, the researchers attempted to identify what faculty behaviors and attitudes are related to student behaviors connected to positive student outcomes. The researchers also wanted to determine if the behaviors and attitudes of faculty could create a cultural environment for learning that encourages student behaviors, positive student perceptions of environment, and high levels of student self-reported gains. Finally, the researchers wanted to determine if there was a specific institutional type where faculty demonstrate these behaviors and attitudes.

To prepare for their study, Umbach and Wawrzynski (2005) reported that most researchers investigating the relationship between students and the college environment utilized the interaction models of Tinto and Astin. Where Tinto emphasized the ability of a student to successfully integrate into the social and academic environments of a campus, Astin's model of inputs-environments-outcomes focused on the influence institutional practices and environmental experiences (e.g., faculty-student contact, pedagogical techniques) had on student outcomes (e.g., student engagement and student learning). Through these models, the researchers addressed the influence of the amount of time, as well as physical and psychological energy that students invest in their college experiences and how it enhances their learning and academic development.

Umbach and Wawrzynski (2005) also addressed the revolutionary document by Chickering and Gamson known as the *Principles of Good Practice for Undergraduate Education*. These principles were established by a task force in the mid-1980s to improve undergraduate education. This group included scholars that had completed much of the research on the college experience, as well as organizational, economic, and policy issues in higher education (Chickering & Gamson, 1999). The task force's goal was to create a document that would be meaningful to key stakeholders including campus administrators, state higher

education agencies, and government policymakers. Ultimately, seven principles were agreed upon as guiding values for improving undergraduate education. These principles included:

- Encourages student-faculty contact
- Encourages cooperation among students
- Encourages active learning
- Gives prompt feedback
- Emphasizes time on task
- Communicates high expectations
- Respects diverse talents and ways of learning (Chickering & Gamson, 1999, p. 76)

According to Umbach and Wawrzynski (2005), numerous researchers have reported on the strong relationship between both the formal and informal faculty-student contact and student learning. By gaining a better understanding of faculty behaviors and institutional characteristics, the researchers believed it would provide a clearer appreciation for what influences student learning and student engagement. In order to achieve this goal, Umbach and Wawrzynski (2005) utilized two national data sets. The first data source was from the 2003 administration of the National Survey of Student Engagement. As noted before, the NSSE survey is designed to measure the extent of how students participate in effective educational practices and what they gain from their college experiences. For this particular study, only institutions that surveyed their faculty were included. Therefore, only 137 campuses were involved, which included the NSSE responses of 20,226 seniors and 22,033 first-year students. The second data set was a parallel study that measured the attitudes and behaviors of faculty at the same 137 NSSE participating institutions. This instrument is designed to assess faculty expectations for student engagement in educational practices that have a significant relationship with high levels of

learning and development. The survey also measured how faculty organized their classroom and out-of-class assignments. This particular data set included 14,336 faculty who completed the survey.

In order to effectively assess the data, Umbach and Wawrzynski (2005) utilized hierarchical linear modeling (HLM) in a two-stage analysis. In the first stage, the researchers were interested in the connection between typical faculty behaviors at a campus and student engagement and learning. To complete the investigation the researchers identified several constructs as their dependent variables. These included student engagement (e.g., academic challenge, active and collaborative learning, student-faculty interaction), student perceptions of support (e.g., supportive campus environment, interpersonal support, support for academic success, student satisfaction), and student self-reported gains. The researchers also controlled for age, race, gender, transfer status, on-campus residence, student athlete, Greek affiliation, major, full-time, and parents' education as part of the level one model.

For the level two model, Umbach and Wawrzynski (2005) permitted student scores to vary by campus. The researchers' goal was to have a clearer understanding of the connection between student experiences and typical faculty behaviors and attitudes at a specific campus. Thus, the researchers designed six faculty constructs and aggregated them by institution. The constructs included course-related interactions with students, out-of-class interactions with students, faculty use of active and collaborative learning techniques, level of academic challenge faculty provided students, level of importance faculty placed on enriching educational experiences, and the amount of emphasis faculty placed on higher order cognitive activities. Umbach and Wawrzynski (2005) contended that these six institution-level constructs reflected a campus culture where faculty accentuated best practices in effective undergraduate education.

From their analysis, Umbach and Wawrzynski (2005) were able to determine the level of influence student-faculty interaction had on student engagement. For example, typical faculty member reports of course-related interaction demonstrated a positive relationship with student reports of student-faculty interaction. For institutions where faculty report frequent course-related interaction with students, both first-year and senior students reported that they were more challenged and engaged in active and collaborative learning activities. In addition, both groups of students reported greater gains in personal/social development and general education knowledge. The results of the analysis also demonstrated a positive relationship between college environments where faculty used active and collaborative learning techniques and student gains. Also, both groups of students reported greater gains in personal/social development, general education knowledge, and practical competencies at institutions where faculty engaged students in active and collaborative learning exercises.

Regarding academic challenge, Umbach and Wawrzynski (2005) utilized their models to confirm campuses that have faculty who challenge their students academically were able to predict student engagement, student perceptions of their environment, and student self-reported gains. In other words, typical faculty level of academic challenge had a positive relationship with student experiences of active and collaborative learning. However, when all controls were considered, there was hardly any relationship between faculty reports of academic challenge and student perceptions of their environment. For student gains, the results suggested a positive relationship to the levels of challenge faculty presented at an institution. For first-year students, there was a positive relationship between the level of academic challenge and student gains in general education knowledge and practical competencies. Greater gains in general education for first-year students was also reported for campuses where faculty emphasized higher-order

cognitive activities. Whereas for seniors, greater gains were reported in personal/social development and general education knowledge at institutions where they were academically challenged, as well as for campuses that encouraged higher order cognitive activities.

In addition, the analysis Umbach and Wawrzynski (2005) conducted presented useful information related to the value placed on enriching educational activities. It appeared that both seniors and first-year students were more engaged on campuses where faculty placed an emphasis on participating in enriching educational experiences. There was a significant positive relationship between the level of importance and academic challenge, student-faculty interaction, and active and collaborative learning. For campuses where faculty emphasized the benefits of enriching educational activities, students reported greater gains in personal/social development, general education, and practical competencies.

Finally, Umbach and Wawrzynski (2005) addressed the third concern to determine if there was a specific institutional type where faculty demonstrate these behaviors and attitudes that influence student engagement and student learning. The researchers found that faculty at liberal arts colleges typically interacted more with students, challenged students academically, utilized active and collaborative learning activities, and valued enriching educational activities. These outcomes suggested that faculty at liberal arts colleges were more likely than faculty at other institutional types to create an environment that led to student engagement and student learning. However, when other controls were considered, some of the differences reduced or vanished. Further, after controls were introduced, there were no significant differences in out-of-class interactions between Carnegie groups. Although, after controlling for institutional characteristics, liberal arts faculty were more likely to utilize active and collaborative

pedagogies, challenge their students at higher order cognitive levels, and placed a higher level of importance on enriching academic activities (Umbach & Wawrzynski, 2005).

Overall, Umbach and Wawrzynski's (2005) findings suggest that faculty do matter in relationship to student learning and engagement. According to the researchers, the behaviors and attitudes that faculty present creates an educational context that significantly influences student learning, provides the perception that the students have greater support, and greater gains from their undergraduate experience. This empirical type of research supports Astin's conclusions that faculty play a meaningful role in the development of undergraduate students (Astin, 1993; Umbach & Wawrzynski, 2005). For campuses who search for this type of engaged culture, administrators may consider these types of attitudes during the hiring process of new faculty.

In a more recent study, Lillis (2011) examined the relationship between student-faculty interaction and the tendency for students to dropout. Specifically, the researcher focused on student attitudes and how it influenced their desire to stay enrolled. Student departure has been examined over numerous studies. A number of variables have been identified that can help explain a student's decision to withdraw. These variables include financial concerns, socioeconomic background, academic performance, social integration, campus climate, peer support, student faculty relationship, and academic self-confidence (Lau, 2003; Lillis, 2011). Yet, few researchers can agree on the root cause for a student to decide to leave their institution, specifically within the first year of enrollment.

Value, throughout the retention literature, has been given to the benefits of early socialization and institutional fit and their influence on a student's educational aspirations (Lau, 2003; Pascarella & Terenzini, 2005; Renn & Reason, 2013; Tinto, 1993). Another significant factor related to the bond between the student and the institution is enabled and stimulated by

positive interactions with faculty (Lillis, 2011; Pascarella & Terenzini, 1991, 2005; Renn & Reason, 2013). Thus, faculty play a crucial role in the socialization of students into the campus environment. Faculty can provide both academic and social support which can help students be successful throughout their academic career (Lau, 2003; Lillis, 2011; Pascarella & Terenzini, 2005).

To prepare for the study, Lillis (2011) acknowledged that the previous research had been mixed on whether a mentor-protégé relationship could positively influence satisfaction with the university. Thus, Lillis (2011) decided to examine the role emotional intelligence of faculty had with the quality of student-faculty interaction. For purposes of this study, Lillis (2011) defined emotional intelligence as a form of social intelligence where individuals can monitor their own emotions and how that information can influence one's thinking and actions. Therefore, Lillis (2011) examined how the frequency of informal communication with faculty would influence a student's desire to remain enrolled at an institution. Lillis (2011) hypothesized that frequent interactions with faculty would have a negative relationship with student attrition. Secondly, Lillis (2011) assumed that students who were mentored by faculty with high emotional intelligence would have less attrition intentions than those students who were mentored by faculty who were lower in emotional intelligence.

Lillis (2011) utilized a sample of 111 undergraduate students enrolled in a lower level management course in the fall semester of 2008 at a small private college in the northeast. The participants included 40 females and 71 males, which included 94 first-year students, 15 sophomores, 1 junior, and 1 senior. From the 111 participants, 9 were eliminated because of either incomplete data or were not considered first-year students. As part of a retention initiative within the business department, all students enrolled in the management course were required to

participate in a mentoring program with the departmental faculty. As part of the program, faculty were directed to offer at least eight 30-minute mentoring sessions each week for four weeks. For the initial meeting, faculty were directed to help students by providing academic and social support. At the end of each session, faculty distributed a survey with instructions to return it no later than the end of the semester. Faculty also were directed to encourage the mentees to return at any time during the semester for additional support and guidance.

Lillis (2011) explained that the survey included 148 questions within four sections. Section one included questions related to how important certain mentoring outcomes were for the students to feel satisfied with the mentoring experience and to describe how close their faculty mentor met those outcomes. Section two focused on outcomes related to their experience as a member of a college community. Section three focused on personal information and information related to the frequency and quality of their faculty interactions. Finally, section four asked respondents to complete a multi-rater version of the Emotional Competence Inventory (ECI). The ECI measured 18 competencies organized into six clusters, including self-awareness, social awareness, self-regulation, motivation skills, working with others, and leading others.

Through two-way analysis of variance, Lillis (2011) was able to confirm that students who experience lower levels of communication frequency demonstrated higher attrition tendencies. Frequent contact with the business faculty appeared to have led to a fairly large influence on institutional attrition intentions. The study was also able to demonstrate that faculty mentor emotional intelligence is likely to influence the relationship between student-faculty mentor communication frequencies and attrition intentions. Thus, communication exchanges are noticeably influenced by emotional intelligence. Students with faculty mentors who had high emotional intelligence levels demonstrated less of an intention to drop out of the institution.

In a complimentary report to the significant role faculty play in student success, Pomerantz (2006), identified three crises in higher education that were published by the State Higher Education Executive Officers (SHEEO) in 2005. These crises included: (a) U.S. higher education has fallen behind other developed countries, (b) 40% of students do not graduate within six years, and (c) current accountability systems are not effective. According to Pomerantz (2006), the Southern Association of Colleges and Schools (SACS) has responded to the demands for better accountability in higher education, by altering the reaccreditation process to include a focus on institutional effectiveness. The reaccreditation process now requires institutions to develop a Quality Enhancement Plan (QEP). This plan should include a course of action that is specifically designed to enhance educational quality and is directly linked to student learning. The intended outcome is designed to help institutions direct their efforts toward tangible improvements rather than simply documenting past accomplishments.

In response to the above reports, as well as the popularity of publications that rank colleges and universities, campuses have attempted to find more effective measures of the quality of undergraduate education (Pomerantz, 2006). One outcome of the research is the National Survey of Student Engagement. According to Pomerantz (2006), the NSSE offers a new method for thinking about and assessing quality by providing data that is significantly different from the formulas used by the publications that rank colleges and universities. More specifically, “the NSSE is a method to help measure how well an institution affects the learning experiences of its students” (Pomerantz, 2006, p. 178). Unlike other instruments designed to measure student learning, the NSSE measures how much time and effort students put into class preparation and other educationally purposeful activities or more simply put; measures the level of student involvement.

Furthermore, Pomerantz (2006) reported that the student affairs profession has struggled to define itself. The field has been driven by a number of paradigms over the past 20 years. These models have been referred to as student services, student development, as well as student learning. Each of them have contributed to defining the profession and providing direction to the work being done with students. The most recent paradigm is student engagement. By engaging students in structured activities and observable behaviors outside of the classroom, student affairs can have a measureable effect on student learning. Pomerantz (2006) challenged student affairs professionals to redefine their work in learning terms. Shifting the focus from service, to development, and finally to learning, will help student affairs professionals design interventions that encourage specific engagement behaviors. Ideally, these behaviors would result in outcomes of improved student learning, as well as increased retention and graduation rates.

Influences on Student Retention

Student Populations

First-Generation Students

The retention literature has acknowledged that first-generation college students are less likely to persist and graduate than their second-generation counterparts. According to Pike and Kuh (2005a), first-generation college students have a three-year retention rate of 73%, while second-generation students have a persistence rate of 88% in four-year institutions (Warburton, Bugarin, & Nunez, 2001). The term *first-generation college student* most frequently refers to a student whose family had no parent or guardian who had earned a baccalaureate degree (Choy, 2001; Pike & Kuh, 2005a). The term *second-generation college student* most frequently refers to a student who had one parent or guardian who had successfully earned at least one baccalaureate degree. The retention literature noted that the lower persistence and graduation

rates, as well as first-generation students' lower scores on standardized assessments were the effect of differences in the precollege characteristics between first- and second-generation students (Pike & Kuh, 2005a; Terenzini, Springer, Yaeger, Pascarella, & Nora, 1996).

The differences of precollege characteristics between first- and second-generation students consisted of first-generation students came from families of lower socio-economic status as well as they had lower levels of engagement in high school when compared with second-generation students (Terenzini et al., 1996). These characteristics may influence a student's ability to succeed in college. Another factor related to college success is the student's ability to assimilate into and manage the numerous challenges of college. Assimilation tends to be a significant factor for first-generation students where it is a more seamless process for second-generation students (Billson & Terry, 1982; Terenzini et al., 1996). Interestingly, the research regarding the influence of the role of educational aspirations was mixed. Pike and Kuh (2005a) reported that some researchers found no differences between first- and second-generation students and their educational aspirations (Billson & Terry, 1982). However, Terenzini et al. (1996) found that first-generation students had lower educational aspirations.

Even after controlling for precollege characteristics, Pike and Kuh (2005a) described a number of aspects of first-generation students' college experiences that influenced college success. These characteristics included that first-generation students were less likely to live on campus, facilitate relationships with their faculty, or recognize faculty as being concerned about their development. First-generation students also worked more hours off campus (Pike & Kuh, 2005a; Terenzini et al., 1996). They were also less likely to build close relationships with other students or become involved in campus groups or structured programs (Billson & Terry, 1982;

Pike & Kuh, 2005a; Terenzini et al., 1996). Overall, first-generation students were generally less satisfied with the campus environment (Pike & Kuh, 2005a; Terenzini et al., 1996).

Although research outcomes suggest that first-generation status influences college experiences, when differences in background characteristics and levels of engagement are controlled, there is little difference in the advances these students make when compared with second-generation students (Terenzini et al., 1996). However, evidence does suggest that there may be a relationship between first-generation status and college experiences in that the effects of engagement on learning vary for first- and second-generation students (Pike & Kuh, 2005a).

Unfortunately, little research has been done to understand these differences between first- and second generation students' college experiences and how those experiences influence their learning and intellectual development. To address this gap in the retention literature, Pike and Kuh (2005a) conducted a quantitative study where they utilized a stratified random sample of 3,000 undergraduate students across the country who completed the *College Student Experiences Questionnaire (CSEQ), Fourth Edition*. In order to examine the differences in the backgrounds, college experiences, and learning outcomes of first- and second-generation students, the researchers used a multigroup structural equation model with latent variables. This research design allowed the investigators to recognize any connections between group membership and the influences of student characteristics and engagement on student learning outcomes, to measure the differences in the levels of engagement and learning, as well as to determine if the differences were a direct or indirect result of being a first-generation college student.

From the 3,000 undergraduates who completed the CSEQ, excluding students who were not freshmen or students who had missing data on any of the measures, 1,127 students remained. From this group, 439 (39%) were first-generation students and 688 (61%) were second-

generation students. Additionally, 32% of participants attended doctoral/research universities, 30% attended master's institutions, 27% attended baccalaureate liberal arts colleges, and 11% attended general baccalaureate campuses. Almost 66% were female and 16% were from historically underrepresented groups (5% African American, 3% Asian/Pacific Islander, 4% Hispanic/Latino, 2% Native American, and 2% Multiracial or Other). Regardless of the large presence of first-generation students involved in the study, the participants represented a typical traditional college-going population. Close to 95% of the students were less than 20 years old, 93% were enrolled full time, and 98% were not able to meet half of their college expenses without help (Pike & Kuh, 2005a).

From their analysis, Pike and Kuh (2005a) were able to determine that first-generation students reported significantly lower levels of academic and social engagement. First-generation students also perceived the college environment as less supportive and described making less progress in their learning and intellectual development. The researchers reported that the majority of these differences were due to educational aspirations and where students lived while attending college (Pike & Kuh, 2005a). The results of this study were consistent with the findings by Terenzini et al. (1996). Overall, the findings of this study indicated that low levels of engagement may be an indirect result of being a first-generation college student and are more directly an influence of lower educational aspirations and living off campus (Pike & Kuh, 2005a).

In a similar study on first-generation student success, Soria and Stebleton (2012) presented a quantitative study on the differences in academic engagement and retention between first-generation and non-first-generation students at a public research centered institution. The researchers reported that first-generation students were very different from their non-first

generation peers in numerous ways. From the review of the retention literature, the researchers indicated that first-generation students were more likely to come from lower socioeconomic status, have lower educational goals, and lower levels of engagement in high school. First-generation students were also more likely to have lower scores on the Scholastic Aptitude Test (SAT), lower high school grade point averages, and receive less family support to attend college (Billson & Terry, 1982; Soria & Stebleton, 2012; Terenzini et al., 1996). Because of these differences, many first-generation students experience more transitional issues to higher education than their non-first generation peers. Thus, first-generation students' retention was typically lower than their non-first generation counterparts, as well as first-generation students had lower graduation rates.

Soria and Stebleton (2012) reported that many scholars who explored the differences between first-generation and non-first generation students utilized Bourdieu's theory of social capital. The researchers defined social capital as "privileged knowledge, resources, and information attained through social networks" (p. 675). Social capital is generally utilized in higher education to influence college selection, as well as the types of academic and social choices students make while enrolled. First-generation students have limited social capital because they received little to no information from their parents that would help them transition into the culture of higher education (Gofen, 2009; Soria & Stebleton, 2012).

According to Soria and Stebleton (2012), the retention research indicated four areas that contributed significantly to student success. These included studying in groups, interacting with faculty and other students, participating in extra-curricular activities, and utilizing support services. Students who lacked social capital would be unaware of the value these types of activities and programs could bring to their life as a student and the likelihood of succeeding in

college. As a result, first-generation students who failed to engage would begin to feel isolated and disconnected to their environment. Unfortunately, these challenges would be enhanced when students enrolled in a large research-centered university, where first-year classes are generally larger and access to faculty is somewhat limited. At these types of campuses, students often depended on their peers to help them navigate the maze of academic resources. Where first-generation students lacked social capital, they would often fail to develop any relationships with faculty, as well as become less engaged in their overall academic pursuits (Kim, 2009; Soria & Stebleton, 2012).

Based on this information, Soria and Stebleton (2012) investigated the differences in academic engagement and retention between first-generation and non-first-generation students at a public university classified by the Carnegie Foundation as a very high research-centered institution in order to specifically address two concerns. The researchers wanted to determine if first-generation students were less likely than non-first-generation students to persist from the first to the second year of college while controlling for other factors. Secondly, they wanted to determine if there were any significant differences with regard to the students' levels of academic engagement. Finally, they wanted to determine if the differences in academic engagement persisted if they were able to control for additional variables.

To identify these differences, the researchers utilized the Student Experience in the Research University (SERU) survey. This survey was hosted by the Center for Studies of Higher Education at the University of California-Berkeley. The survey was administered to the entire undergraduate enrollment during the spring 2010 semester, including 28,237 students. Questions included in the web-based questionnaire focused on four thematic areas. These areas included academic engagement, community and civic engagement, global knowledge and skills, and

student life and development (Soria & Stebleton, 2012). From the 5,364 first-time, first-year students who were sent the survey by email, 1,864 students responded to at least one question, which established the sample size of the study. Regarding the demographic variables, the researchers found that first-generation students were more likely to be students of color, working class, and low-income (Soria & Stebleton, 2012). Thus, the researchers decided to control for these factors in their analyses.

While controlling for race, gender, social class, grade point average, campus climate, and sense of belonging, the researchers utilized logistic regression in predicting the first-year to second-year retention. To examine the variable of academic engagement, the survey included questions related to the frequency students engaged in academic-related activities such as contributing to class discussions, asking insightful questions in class, bringing up ideas or concepts from different courses during class discussions, and interacting with faculty during class lectures. The researchers utilized *t*-tests to determine if a difference existed between first-generation and non-first-generation students (Soria & Stebleton, 2012).

Overall, Soria and Stebleton (2012) were able to determine that statistically significant ($p < 0.05$) differences existed between first-generation and non-first-generation students in all of the academic engagement factors mentioned above during their first year of college. The researchers were able to identify a number of distinctions between the two groups. First-generation students were connected with lower retention rates when compared with their non-first-generation peers, even after controlling for the factors noted. In addition, first-generation students reported lower rates of academic engagement, while controlling for demographic, academic, and social features. More closely, first-generation students reported having fewer interactions with faculty in the classroom and did not contribute very often to class discussions. Furthermore, first-generation

students did not discuss ideas or theories from other classes during class discussions. Finally, first-generation students reported that it was unlikely for them to ask insightful questions in class. These results reinforced Soria and Stebleton's (2012) assumptions regarding social capital. The lack of social capital with first-generation students results in decreased academic engagement. From this study, the researchers encouraged faculty, administrators, and scholars to investigate and implement strategies that are designed to enhance and engage first-generation students inside and outside of the classroom.

More recently, D'Amico and Dika (2013) conducted a quantitative study on approximately 3,000 first-year students at a public, urban, doctoral institution to compare data known at the initial enrollment with first-year grade point averages and second-year retention of first-generation and non-first-generation college students. The researchers stated that the majority of higher education literature considered the status of students being first-generation as creating an obstacle to successful degree completion. Since the first-generation student population consisted of over 50% of new student enrollment at numerous regional four-year universities and community colleges, it was important to identify the specific differences between first- and non-first-generation students in order to determine good predictors of college student success.

Based on previous literature, D'Amico and Dika (2013) established the conceptual framework of the study to focus on four barriers to college student success. These barriers included the cultural shift into higher education, financial issues, academic factors, and integration into the college environment. The researchers reviewed these four potential thematic barriers to better determine which students would be at greatest risk for poor performance and/or attrition. For this particular study, the thematic barriers were matched with variables that were

known at the time each student was admitted and enrolled for courses. The cultural barrier was matched with low parent education of first-generation students. The financial issues were matched with low family income. The academic factors were matched with lower previous achievement (high school GPA and standardized test scores) and undeclared major status. The integration barrier was matched with the status of residency (in-state or out-of-state). Finally, demographics were matched with racial/ethnic minority status and gender since there was a known relationship between these variables and college access and success (Gibbons & Borders, 2010; Terenzini et al., 1996). From these factors, D'Amico and Dika (2013) hypothesized that first-generation students were significantly less likely to persist to the second year and to earn first-year grade point averages equivalent to their non-first-generation classmates.

To investigate this outcome, D'Amico and Dika (2013) selected a state-supported, urban doctoral university in the Southeast with a total enrollment of approximately 25,000 students. This particular institution was selected because of the relative socioeconomic and ethnic diversity of its undergraduate enrollment with approximately 50% first-generation students and 30% representing ethnic minorities. The participants of the study included first-time, first-year students from two fall semester cohorts who completed the first-year (freshman) survey during their summer orientation session. The cohorts included complete data on all variables with a total of 1,433 (70%) first-year students in year one of the study, and 1,538 (66%) first-year students in year two of the study.

Student data were collected from the university's student information system. According to D'Amico and Dika (2013), specific student information included the term of initial enrollment, whether the student persisted to the third semester, first-year grade point average, ethnicity, gender, major at the time of admission (declared/undeclared), residency classification

(in-state/out-of-state), and PGPA [predicted grade point average] based on an institutional calculation that incorporates SAT scores and weighted grades in high school courses. Data on generational status and family income were collected from the feedback students provided on the first-year student survey.

D'Amico and Dika (2013) utilized logistic regression to determine which variables were significant in predicting second-year retention for first-generation and non-first-generation students. First, the higher PGPA was related with the higher likelihood to return for a second year for first-generation students. Ethnicity played a surprising role. Being white versus African American or Asian reduced the likelihood of returning for a second year for first-generation students. For non-first-generation students, higher PGPA positively influenced the likelihood of retention, whereas being white versus African American lowered the likelihood of retention. A multiple linear regression was used to predict first-year cumulative grade point average. D'Amico and Dika (2013) found that the PGPA was the strongest positive predictor of first-year grade point average for both first-generation students and non-first-generation students, followed by the out-of-state residency, while being male was negatively related to retention.

D'Amico and Dika (2013) also addressed the other three factors that could present a barrier for first-generation students. The first barrier that the previous literature had related to first-generation students was financial concerns, specifically the greater financial responsibility they carried as compared with their second-generation counterparts. The researchers used family income to measure this variable. However, D'Amico and Dika (2013) found that family income was not a significant predictor for persistence or first-year grade point average. In contrast to previous research, having a declared major was not found to be a statistically significant predictor to earning a degree. In order to measure the challenge of social and academic

integration in college, the researchers used the students' residency status as a proxy for integration into the campus life. The researchers believed that out-of-state students would have more difficulty adjusting to the campus culture than in-state students. Interestingly, out-of-state residency was found to be a significant predictor of first-generation student attrition. Although, it was not a factor for second-generation students. This finding led the researchers to believe that having family with prior college experience would help an out-of-state student integrate more smoothly into the social and academic environment of a campus. This outcome also supported the previous research noted by Soria and Stebleton (2012) regarding the benefits of social capital. In order to increase retention, D'Amico and Dika (2013) recommended that institutions could use the data available to them at the time of admission and make intentional interventions to help increase student engagement as well as their overall retention, specifically with first-generation college students.

Under-represented Students

As Tinto (2006) mentioned, the landscape of higher education has changed significantly over the past forty years, specifically regarding student enrollment. Universities and colleges now have students from a number of different backgrounds. The 1970s brought significant changes to university admission criteria, which led to an increase of students who had previously been excluded from higher education (Li & Carroll, 2007; Saunders & Romm, 2008; Tinto, 2006). As a result of these changes, campuses had a number of students who enrolled without the skills to be successful in college. Many of these students struggled with the transition into the university setting.

As the United States becomes more racially and ethnically diverse, many institutions are prioritizing the need to improve minority student participation and postsecondary success (Li &

Carroll, 2007; Palmer, Maramba, & Holmes, 2011). According to Li and Carroll (2007), minority undergraduate enrollment increased from 1.9 to 4.7 million between 1984 and 2004. This growth rate increased the proportion of enrollment of black, Hispanic, Asian, and American Indian students from 18% to 32% during that time period. Simultaneously, minority-serving institutions (MSIs) increased from 414 in 1984 to 1,254 campuses in 2004. MSIs represented almost one-third (32%) of all degree-granting Title IV institutions. Additionally, graduation rates for MSIs differed significantly from non-MSIs. Overall, among 4-year degree-granting institutions in 2004, MSIs had a 6-year graduation rate of 41%. This figure is especially troubling when compared to non-MSIs' 6-year graduation rate of 54% in that same year (Li & Carroll, 2007). These distinguishing characteristics have led to a number of studies in the retention literature that address the needs of these increasing student populations.

As noted earlier, one factor that had a positive influence on student retention and persistence was student engagement or student involvement (Astin, 1993; Pascarella & Terenzini, 1991; Pike & Kuh 2005a; Tinto, 2006). A beneficial outcome of student involvement is that it provides students with a *sense of belonging* (O'Keeffe, 2013; Swail, Mullen, Gardner, & Reed, 2008). A sense of belonging is one characteristic that many campuses strive for when trying to address their retention needs. This sense of connection can develop if a student has a relationship with only one key person on the campus. This relationship can significantly impact whether the student will remain enrolled or depart from the college (O'Keeffe, 2013; Tinto, 2006). Further, Schuh and Lavery (1983) stated that campus organizations not only provide a sense of belonging or connection for students, they also help students prepare for the realities of civil, political, and social life beyond their college experience. In contrast to the literature that has demonstrated a positive connection with involvement in campus organizations with an

increase in student retention, there are numerous studies where minority students have expressed that traditional campus organizations tend to be exclusive and insensitive to their needs. As predominantly white institutions (PWIs) became more diverse, minority students were feeling marginalized, especially when it came to traditional campus organizations (Sutton & Kimbrough, 2001).

In response to these campus developments, Sutton and Kimbrough (2001) conducted a regional quantitative study where they examined the trends of black student involvement within traditional campus organizations at both historically black colleges and universities (HBCUs) and PWIs in seven southern states. As they prepared for their study, Sutton and Kimbrough (2001) found numerous comparisons throughout the literature. First, the researchers discovered that multicultural organizations developed from the civil rights movement in the 1960s and early 1970s because of the African American students' dissatisfaction with the limited cultural curricula and activities at PWIs. With the movement in the 1980s to address the social and academic concerns of minority students, membership in the multicultural organizations leveled off (Sutton & Kimbrough, 2001). Regardless of the plateau with membership, African American students continued their involvement in these types of campus organizations because their activities nurtured their sense of *mattering*. According to Sutton and Kimbrough (2001), *mattering* is defined as "...a concept that implies that others depend upon us, are interested in us, are concerned with our fate, or experience us as an ego extension which exercises a powerful influence on our actions" (pp. 31-32). Because African American students were continuously exposed to real and superficial injustices, they often perceived white students on their campus as insincere rather than showing a genuine concern. Thus, minority students perceived that involvement in multicultural organizations provided more opportunities to share and expand

their leadership skills and talents with the African American community. These types of sentiments continue to influence the trends in black student involvement within multicultural organizations (Sutton & Kimbrough, 2001).

Sutton and Kimbrough (2001) also found that the institutional environment does not necessarily influence student involvement or educational gains. They reported that black students utilized campus facilities more frequently and participated in clubs and organizations more than white students regardless of attending a predominantly black or predominantly white institution. A presumption was made that off-campus options were more readily available for white students than for black students. Finally, Sutton and Kimbrough (2001) learned that black student involvement experiences can also be influenced by the institutional type. The researchers discovered that black men on predominantly white campuses suffer developmentally, when compared with their peers at black institutions, where both intellectual and interpersonal student development were promoted. The perception was that the more homogenous the campus was, the more likely black students would benefit. Overall, black institutions tended to promote student development, both intellectually and interpersonally.

While the findings mentioned above provided a comparison based on campus environment, Sutton and Kimbrough (2001) designed a quantitative study from seven southern states that would provide a clearer image of the organizational involvement trends of black students from the early part of the twenty-first century. To conduct the study, the researchers utilized the Student Involvement and Leadership Scale, which measures student involvement in a number of types of organizations both on and off campus. Participants of the study were recruited from members of a national student affairs professional association, of which the majority served in the areas of student activities and Greek life. Each participant was provided

100 surveys to distribute to 50 black students who were members of Greek letter organizations and to 50 black students who were non-Greek. Data were collected over a two-week time period. A total of 989 surveys were distributed to black students at both historically black and traditionally white institutions in seven southern states. Participation was limited to students who were at least of the sophomore standing to guarantee that students had sufficient opportunity to establish an involvement pattern. A total of 405 students completed and returned the survey for a 41% return rate. From that group, 96% of the surveys were usable.

From the results of this study, Sutton and Kimbrough (2001) reported that the majority of black students ($n = 334$, 85%) considered themselves as leaders. In contrast, those students holding a formal position or office was much smaller ($n = 190$, 49.5%). When considering the types of campus organizations black students were involved in, only 17% ($n = 66$) were active in student government or served as orientation leaders or ambassadors. Furthermore, 11% ($n = 43$) served as resident assistants, while only 10% ($n = 39$) participated in residence hall government organizations. According to the researchers, these results demonstrated that minority student organizations remained the primary option for campus involvement for black students. The researchers also reported a distinction between black student involvement at predominantly white institutions as compared to black student involvement at predominantly black institutions. For example, students attending predominantly white institutions were more active in black student groups. Students attending predominantly black institutions were more likely to be involved in student government, as well as orientation leaders. However, Sutton and Kimbrough (2001) indicated that despite racial and cultural insensitivity often found at predominantly white institutions, black students were persisting socially and were participating in both multicultural and traditional campus organizations.

In response to their research, Sutton and Kimbrough (2001) praised student affairs practitioners for the progress in the past thirty years of black student involvement within traditional campus organizations. However, efforts must continue to be made to help increase black student involvement within campus organizations that develop and influence policies such as student government. The researchers expressed that the more black students can experience change within the system, the more they will perceive student government and other traditional campus organizations as relevant opportunities to the college experience. The researchers also noted that efforts by student affairs staff to include minority students as paraprofessionals suggested that the extracurricular involvement is increasing at predominantly white institutions and should continue. Finally, Sutton and Kimbrough (2001) recommended that advisors of multicultural organizations utilize the groups to be valuable conduits for minority students' future involvement within traditional campus organizations. However, they should not limit the organization to solely social activities and programs. It was critical that black students see these groups as components of the learning and developmental environment. If campuses can achieve this goal, then students who participate in campus organizations would benefit both socially and intellectually, regardless of ethnicity. As such, retention would likely increase as a result of enhanced student involvement.

In a related study, Palmer, Maramba, and Holmes (2011) reported that many colleges and universities continue to struggle with the retention and persistence of minority students (e.g., black and Hispanic students). Several of these challenges were tied very closely to the administrators of PWIs. According to the researchers, minority students attending PWIs, often experienced alienation and unreceptive campus environments. They frequently had strained relationships with white faculty, which had a strong impact on the lack of mentoring

relationships the minority students were able to build on campus. In addition, minority students experienced racism, discrimination, perceived the curriculum as culturally exclusive, and had few, if any support services (Palmer et al., 2011; Sutton & Kimbrough, 2001).

Since PWIs continued to be challenged with the retention of minority students, Palmer et al. (2011) conducted a qualitative study at a public, mid-size, research PWI, located in a small-town in the northeast region of the United States to identify the factors that promote academic success of minority students. In the fall semester of 2008, 12,000 students were enrolled. Forty-five percent of the students were white, 13% were Asian, 6% were black, 7% were Hispanic, and 22% were racially/ethnically unknown. Six-year graduation rates consisted of 81% white students, 80.6% Asian students, 72.1% black students, 70.7% Latina/o students, and 80.6% racially/ethnically unknown students.

To investigate the academic and social experiences of the students, Palmer et al. (2011) utilized in-depth face-to-face interviews along with a short open-ended questionnaire. Assistance was provided from the student affairs staff and minority graduate assistants at the university to recruit participants for the study. The study's sample consisted of 19 junior and senior minority students who had a 2.5 or above grade point average. All of the participants began their college careers as freshmen at the institution. The study included 14 women and five men. Eleven of the participants identified as black, four as Hispanic, two as Asian Americans, one as Pakistani, and one student chose not to identify with any racial/ethnic group. The researchers presented five open-ended questions. Additionally, the researchers conducted follow-up phone interviews with 12 of the participants, which lasted approximately 25 minutes. The phone interviews were conducted after reviewing field notes and listening to the audiotapes.

Participants were asked to elaborate on themes discussed or clarify issues that were mentioned during the interview.

To analyze the data, Palmer et al. (2011) used constant comparative analysis to identify recurring or unique topics. Through their analysis, the researchers found three themes that emerged from the interviews. The first theme focused on the impact student involvement had on the participants' academic success. Interestingly, many of them specifically noted their engagement in minority organizations. The second theme emphasized the relationships that students had with faculty and its influence on creating a supportive environment, which the researchers noted the findings were in contrast to much of the previous research. The third theme related to the relationship between participants' peers and success. The participants noted that not only were their friends supportive, many also encouraged accountability and often functioned as parental figures.

As a result of their findings, Palmer et al. (2011) addressed several initiatives that campus administrators could provide to assist minority students in being retained as well as being academically successful. The first recommendation included the impact minority student organizations can have on providing a supportive campus environment for minority students. However, they warned campus administrators to not assume that minority students are only interested in minority organizations. It was essential that practitioners recognize the value of students' cultural backgrounds while being aware of individual differences. Even though the participants expressed interests in minority student organizations, they also realized the benefits of building cross-cultural relationships. Palmer et al. (2011) recommended that both student affairs professionals, as well as faculty, should encourage students to interact and develop relationships with others who differ racially and ethnically. Building these relationships would

not only help students succeed academically, it would also help them be more effective in a global economy. Finally, participants in the study expressed the significant influence peer support had on their academic success. The researchers encouraged institutions to provide tutoring services that could promote peer academic support. Peer study groups could not only assist with academic success, it may also lead to peer social support. This research provided support for administrators at PWIs to identify a number of services and classroom opportunities that would not only help promote academic success for minority students, but could also provide a more receptive environment for minority students and allow them to feel a better sense of belonging which hopefully would lead to increased retention, as well as more positive graduation rates for their minority student populations attending PWIs.

Institutional Characteristics

As noted earlier, the initial research in retention lacked complexity and detail. It was also very limited because it drew mostly from large residential universities and students from majority backgrounds (Tinto, 2006). Since retention researchers have a renewed appreciation for the institutional setting, it is important to consider what retention literature is available that specifically addresses the influence of institutional characteristics with the factors that can impact student engagement and ultimately student retention and improved graduation rates. The institutional characteristics may play a significant factor on the external forces of a student, as well as the role class involvement plays on a student's likelihood to remain enrolled (Pascarella & Terenzini, 2005; Terenzini et al., 1996; Tinto, 2006).

Institutional Factors Influencing Retention

In an attempt to identify institutional characteristics that may improve student retention rates, Marsh (2014) conducted a national study on four-year colleges and universities in an effort

to provide administrators assistance with institutional planning, specifically related to their retention strategies. To prepare for this research, Marsh (2014) utilized two theoretical models. The first was Astin's input-environment-output (I-E-O) model. The I-E-O model suggests that the outcomes of student retention or institutional effectiveness are related not only to the characteristics a student possesses but also to the environment the educational institution provides (Astin, 1993; Marsh, 2014; Renn & Reason, 2013). In addition, Marsh (2014) also utilized Pascarella's General Causal Model. Pascarella's model includes the influence of student input characteristics, the structural characteristics of the institution, the institutional environment, along with the representatives of institutional socialization including peer students and interactions with the faculty. The basic premise of this model guides the direction to the selection and order of the institutional variables utilized within Marsh's study.

According to Marsh (2014), the risk of departure is the greatest during the first year of college (Keup & Barefoot, 2005; Tinto, 2006; Upcraft et al., 2005). Therefore, the first- to second-year retention could be the greatest contributing factor to an institution's graduation rate. With the passage of the Student Right-to-Know and Campus Security Act (1990), institutions must report retention and graduation rates to students and parents, as well as high school counselors, so the performance of campuses could be compared (Marsh, 2014). If the retention data present a decrease in persistence or graduation rates, it could have a negative influence on the institution's stakeholders such as legislators, parents, and alumni (Lau, 2003; Marsh, 2014). This type of reporting process encourages a direct comparison of very different institutions. For many in higher education, this type of appraisal may seem like a very unfair comparison especially if their admitted students have different academic skills and backgrounds. As Goenner and Snaith (2004) noted, it is too one-dimensional to only consider the characteristics

and background of the student, when actually, the probability of the same student persisting to graduation varies based on the institution in which he/she enrolls.

As stated by Marsh (2014), the retention literature has identified a number of student-related factors that may influence whether a student will persist or not. These include academic ability, race and gender, as well as ethnicity, social class, attitudes, values, and pre-college academic abilities, among others (Lau, 2003; Kuh et al., 2008; Marsh, 2014; Pascarella & Terenzini, 2005). There are also institutional factors that can influence the retention and graduation rates. Unfortunately, institutional factors are not as obvious as the student factors are on retention and student success. Campuses have certain fixed characteristics, such as size, selectivity, organizational structure, financial context, and location (Marsh, 2014; Pike & Kuh, 2005a). There are also institutional commitments, which are not necessarily fixed, such as financial support and resources, academic support provided by the institution, and the expectations and interactions between students and faculty, administrators, and other students. These resources and relationship changes can have a significant influence on learning and engagement, which can seriously effect retention and graduation rates (Marsh, 2014).

In order to identify the institutional factors that can influence student retention and graduation rates, Marsh (2014) employed a quantitative research approach based on Astin's I-E-O conceptual model. Ultimately, the researcher's goal was to gain a better understanding of the separate and combined effects of the entering cohort's background and demographics, along with the fixed and variable institutional characteristics on one-year retention rates. Marsh (2014) proposed that this type of information would aid institutional leaders as they developed their allocation strategies, specifically in an effort to improve their retention and graduation rates.

Marsh (2014) utilized the National Center for Education Statistics (NCES) Integrated Postsecondary Education Data System's (IPEDS) surveys from the 2007-2008 academic year to identify his sample from all public four-year colleges and universities enrolling first-time entering students, awarding Baccalaureate degrees. After reviewing the information, Marsh (2014) identified 489 campuses with data required for the analysis. For this study, Marsh (2014) used five surveys from IPEDS. The first, the Institutional Characteristics survey included general institutional characteristics such as location, control, affiliation, pricing, admission data, Carnegie classification, and accreditation. The Human Resources survey provided a number of data elements related to faculty and staff, including faculty employment status, tenure, and salary information. The third assessment was the Fall Enrollment survey, which included student demographic data and student retention rates. The Financial Statistics survey included the institution's financial data such as revenues and expenditures. Finally, the Student Financial Aid survey presented data on financial aid received by each institution's entering student cohort. All the data were collected in the aggregate, at the institutional level. Therefore, no specific student information was collected or analyzed.

In order to achieve the researcher's goal, Marsh (2014) determined that the dependent variable was the extent of institutional success as measured by the likelihood of the first-time, full-time cohort to return to the same college for the second year. Thus, the cohort was defined by the IPEDS Enrollment Survey as first-time, full-time, degree-seeking students entering the fall 2007 semester who returned to the same institution for the fall 2008 semester. This specific measure was used as the dependent variable because of the significant value placed upon first-year retention and its role in accountability for funding allocations in some states. Furthermore,

retaining a student past the first year, has a significant influence on whether or not the institution will graduate the student (Marsh, 2014).

Independent variables were selected because of their value in prior retention research, as well as the causal model was determined to be the best fit for this particular study (Marsh, 2014). In addition, the sequencing of the variables in the regression analysis was based on both Astin and Pascarella's models. The variables were distributed across five categories, including: the student input variables (control variables), the bridge environmental variables, institutional structural characteristics, institutional financial characteristics, and faculty interaction characteristics. Marsh (2014) referred to the five categories as *blocks* and they were entered into the regression analysis in the same order as noted above.

Marsh (2014) utilized the hierarchical multiple regression model to assess the additional impact on first-year retention of institutional characteristics after controlling for student input characteristics. This design allowed the researcher to identify the independent influence of the environmental variables on retention rates. The model also allowed the researcher to measure the additional significance of subsequent blocks of variables as they were entered into the analysis, after controlling for the set of variables entered in the previous blocks. This method allowed the researcher to measure the relative amount of variance at each specific step. Through this process, Marsh (2014) was able to determine that all five blocks had independent, substantial influences on the first-year retention rates of the colleges and universities included in the sample, with institutional characteristics having the greatest effect beyond the student input characteristics. Marsh (2014) expressed a strong interest in the institutional financial characteristics block, as well as the faculty interaction block because they both were assumed that campus administrators could manipulate them. Although the financial characteristics block

did demonstrate statistically significant changes in variance, it was at a lower level than the student input, bridge environmental, and institutional structural variables. The faculty interaction variables were not found to be statistically significant.

Even though the findings of this study demonstrate that the characteristics of student cohorts have the greatest influence on retention, institutional characteristics are also an important factor with university and college retention rates. Marsh (2014) concluded that the environment, or structure and workings of the institution has a statistically significant effect on the success of a student as measured by the first-year retention rate. Other conclusions from the study demonstrate that Astin's I-E-O model is a suitable framework when considering the causal factors that relate to student retention rates at public institutions. Marsh (2014) also concluded that institutional characteristics do play a significant role in retention. Even after controlling for student input characteristics and institutional type, the rate of institutional retention varies. Therefore, the study demonstrated that institutional expenditures influence student retention rates at four-year public institutions. Marsh (2014) also acknowledged that utilizing the IPEDS survey data provided a robust resource. Since participation in IPEDS is a federal requirement in order to participate in federal financial aid programs, it guarantees that the data are available across institutional types. Therefore, similar studies could easily be replicated in the future. Thus, this type of research could be beneficial to administrators at a multitude of institutional types, especially to help benefit an institution's retention and graduation goals.

Living and Learning Communities

The engagement and retention literature is full of empirical research that demonstrates the positive influence that on campus living has for student persistence and development (Chickering & Reisser, 1993; Pascarella & Terenzini, 2005; Renn & Reason, 2013). On campus living

provides an increased opportunity for intellectual, academic, and social engagement. Residential students are much more likely than commuter students to participate in extracurricular activities, have a more positive perception of the campus social climate, have greater satisfaction with their overall college experience, report more personal growth and development, and engage more frequently with both peers and faculty members which typically have a positive influence on student persistence especially for first- to second-year retention (Pascarella & Terenzini, 2005). According to Renn and Reason (2013), on-campus living has the maximum influence on student retention when the campus environment facilitates and supports educationally purposeful activities (Kuh, Kinzie, Schuh, Whitt, & Associates, 2010).

One of the high impact activities commonly addressed in the engagement literature includes living and learning communities (Pascarella & Terenzini, 2005; Renn & Reason, 2013). There are a number of empirical studies that demonstrate the positive benefits living and learning communities have with helping first-year students' transition into college. To emphasize the value of living and learning communities Inkelas, Daver, Vogt, and Leonard (2007) conducted a national study to examine the role living and learning programs had, specifically on influencing first-generation students' perceived academic and social transition to college.

Similar to the other research on first-generation college students, Inkelas et al. (2007) defined this student population as "...those for whom both parents or guardians have a high school education or less and did not begin a postsecondary degree" (p. 404). The researchers also defined living and learning programs as residential communities with a shared academic or thematic emphasis. These special communities were designed to help improve undergraduate students' learning by helping them strengthen faculty and peer interaction, increase opportunities for co-curricular activities, and to provide a socially and academically supportive residential

living environment. Living and learning communities can be very diverse, yet they share a number of common characteristics. Most living and learning communities are programs where students live together in the same on-campus residence location, share academic experiences, are exposed to resources provided directly to them in the residence hall, and participate in residence hall activities designed around the specific theme of the community (Inkelas et al., 2007).

Most of the literature related to living and learning communities has been based on single-institution studies. In their own previous research, Inkelas et al. (2007) found that living and learning communities provided students with a smoother academic transition during their first year when compared with residential students not residing in a living and learning community. However, they failed to specifically examine first-generation students. Therefore, they decided it was important to investigate the transitional issues facing first-generation college students utilizing a multi-institutional sample.

In the spring 2004, the National Study of Living-Learning Programs (NSLLP) collected data from 34 postsecondary institutions in 24 states and the District of Columbia (Inkelas et al., 2007). The study yielded an overall response rate of 33.3%, which included 651 students who were participating in living and learning programs and 684 comparison sample students who were first-generation living in a traditional residence hall setting (TRH). From the sample, 61% were first-year students and 21% were sophomores. The NSLLP participants were primarily from public research and flagship universities. Data were collected between late-January and mid-March. Participants were sent an email inviting them to participate in an internet survey. The survey measured several constructs including a number of student background characteristics, involvement in several types of college environments, and multiple self-reported student outcomes. Additional items assessed by the survey included the transition to college,

perceived intellectual abilities and self-confidence, alcohol use and behaviors, sense of civic engagement, diversity appreciation, and satisfaction.

To analyze the data, Inkelas et al. (2007) utilized chi-square distributions to examine the differences in background characteristics between first generation students in living and learning programs with first-generation students living in a traditional residence hall environment. The researchers were not able to find any statistically significant differences between the two student groups regarding gender, race/ethnicity, generation status, or family annual income. The researchers also utilized ANCOVA analyses to determine if first-generation students in living and learning programs were more likely to perceive an easier academic and social integration than first-generation students living in a TRH. Inkelas et al. (2007) were able to demonstrate that first-generation students participating in living and learning environments were more likely to perceive an easier academic and social transition to college than first-generation students living in TRHs. After controlling for pre-college estimates of confidence in future college experiences, first-generation students in living and learning communities had a statistically significant higher mean score on their perception of ease for their academic as well as their social transition to college.

From these results, Inkelas et al. (2007) found that living and learning environments appear to help first-generation students transition smoothly to the college campus. Thus, the researchers strongly recommend that campus administrators explore ways to specifically target first-generation students to participate in living and learning communities. These experiences could have a positive influence on first-generation college students' involvement with informal peer contact, as well as help them engage more in co-curricular activities that would enhance their college education.

Off-Campus Living

Although many institutions describe themselves as residential, when enrollment numbers are analyzed the reality presents many institutions as commuter campuses. According to the National Clearinghouse for Commuter Programs (NCCP) and the Council for the Advancement of Standards in Higher Education (CAS), 80% of U.S. college students today are identified as commuter students (Jacoby & Garland, 2004). This student population is very diverse and includes full-time students of traditional age who live with their parents, students who live in rental housing close to the institution, adults with careers, and student parents whose lives traverse with one or more of the other traits. The National Survey of Student Engagement (NSSE) further describes this student population by *walking* vs. *driving* commuters. Jacoby and Garland (2004) emphasized that regardless of where commuter students live or what type of campus they are enrolled at, the commuter student has a significantly different educational experience. Many commuter students are considered disengaged and uninterested in campus life. Based on previous studies, Jacoby and Garland (2004) reported that the higher education culture believes that the same initiatives that institutions apply to engage traditional residential students should also work for commuter students. Commuter students have the same educational goals, however, they often have competing responsibilities such as family, work, and childcare. The role of a student is only one of multiple identities, including employees, wage workers, opinion leaders or followers, artists, friends, children, parents, partners, or spouses.

Apparently, commuter students are very diverse. However, according to Jacoby and Garland (2004), they have a common core of needs and concerns that can influence their likelihood for success. The first common need is related to transportation. This need expands to issues related to parking, traffic, fixed transportation schedules, inclement weather,

transportation costs, etc. These issues influence the commuter students' time and energy. In response, many commuter students enroll in back-to-back classes. As a result, they have little free time to spend on campus. Another core need for commuter students is the ability to integrate support networks. Where the supportive campus environment is noted as one of the effective educational practices in the NSSE, commuter students most often find their support networks off campus including parents, partners, children, siblings, employers, co-workers, and friends in the community. These supports often compete with a commuter students' educational responsibilities. Next, commuter students rarely experience a sense of belonging or feeling wanted by the institution. Few campuses provide any lockers or lounges that allow commuter students the ability to physically connect to the institution. With these competing needs, Jacoby and Garland (2004) emphasized the importance of how institutional policies and practices can influence how students spend their time and how much energy they may dedicate to their educational experience.

Jacoby and Garland (2004) shared two models that would be very beneficial for institutions to consider when they are addressing their engagement and retention goals, especially when considering commuter students. The first model is related to student engagement. Much of the engagement literature denotes that the more time and effort students invest in their learning and the more energy or engagement they apply to their own education, the more likely they experience achievement, growth, satisfaction with their college experience, and as a result will more likely persist to achieving their educational goals. According to Jacoby and Garland (2004), student engagement includes educationally purposeful activities such as reading and writing, preparing for class, collaborating with peers, problem-solving tasks, and community service.

When Jacoby and Garland (2004) reviewed the NSSE data, they found that commuter students were very different from on-campus students. The greatest differences existed with student interactions with faculty members and enriching educational experiences. The NSSE results also indicated that even though commuter students' time was limited because of work and family issues, these students put forth just as much energy as residential students in areas related to classroom activities. Therefore, administrators should design curricular and co-curricular instruments that specifically engage commuter students in the learning process.

The other model Jacoby and Garland (2004) shared was related to the social and environmental surroundings of the college and university campus and its influence on the student learning process. The researchers reported that some environments can stimulate learning, while others can stifle growth if it is perceived to be unwelcoming, intimidating, or threatening. The *physical* model influences the environment through buildings, furnishings, equipment, landscape, and other physical resources that either inspire or restrict human engagement. The *human aggregate* model mirrors the combined social norm, customs, reputation, traditions, and demographic make-up. The *organizational* model emphasizes the priorities and purposes of the organization that encourages or limits positive interactions within the environment, such as faculty reward systems, codes of student conduct, and institutional goals. The *perceptual* model allows expectations, assumptions, and past experiences to contribute to the subjective understanding of the environment. Each of these environmental components affects the performance and attitudes of individual students. Unfortunately, few campuses offer environmental accommodations that meet commuter students' needs, nor make them feel as full members of the campus community.

From their extensive analysis and interactions with NCCP members, Jacoby and Gardner (2004) recommended a number of strategies that would help promote commuter student success. Because the first semester can be particularly challenging for commuter students, Jacoby and Gardner (2004) recommend institutions design an *entry center* that combines a number of functions such as admissions, orientations, and registration to assist the commuter student with *moving in*. They strongly encouraged institutions to assign a single staff member to assist each new student from pre-admission through the end of the first semester, including providing information for housing, transportation, child care and other services, specifically how commuter students are engaged in campus life. In addition, Jacoby and Garland (2004) suggested that financial aid officers provide commuter students with realistic costs for education, but also for living expenses including rent, transportation, child care, and food. It would also be helpful to explain the benefits of on-campus employment, in order to avoid the *three-point* commute between home, campus, and work. The researchers also addressed the value of new student orientation, as well as conducting a family orientation. This type of programming would be designed to address the plethora of family systems and situations.

To assist the commuter student with *moving through*, Jacoby and Garland (2004) recommended institutions help students prepare for the unexpected opportunities, including work and family issues, job loss or promotion, as well as new babies or elder care. Jacoby and Garland (2004) presented six recommendations to help commuter students feel engaged in the institution. The first engagement practice would be to provide learning communities. As noted above, learning communities build an environment that specifically stimulates academic and social engagement. This type of curricular initiative works very well for commuter students. Next, Jacoby and Garland (2004) recommended changes to individual courses that could be

designed to engage the variety of commuter students. For example, a specific class could be scheduled for Mondays and Wednesdays at 11:00 a.m. Students enrolling in this section could be advised to not schedule a noon class or Fridays could be reserved to allow the students to meet for study groups, have lunch, or relax together. Jacoby and Garland (2004) also strongly recommended that administrators get creative with class scheduling to help meet the needs of commuter students. Along with the traditional format of day and evening classes, campuses could include *twilight classes* (4:00 p.m. to 6:00 p.m.) or *dawning classes* (6:00 a.m. to 8:00 a.m.) that meet once or twice a week rather than the traditional schedule. Distance learning may also be a good option, but not all commuter students may benefit from this delivery method. Co-curricular programs add richness to the campus experience. Jacoby and Garland (2004) advised administrators to examine policies and practices related to co-curricular programming to remove any barriers that would prevent commuter students from participating. Events should be offered at a variety of times, as well as provide a range of activities including social, cultural, educational, and recreational sports programs. Promotion of events should be shared with sufficient time for commuter students to rearrange family, work, and transportation schedules. The fifth recommendation includes the use of information technology (Jacoby & Garland, 2004). Listservs, web-based news, or chat groups can provide a number of ways for commuter students to develop affiliations with their classmates. These virtual communities can be based on neighborhood or zip code, similar to the same way residence hall students build communities. The final recommendation for engaging commuter students as they move through is for the campus to provide a mentor or advisor who regularly monitors the students' progress. By frequently assessing their progress, students can be encouraged to adjust their educational plans

as needed. Email mentoring is also highly recommended, especially since commuter students may have difficulty arranging a face-to-face meeting.

It is also just as meaningful to engage commuter students with the process of *moving on* (Jacoby & Garland, 2004). Similar to traditional students, commuter students need support to effectively manage life after degree completion. Jacoby and Garland (2004) presented three recommendations to assist commuter students with the transition to life after college. The researchers reported that multiple campuses now provide students with capstone courses that helps students appreciate the college experience in its entirety. These capstone experiences come in a variety of forms including internships, research projects, service-learning, as well as forms of artistic expression such as films, poetry, or performance. Jacoby and Garland (2004) warned that the capstone experience should be developmentally appropriate. In other words, an internship will help a traditional age student transition smoothly into the world-of-work, whereas the same type of internship may not be as beneficial for a non-traditional student. The second recommendation that Jacoby and Garland (2004) made to help commuter students is in reference to career guidance. Career counselors need to be prepared to help students accurately represent their significant work experience in their resumes, as well as their new knowledge and experience they have gained in their discipline. The final recommendation to help students with moving on is to celebrate their success. Jacoby and Garland (2004) reported that celebrating not only a student's academic success, but also the accomplishment of other educational and personal goals is critical in helping them smoothly transition into life after college. Also, it is important not to marginalize students who did not graduate in the traditional four-year period. Furthermore, it is important to help students make the transition to alumni status. Contacting students who are close to graduating reminds them of their significant role in the campus

community, as well as encourages the sense of belonging. Thus, regardless of age, family status, or length of time to degree, recognizing graduating seniors is critical to this life transition. Overall, Jacoby and Garland (2004) emphasized as institutions develop and adapt their policies, practices, and programs to meet the accountability expectations, it is important for administrators to consider these strategies for commuter students. Strategically helping commuter students stay engaged will likely result in increasing their retention and graduation rates.

Chapter Summary

This review of the literature on student engagement and retention provides a solid foundation to examine student behavior differences between first-year students who persist with first-year students who do not persist to the second year. Keup and Barefoot (2005) found that participation in first-year seminars encouraged students to participate in a number of educationally purposeful activities. Kuh et al. (2008) found that students' background characteristics and pre-college behaviors have a positive influence on student persistence. Further, students who engaged in educationally purposeful activities had a minor but statistically significant effect on their first-year grades. Other activities, such as learning communities and student-faculty interaction also have a positive influence on student engagement and persistence (Lillis, 2011; Umbach & Wawrzynski, 2005; Ward & Commander, 2011).

Student characteristics also play a factor in student engagement and persistence. First-generation status can significantly influence whether a student will persist. D'Amico and Dika (2013) demonstrated that the campus environment can have a significant influence on whether first-generation students will be successful. Race/ethnicity also influences student success. Programs that help students get engaged will have a positive impact on their sense of belonging and as a result positively influence the likelihood of persisting.

Additionally, institutional factors can have an impact on student success. Even though student characteristics have the greatest influence on retention, institutional characteristics also play an important role in student success (Marsh, 2014). How an institution chooses to spend its resources is a significant factor with student engagement and retention. Programs such as living and learning communities, as well as practices designed to meet the needs of the commuter student population can have a positive influence on student engagement and retention. Thus, the literature demonstrates that an institution, through their policies, practices, and programs, can have a statistically significant effect on student engagement and persistence.

Chapter III

METHODS

Introduction

As the student retention literature continues to evolve, the research is focusing on the relationship between student engagement and outcomes such as grades and persistence. The research is also beginning to place more emphasis on student characteristics including gender, race/ethnicity, and first-generation college student status, and how they play a factor on student success (Kuh et al., 2008). Therefore, the purpose of conducting this study was to examine the differences with student-faculty interaction, experiences with the campus environment, and engagement in collaborative learning, as measured by the National Survey of Student Engagement (NSSE), between first-year students who persisted and first-year students who did not persist to the second year at a mid-size, doctorate-granting, public, research university in the mid-south. The study also examined whether or not the differences in the three engagement behaviors between persisters and non-persisters varied by gender, race/ethnicity, and first-generation college student status. This chapter explains the research design and its appropriateness for this type of study, the sample, data collection methods, and the analysis process that was used to address the purpose of the study.

More specifically, this study examined the following research questions:

1. What differences existed in the level of student-faculty interaction between first-year students who persisted and first-year students who did not persist to their second year?
 - a. What gender differences existed in the level of student-faculty interaction between first-year students who persisted and first-year students who did not persist?
 - b. What race/ethnicity differences existed in the level of student-faculty interaction

- between first-year students who persisted and first-year students who did not persist?
- c. What differences existed in the level of student-faculty interaction between first-generation students who persisted and first-generation students who did not persist?
2. What differences existed in experiences with the campus environment between first-year students who persisted and first-year students who did not persist to the second year?
 - a. What gender differences existed in experiences with the campus environment between first-year students who persisted and first-year students who did not persist?
 - b. What race/ethnicity differences existed in experiences with the campus environment between first-year students who persisted and first-year students who did not persist?
 - c. What differences existed in experiences with the campus environment between first-generation students who persisted and first-generation students who did not persist?
 3. What differences existed with engagement in collaborative learning between first-year students who persisted and first-year students who did not persist to the second year?
 - a. What gender differences existed with engagement in collaborative learning between first-year students who persisted and first-year students who did not persist?
 - b. What race/ethnicity differences existed with engagement in collaborative learning between first-year students who persisted and first-year students who did not persist?
 - c. What differences existed with engagement in collaborative learning between first-generation students who persisted and first-generation students who did not persist?

Research Design

This quantitative study utilized a non-experimental retrospective, explanatory research design to compare differences in behaviors and characteristics of students who persisted with students who did not persist to the second year at a mid-size, doctorate-granting, public, research

university in the mid-south. Non-experimental studies include research where no independent variables are manipulated and random assignments of participants are not possible (Johnson, 2001). Retrospective analysis requires the researcher to look back in time to examine a number of independent variables which may help explain differences between groups (Johnson, 2001). The retrospective, explanatory research design was selected because no independent variables were manipulated and the primary objective of the study was to help explain the variables that influenced the differences between students who persisted and students who did not persist to the second year. For this particular study, the variables that were examined consisted of three student behaviors, including student-faculty interaction, experiences with the campus environment, and engagement in collaborative learning, and three student characteristics consisting of gender, race/ethnicity, and first-generation college student status. This examination helped to determine if there were behavioral differences between students who persisted and students who did not persist to the second year, as well as student characteristic differences between the two groups.

Sample

The target population for this study was identified from the Office of Institutional Research and Assessment at a mid-size, doctorate-granting, public, research university, in the mid-south. The fall 2015 enrollment for the institution included 26,754 students, of which 22,159 were undergraduates. First-year students, as defined by the NSSE administrators, consisted of all first-year degree-seeking students including adult learners, full-time and part-time students, commuters and residential students, distance education students, and returning students as long as they met first-year credit hour requirements (less than 30 hours). This enrollment consisted of 5,135 students. The class was comprised of 2,368 (46.11%) male

students and 2,767 (53.89%) female students. Race/ethnicity consisted of 3,975 (77.41%) white students and 1,160 (22.59%) students of color.

The target population for this study was identified from the defined first-year degree-seeking students who returned for the spring 2016 semester to the same institution, which included 4,710 students. The sample was comprised of 2,160 (45.86%) male students and 2,550 (54.14%) female students. Race/ethnicity consisted of 3,634 (77.15%) white students and 1,076 (22.85%) students of color. Completion of the NSSE was voluntary. As such, 2,923 students from the sample did not participate in the survey. Additionally, 384 students completed only parts of the NSSE survey and one student passed away. Therefore, these students were excluded from this examination. Thus, the final sample for this study included 1,402 students who completed the entire NSSE survey with a total response rate of 29.77%.

Data Collection

Two types of data sources were used to conduct this study. The first set of data was from the first-year students who completed the National Survey of Student Engagement (NSSE) in the spring of 2016. In order to help improve the response rate, staff from the Office of Institutional Research and Assessment collaborated with staff from the Student Affairs Assessment Office, representatives from University Housing, the Associated Student Government Executive Committee, Off-Campus Student Services, and first-year seminar instructors to promote the survey. Marketing strategies for the survey included announcements in the institution's electronic news, campus video boards, as well as a variety of social media outlets. In addition, students were sent up to five electronic email messages from the university between February 16 and March 15, 2016 to encourage them to complete the survey. The messages contained individual links for students to securely login to the survey. The institution decided to use the

online version of the survey versus a paper-pencil format. Students were also able to access the survey via a smartphone. Incentives for completing the survey were determined with a focus group of students coordinated by student affairs staff members. Students who completed the survey by May 1, 2016 were automatically entered into a random drawing to win one of the following: two Apple Watches (\$399 value each), five Fitbit Charge HR Wireless Activity Wristbands (\$149 value each), 15 Visa gift cards (\$100 value each), or one of 15 student parking passes for the 2016-2017 academic year (\$94 value each). The survey period was from February 15 through June 1, 2016.

The second set of data came from the Office of Institutional Research and Assessment at the research site. This office provided the original data set of the research institution's first-year students to the NSSE Administrators. Additionally, the office revised the original sample to identify students who returned for the spring 2016 semester. This office also provided the data to determine whether the sampled students persisted or did not persist to the second year. Moreover, the university's Institutional Review Board approved this study (see Appendix).

Instrumentation

The 2016 administration of the National Survey of Student Engagement was used to examine the differences between students who persisted and students who did not persist to the second year. The NSSE has been used by institutions since 2000 to measure college quality and assess the use of effective educational practices. Beginning with 276 colleges and 63,000 randomly selected undergraduates, the NSSE has grown to more than 311,000 first-year and senior students from 557 U.S. and Canadian institutions (530 in the U.S. and 27 in Canada) that completed the survey in 2016 (NSSE, 2016a). In 2001, NSSE administrators established five institutional benchmarks for effective educational practices. According to Pike (2013), the

benchmarks included academic challenge, active and collaborative learning, student-faculty interaction, enriching educational experiences, and supportive campus environment. The benchmarks were designed around clusters of student behaviors and institutional actions that reflected good educational practices (Pike, 2013).

The NSSE is based on self-reported data. According to Pike and Kuh (2005b), the validity and integrity of these data have been comprehensively researched (Kuh, 2002). Pike and Kuh (2005b) further explained that self-reported measures are consistently valid when they include five conditions:

(a) the information requested is known to the participants; (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 the respondent to respond in socially desirable ways. (p. 192)

The NSSE is one of the most popular surveys used for assessment and institutional research (Pike, 2013). In a 2008 examination of the NSSE, Pike (2013) was able to demonstrate that the NSSE benchmarks could produce reliable measures of student engagement, even with as few as 50 students. By using multiple regression, Pike (2013) also demonstrated that the NSSE scores of institutional benchmarks were significantly related to institutional retention and graduation rates. Overall, Pike (2013) found that institutions could confidently utilize the NSSE benchmarks to measure the extent to which their first-year students are engaged in educationally purposeful activities.

In 2013, the five benchmarks were reorganized into 10 engagement indicators, which were grouped within four themes (NSSE, 2016c). The first theme explores the level of academic

challenge and includes the following engagement indicators: higher-order learning, reflective and integrative learning, learning strategies, and quantitative reasoning. The next theme emphasizes learning with peers and includes collaborative learning and discussions with diverse others. The third theme focuses on experiences with faculty and includes student-faculty interaction and effective teaching practices. The final theme measures the campus environment and includes the quality of interactions and supportive environment. Utilizing a combination of theory and empirical analysis, the engagement indicators were designed to provide institutions an opportunity to examine differences at the college, department, and program level. Over a multi-year development process, an extensive process of both quantitative and qualitative methods were used to test the validity and reliability of each of the engagement indicators (NSSE, 2016c).

According to Ary, Jacobs, Sorensen, and Walker (2014), “Validity should be viewed as a characteristic of the interpretation and use of test scores and not of the test itself” (p. 253). Through both interviews and focus groups, NSSE administrators have presented feedback that supports response process validity. A number of research articles have been presented and/or published that support content validity, construct validity, concurrent validity, as well as predictive validity for the NSSE (NSSE, 2016b). Reliability of an instrument refers to the degree of consistency or stability of the measurement (Ary et al., 2014; NSSE 2016b). As such, a researcher should be able to reproduce the data and results (NSSE 2016b). From 2008 to 2016, NSSE (2016b) has been able to demonstrate internal consistency, temporal stability and equivalence reliability measures throughout the years. Thus, the use of the NSSE survey appears to be a valid and reliable tool to examine the above research questions.

For purposes of this study, three engagement behaviors from the 2016 NSSE were examined (i.e., student-faculty interaction, campus environment, and collaborative learning). As

illustrated in Table 1, the 2016 NSSE demonstrated strong internal consistency reliability with each of the three engagement indicators used in this study. Cronbach's alpha coefficient is a good measure of reliability when there are a range of values that can be selected and when one administration of the survey is examined (Ary et al., 2014).

Table 1

NSSE 2016 Engagement Indicators Internal Consistency Statistics	
Engagement Indicator	Cronbach's alpha: First-Year Students
Student-Faculty Interaction	.83
Campus Environment	.89
Collaborative Learning	.82

Variables

Persistence Variables

This study compared the differences between students who persisted with students who did not persist to the second year. Students who persisted were identified as first-year students who initially enrolled in the fall 2015 semester at the research institution and returned for their second year to the same institution in the fall 2016 semester. Non-persisters were defined as students who initially enrolled in the fall 2015 semester, but did not return to the same institution in the fall 2016 semester. This dependent variable is a dichotomous, categorical variable because the variable is limited to two mutually exclusive groups (Ary et al., 2014). This variable was assigned a numerical value where 1=persisted to the second year and 0=did not persist to the second year.

Engagement Behavior Variables

The variables of interest for this study included three engagement behaviors as measured by the NSSE. These engagement behaviors included the level of student-faculty interaction, experiences with the campus environment, and engagement in collaborative learning. Each question in the survey used a four-point Likert-type response scale over a series of questions to measure the specific engagement behavior. Because of this format, the three engagement behaviors were considered continuous, interval variables. Interval scales are considered continuous variables where it is assumed that there is equal distance between each selection (Creswell, 2012). Furthermore, *mean scores* were used to measure each engagement behavior. According to Creswell (2012), a mean is the sum of the scores divided by the number of scores. The mean provides an average for all the scores.

Student-faculty interaction. Four questions were used to measure the construct of the level of student-faculty interaction. Students were asked how often they had completed the following in the current year: (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, and (d) discussed their academic performance with a faculty member. The responses for measuring student-faculty interaction were assigned numerical values; 4=very often, 3=often, 2=sometimes, and 1=never. The mean of the responses was calculated to measure the level of student-faculty interaction for each student.

Experiences with the campus environment. Eight questions were used to measure the construct of experiences with the campus environment. Students were asked how much the institution emphasized the following in the current year: (a) providing support to help students

succeed academically, (b) using learning support services (tutoring services, writing center, etc.), (c) encouraging contact among students from different backgrounds (social, racial/ethnic, religious, etc.), (d) providing opportunities to be involved socially, (e) providing support for their overall well-being (recreation, health care, counseling, etc.), (f) helping manage non-academic responsibilities (work, family, etc.), (g) attending campus activities and events (performing arts, athletic events, etc.), and (h) attending events that address important social, economic, or political issues. The responses for measuring experiences with the campus environment were assigned numerical values; 4=very much, 3=quite a bit, 2=some, and 1=very little. The mean of the responses was calculated to measure the construct of experiences with the campus environment for each student.

Engagement in collaborative learning. Four questions were used to measure the construct of engagement in collaborative learning. Students were asked how often they had completed the following in the current year: (a) asked another student to help understand course material, (b) explained course material to one or more students, (c) prepared for exams by discussing or working through course material with other students, and (d) worked with other students on course projects or assignments. The responses for measuring engagement in collaborative learning were assigned numerical values; 4=very often, 3=often, 2= sometimes, and 1=never. The mean of the responses was calculated to measure the construct of engagement in collaborative learning for each student.

Demographic Variables

Student characteristics including gender, race/ethnicity, and first-generation status were also examined within the three engagement behaviors to compare demographic differences of students who persisted with students who did not persist to the second year. These variables use

the nominal scale. Nominal variables are considered categorical, where the participant selects one or more categories that describes their characteristics (Creswell, 2012).

Gender. Students were asked their gender identity. They selected from: (a) man, (b) woman, (c) another gender identity, and (d) prefer not to respond. Gender was a categorical variable, where the responses were assigned numerical values; 0=preferred not to respond, 1=male, 2=female, and 3=another gender identity.

Race/ethnicity. Students were asked their racial or ethnic identification. They selected from: (a) American Indian or Alaska Native, (b) Asian, (c) black or African American, (d) Hispanic or Latino, (e) Native Hawaiian or Other Pacific Islander, (f) white, (g) other, or (h) I prefer not to respond. The race/ethnicity variable was another categorical variable. For purposes of this study, the race/ethnicity variable was recoded as a dichotomous variable and responses were assigned numerical values; 1=white and 2=students of color.

First-generation college student status. Students were asked the highest level of education completed by their parents or those who raised them to determine their first-generation college student status. Students selected from: (a) did not finish high school, (b) high school diploma/G.E.D., (c) attended college but did not complete degree, (d) associate's degree, (e) bachelor's degree, (f) master's degree, or (g) doctoral or professional degree. For purposes of this study, the first-generation college student status variable was defined as a student whose family had no parent or guardian who earned a baccalaureate degree. The first-generation college student status variable was recoded as a dichotomous, categorical variable; and responses were assigned numerical values; 1=first-generation and 2=non-first-generation.

Data Analysis

Descriptive and inferential statistics were utilized to analyze the data from this study. Descriptive statistics were used to summarize the overall trends within each of the variables. The mean, median, and standard deviations were calculated for each engagement behavior. These statistics were used to present the average scores, determine the variability within the range of scores, and clarify where one score stood as compared with another score (Creswell, 2012). Frequencies and percentages were also presented for each demographic variable.

The use of inferential statistics provides researchers the opportunity to utilize sample statistics and apply the findings to a population (Creswell, 2012). Inferential statistics does not necessarily provide proof, but the findings allow researchers to make generalizations with restricted evidence (Ary et al., 2014). The specific data analysis for each research question is explained below.

An independent samples t Test was utilized to address the three primary research questions in the study to examine the differences of the level of student-faculty interaction, experiences with the campus environment, and engagement in collaborative learning between first-year students who persisted with first-year students who did not persist to the second year. An independent samples t Test can be utilized when a researcher is making a group comparison with one independent variable and one dependent variable (Creswell, 2012). The mean score ratings that defined the level of student-faculty interaction, experiences with the campus environment, and engagement in collaborative learning were considered continuous variables. Therefore, an independent samples t Test was the best method to help determine if the means of the two groups were statistically different from one another on each of the three engagement behaviors.

Gender differences were also examined within each of the student engagement behaviors; the level of student-faculty interaction, experiences with the campus environment, and engagement in collaborative learning. From this sub-sample, each gender category was reviewed independently. First, female persisters were compared with non-persisters within each of the three engagement indicators. Next, male persisters were compared with non-persisters within each of the three engagement indicators. Finally, students who selected another gender identity were too small a sub-sample to conduct any analysis. An independent samples *t* Test was utilized within the two gender categories above to determine if the means of the two groups were statistically different from one another across the three student engagement behaviors.

Race/ethnicity differences were also examined within each of the student engagement behaviors; the level of student-faculty interaction, experiences with the campus environment, and engagement in collaborative learning. From this sub-sample, each race/ethnicity category was reviewed independently. First, students who identified as white persisters were compared with white non-persisters within each of the three engagement behaviors. Next, students who identified as students of color persisters were compared with students of color non-persisters within each of the three engagement indicators. An independent samples *t* Test was utilized within each race/ethnicity category to determine if the means of the two groups were statistically different from one another across the three student engagement behaviors.

First-generation college student status was also examined within each of the student engagement behaviors; the level of student-faculty interaction, experiences with the campus environment, and engagement in collaborative learning. First, students who identified as first-generation persisters were compared with first-generation non-persisters within each of the three engagement behaviors. Next, students who identified as non-first-generation persisters were

compared with non-first-generation non-persisters within each of the three engagement behaviors. An independent samples *t* Test was utilized to determine if the means of the two groups were statistically different from one another across the three student engagement behaviors.

Levene's Test for Equality of Variances was conducted to verify the assumption of homogeneity of variance across the groups of persisters and non-persisters (Glass & Hopkins, 1996). The test revealed that equal variances were not assumed for the student-faculty interaction variable for the overall sample. The Levene's Test also revealed that equal variances were not assumed for the sub-sample of white students with the student-faculty interaction variable. Additionally, the analysis of the non-first-generation students sub-sample revealed that equal variances were not assumed for the experiences with the campus environment variable. For the instances when the assumption of homogeneity assumption was violated, the results of the *t*-Tests with equal variances not assumed were reported.

Chapter Summary

This chapter described the methodology used to conduct the examination of the differences in engagement between students who persisted and students who did not persist to the second year. The research design was defined as a non-experimental retrospective, explanatory study. Explanatory research helped to explain the differences of the three student behaviors, including student-faculty interaction, experiences with the campus environment, and engagement in collaborative learning, as measured by the NSSE, between first-year students who persisted and first-year students who did not persist to the second year. Also methods to identify the sample, the resources to collect the data, including the instrumentation and variables were

presented. Descriptive and inferential statistics were used to determine if the differences between the two groups, persisters and non-persisters, were statistically significant.

Chapter IV

RESULTS

Introduction

Over the past 40 years, student engagement and retention have been examined more than any other area of research in higher education (Tinto, 2012). Even though researchers have learned a lot about why students choose to leave their institution, there is still much more work to be done to more fully understand what action an institution can take to help engage students into behaviors that will help them succeed (Tinto, 2012). The construct of student engagement is defined as the amount of time and energy a student places into his or her studies and other educationally purposeful activities (Astin, 1985; Kuh et al., 2006; Kuh, 2008). This chapter provides an overview of the research study, including the research design, data collection, and the data analysis. In addition, descriptive statistics are presented to summarize the trends of each of the variables. The specific research questions are presented as well as the results of the data analysis for each.

Overview of the Study

The purpose of this study was to examine differences between first-year students who persisted with first-year students who did not persist to the second year at a mid-size, doctorate-granting, public, research university in the mid-south. More specifically, the study compared the differences of three engagement behaviors, as measured by the National Survey of Student Engagement (NSSE). These behaviors included the level of student-faculty interaction, experiences with the campus environment, and engagement in collaborative learning. In addition, the study also examined whether or not the differences in the three student engagement behaviors varied by gender, race/ethnicity, and first-generation college student status.

This examination was designed to present additional support for institutions to utilize the NSSE as a meaningful tool in determining appropriate policies, programs, and practices that can have a positive influence on student engagement and persistence. The study was also intended to gain a better understanding of how differences between persisters' and non-persisters' behaviors varied by the characteristics of gender, race/ethnicity, and first-generation college student status. Finally, the study was designed to assist the research institution in making decisions related to their retention initiatives that will have a positive outcome on student engagement and their first-year persistence rates.

The study utilized a quantitative, non-experimental retrospective, explanatory research design. Data for the study were collected from two sources. The first set was taken from first-year students who completed the National Survey of Student Engagement in the spring of 2016. The second set of data came from the Office of Institutional Research and Assessment at the research institution that defined which first-year students from the fall of 2015 persisted to the fall of 2016. Both data sets were collated by the Office of Institutional Research and Assessment and presented in aggregate to the researcher in order to examine the research questions. The target population for this study included 4,710 first-year degree-seeking students who returned to the same institution for the spring semester of 2016. The final sample was established based on the number of students that completed the entire survey, which resulted in 1,402 first-year students. Descriptive statistics were used to summarize the overall trends for each variable examined in the study. In addition, a *t* Test for independent samples was used to address the three research questions and examine the differences between students who persisted with students who did not persist to the second year. The Statistical Package for the Social Sciences (SPSS) was used to conduct the analysis.

Results from Descriptive Statistics

Demographic Variables

Three student characteristic variables were examined in this study in order to compare demographic differences of students who persisted with students who did not persist to the second year. Table 2 presents the frequencies and percentages for each of the demographic characteristics for the overall sample, as well as individually for persisters and non-persisters. The first demographic variable examined was gender. From the total sample, 17 (1.2%) students preferred not to respond, 526 (37.5%) were males, 846 (60.3%) were females, and 13 (9%) expressed another gender identity. Among the persisters, 14 (1.1%) students preferred not to respond, 480 (37.6%) were males, 775 (60.6%) were females, and 9 (.7%) expressed another gender identity. From the non-persisters group, 3 (2.4%) students preferred not to respond, 46 (37.1%) were males, 71 (57.3%) were females, and 4 (3.2%) expressed another gender identity. Gender representation was similar within the total sample as well as persisters and non-persisters.

The next demographic variable examined was race/ethnicity. As illustrated in Table 2 below, in the total sample, 1,152 (82.2%) were white students, with 250 (17.8%) of the students identified as students of color. Among the persisters group, 1,058 (82.8%) were white students, while 220 (17.2%) of the students identified as students of color. From the non-persisters group, 94 (75.8%) were white students, while 30 (24.2%) of the students identified as students of color. The students of color (24.2%) made up a larger percentage of the non-persisters compared with the total sample (17.8%) and the persisters group (17.2%).

The last demographic variable examined was first-generation college student status. In the total sample, 343 (24.5%) were first-generation students, while 1,059 (75.5%) were non-first-

generation students. Similar to the total sample, among persisters, 295 (23.1%) were first-generation college students. However, first generation college students made up a larger share of non-persisters (38.7%) than the persisters (23.1%) and the total sample (24.5%).

Table 2

Demographic Variables

Variables	Total	Persisters	Non-persisters
	N=1,402	n=1,278	n=124
	Frequencies (%)		
Gender			
Preferred Not to Respond	17 (1.2)	14 (1.1)	3 (2.4)
Males	526 (37.5)	480 (37.6)	46 (37.1)
Females	846 (60.3)	775 (60.6)	71 (57.3)
Another Gender Identity	13 (.9)	9 (.7)	4 (3.2)
Race/Ethnicity			
White	1,152 (82.2)	1,058 (82.8)	94 (75.8)
Students of Color	250 (17.8)	220 (17.2)	30 (24.2)
First-Generation College Student Status			
First-Generation	343 (24.5)	295 (23.1)	48 (38.7)
Non-First-Generation	1,059 (75.5)	983 (76.9)	76 (61.3)

Engagement Behavior Variables

Three engagement behaviors, as measured by the NSSE, were the variables of interest that were examined for this study. These engagement behaviors included the level of student-

faculty interaction, experiences with the campus environment, and engagement in collaborative learning. Each question in the survey used a four-point Likert-type response scale over a series of questions to measure the specific engagement behavior. Mean scores were calculated to measure each engagement behavior.

Student-faculty interaction. The first engagement behavior examined in the study was the level of student-faculty interaction. The NSSE utilized a four-point Likert-type response scale (i.e., 4=very often, 3=often, 2=sometimes, and 1=never) to measure how often students completed the following in the current year: (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, and (d) discussed their academic performance with a faculty member.

Table 3 below provides the means and standard deviations for each of the four variables identified above. The highest mean for persisters was for the variable that measured how often students talked about career plans with a faculty member (Mean = 2.26, SD = .87). The variable that asked students how often they discussed their academic performance with a faculty member had the highest mean among non-persisters (Mean = 2.29, SD = .94). This variable also reflected the greatest discrepancy in the mean scores between persisters and non-persisters (.20). The lowest mean score was the same for both persisters (Mean = 1.79, SD = .89) and non-persisters (Mean = 1.87, SD = .96) for the variable of how often the students worked with a faculty member on activities other than coursework. Overall, the mean scores were higher for non-persisters (Mean = 2.11, SD = .80) than persisters (Mean = 2.02, SD = .67) for each of the student-faculty interaction variables, with one exception. Persisters (Mean = 2.26, SD = .87) had

a higher mean score on the variable that asked how often students talked about their career plans with a faculty member.

Table 3

Level of Student-Faculty Interaction

Variables	Total N=1,402	Persisters n=1,278	Non-persisters n=124
Means (SD) – Range 1-4			
Talked about career plans with a faculty member	2.25 (.88)	2.26 (.87)	2.19 (.96)
Worked with a faculty member on activities other than coursework (committees, student groups, etc.)	1.78 (.90)	1.79 (.89)	1.87 (.96)
Discussed course topics, ideas, or concepts with a faculty member outside of class	1.99 (.86)	1.98 (.85)	2.08 (1.00)
Discussed your academic performance with a faculty member	2.11 (.84)	2.09 (.83)	2.29 (.94)
Student-Faculty Interaction Overall	2.03 (.68)	2.02 (.67)	2.11 (.80)

Experiences with the campus environment. The next engagement behavior included the variables that measured students' experiences with the campus environment. The NSSE utilized a four-point Likert-type response scale (i.e., 4=very much, 3=quite a bit, 2=some, and 1=very little) to measure how much the institution emphasized the following in the current year: (a) providing support to help students succeed academically, (b) using learning support services

(tutoring services, writing center, etc.), (c) encouraging contact among students from different backgrounds (social, racial/ethnic, religious, etc.), (d) providing opportunities to be involved socially, (e) providing support for their overall well-being (recreation, health care, counseling, etc.), (f) helping manage non-academic responsibilities (work, family, etc.), (g) attending campus activities and events (performing arts, athletic events, etc.), and (h) attending events that address important social, economic, or political issues.

Table 4 below provides the means and standard deviations for each of the eight variables noted above. Institutional emphasis on using learning support services variable had the highest mean score for both persisters (Mean = 3.16, SD = .83) and non-persisters (Mean = 3.11, SD = .78). The variable of institutional emphasis on attending campus activities and events had the greatest discrepancy in the mean scores between persisters and non-persisters (.24). The lowest mean score was also the same for both persisters (Mean = 2.34, SD = .94) and non-persisters (Mean = 2.27, SD = .99) for the variable of institutional emphasis on helping manage non-academic responsibilities. Overall, the mean scores were higher for persisters (Mean = 2.89, SD = .61) than for non-persisters (Mean = 2.78, SD = .70) for each of the experiences with the campus environment variables.

Table 4

Experiences with the Campus Environment

Variables	Total N=1,402	Persisters n=1,278	Non-persisters n=124
Means (SD) – Range 1-4			
Providing support to help students succeed academically	3.13 (.76)	3.14 (.75)	3.05 (.84)

Table 4 (Cont.)

Experiences with the Campus Environment

Variables	Total	Persisters	Non-persisters
	N=1,402	n=1,278	n=124
	Means (SD) – Range 1-4		
Using learning support services (tutoring services, writing center, etc.)	3.15 (.83)	3.16 (.83)	3.11 (.78)
Encouraging contact among students from different backgrounds (social, racial/ethnic, religious, etc.)	2.64 (.95)	2.65 (.94)	2.60 (1.03)
Providing opportunities to be involved socially	3.13 (.82)	3.15 (.82)	2.98 (.87)
Providing support for your overall well-being (recreation, health care, counseling, etc.)	3.03 (.84)	3.04 (.84)	2.91 (.87)
Helping manage non-academic responsibilities (work, family, etc.)	2.33 (.95)	2.34 (.94)	2.27 (.99)
Attending campus activities and events (performing arts, athletic events, etc.)	3.06 (.86)	3.08 (.85)	2.84 (.93)
Attending events that address important social, economic, or political issues	2.57 (.92)	2.57 (.91)	2.47 (.97)
Experiences with the Campus Environment Overall	2.88 (.62)	2.89 (.61)	2.78 (.70)

Engagement in collaborative learning. The final behavior examined in this study was engagement in collaborative learning. The NSSE also utilized a four-point Likert-type response scale (i.e., 4=very often, 3=often, 2=sometimes, and 1=never) to measure how often students completed the following in the current year: (a) asked another student to help understand course material, (b) explained course material to one or more students, (c) prepared for exams by discussing or working through course material with other students, and (d) worked with other students on course projects or assignments.

Table 5 below provides the means and standard deviations for each of the four variables. Explained course material to one or more students variable had the highest mean score for both persisters (Mean = 2.97, SD = .77) and non-persisters (Mean = 2.84, SD = .88). The variable that asked students to report how often they asked another student to help understand course material had the greatest discrepancy in the mean scores between persisters and non-persisters (.18). Based on the mean scores reported in Table 5, both persisters and non-persisters reported that they least frequently worked with other students on course projects and assignments (Mean = 2.73, SD = .84 for persisters and Mean = 2.63, SD = .81 for non-persisters). Overall, the mean scores were higher for persisters (Mean = 2.86, SD = .66) than for non-persisters (Mean = 2.73, SD = .68) for each of the engagement in collaborative learning variables.

Table 5

Engagement in Collaborative Learning

Variables	Total	Persisters	Non-persisters
	N=1,402	n=1,278	n=124
Means (SD) – Range 1-4			
Asked another student to help you understand course material	2.87 (.83)	2.89 (.83)	2.71 (.85)
Explained course material to one or more students	2.96 (.78)	2.97 (.77)	2.84 (.88)
Prepared for exams by discussing or working through course material with other students	2.86 (.90)	2.87 (.90)	2.74 (.94)
Worked with other students on course projects or assignments	2.72 (.83)	2.73 (.84)	2.63 (.81)
Engagement in Collaborative Learning Overall	2.85 (.66)	2.86 (.66)	2.73 (.68)

Results from the Independent Samples *t*-Test Analyses

An independent samples *t*-Test was utilized to address the three primary research questions in this study in order to examine the differences of the level of student-faculty interaction, experiences with the campus environment, and engagement in collaborative learning between first-year students who persisted with first-year students who did not persist to the second year. An independent samples *t*-Test was used because the two groups of students were not paired, dependent, correlated, or related in any form (Glass & Hopkins, 1996; McMillan & Schumacher, 2010). In Table 6 below, the independent samples *t*-Test analysis revealed a

statistically significant difference between persisters' and non-persisters' engagement in collaborative learning, $t(1,402) = 2.167$; $p < .05$. The sample means demonstrated that persisters (Mean = 2.86, SD = .66) reported a significantly higher engagement in collaborative learning than non-persisters (Mean = 2.73, SD = .68). The analysis revealed no significant differences between persisters and non-persisters in student-faculty interaction, nor in the experiences with the campus environment.

Table 6

Results from Independent Samples t-Tests (N = 1402)

Variable	Persisters	Non-	<i>t</i>	<i>df</i>	<i>p</i>
	n=1,278	Persisters n=124			
	<i>M (SD)</i>	<i>M (SD)</i>			
Student-Faculty Interaction	2.02 (.67)	2.11 (.80)	-1.116	140.28	.267
Experiences with the Campus Environment	2.89 (.61)	2.78 (.70)	1.920	1400	.055
Engagement in Collaborative Learning	2.86 (.66)	2.73 (.68)	2.167	1400	.030*

Note: * $p < .05$

Independent samples *t*-Tests were also conducted to examine the differences in engagement behaviors between persisters and non-persisters separately for each demographic group. With regard to gender, in Table 7, the analysis revealed that there was a significant difference between female student persisters and female student non-persisters in their level of student-faculty interaction, $t(846) = -2.19$; $p < .05$. The analysis demonstrated that female non-persisters (Mean = 2.18, SD = .78) had significantly higher levels of student-faculty interaction

than female persisters (Mean = 1.99, SD = .66). Additionally, the analysis revealed no significant differences existed between female persisters and female non-persisters for their reported experiences with the campus environment, nor for their engagement in collaborative learning.

Table 7

Results from Independent Samples t-Tests for Female Students (n=846)

Variable	Persisters	Non-Persisters	<i>t</i>	<i>df</i>	<i>p</i>
	<u>n=775</u>	<u>n=71</u>			
	<i>M (SD)</i>	<i>M (SD)</i>			
Student-Faculty Interaction	1.99 (.66)	2.18 (.78)	-2.19	844	.028*
Experiences with the Campus Environment	2.94 (.61)	2.83 (.71)	1.47	844	.142
Engagement in Collaborative Learning	2.86 (.65)	2.74 (.62)	1.51	844	.132

*Note: *p < .05*

An independent samples *t*-Test analysis was conducted to determine if any significant differences existed between male student persisters and male student non-persisters. As shown in Table 8, the analysis revealed male student persisters were not significantly different from male student non-persisters in any of the three engagement behaviors examined in this study.

Table 8

Results from Independent Samples t-Tests for Male Students (n=526)

Variable	Persisters	Non-Persisters	<i>t</i>	<i>df</i>	<i>p</i>
	<u>n=480</u>	<u>n=46</u>			
	<i>M (SD)</i>	<i>M (SD)</i>			
Student-Faculty Interaction	2.07 (.69)	2.04 (.86)	.264	524	.792
Experiences with the Campus Environment	2.82 (.62)	2.74 (.71)	.844	524	.399
Engagement in Collaborative Learning	2.87 (.68)	2.75 (.77)	1.191	524	.234

Note: * $p < .05$

Furthermore, an independent samples *t*-Test analysis was conducted to determine if any significant differences existed between white student persisters and white student non-persisters. As shown in Table 9, the analysis revealed that there was a significant difference between white student persisters and white student non-persisters in terms of their experiences with the campus environment, $t(1,152) = 2.367$; $p < .05$. White student persisters (Mean = 2.89, SD = .61) reported significantly better experiences with campus environment than white student non-persisters (Mean = 2.73, SD = .69). Likewise, the analysis revealed that significant differences existed in engagement in collaborative learning between the two groups, $t(1,152) = 2.180$; $p < .05$. White student persisters (Mean = 2.88, SD = .65) were more engaged in collaborative learning than white student non-persisters (Mean = 2.73, SD = .70). The analysis revealed no significant differences between white student persisters and white student non-persisters in the level of student-faculty interaction.

Table 9

Results from Independent Samples t-Tests for White Students (n=1,152)

Variable	Persisters	Non-Persisters	<i>t</i>	<i>df</i>	<i>p</i>
	<u>n=1,058</u>	<u>n=94</u>			
	<i>M (SD)</i>	<i>M (SD)</i>			
Student-Faculty Interaction	1.99 (.66)	2.09 (.78)	-1.035	104.96	.303
Experiences with the Campus Environment	2.89 (.61)	2.73 (.69)	2.367	1150	.018*
Engagement in Collaborative Learning	2.88 (.65)	2.73 (.70)	2.180	1150	.029*

Note: * $p < .05$

An independent samples *t*-Test analysis was also conducted to determine if any significant differences existed between persisters and non-persisters among students of color. As shown in Table 10, the analysis revealed students of color who persisted to the second year were not significantly different from students of color who did not persist on any of the three engagement variables.

Table 10

Results from Independent Samples t-Tests for Students of Color (n=250)

Variable	Persisters	Non-Persisters	<i>t</i>	<i>df</i>	<i>p</i>
	<u>n=220</u>	<u>n=30</u>			
	<i>M (SD)</i>	<i>M (SD)</i>			
Student-Faculty Interaction	2.14 (.73)	2.18 (.86)	-.212	248	.832

Table 10 (Cont.)

Results from Independent Samples t-Tests for Students of Color (n=250)

Variable	Persisters	Non-Persisters	<i>t</i>	<i>df</i>	<i>p</i>
	<u>n=220</u>	<u>n=30</u>			
	<i>M (SD)</i>	<i>M (SD)</i>			
Experiences with the Campus Environment	2.91 (.64)	2.93 (.72)	-.161	248	.872
Engagement in Collaborative Learning	2.78 (.68)	2.73 (.61)	.320	248	.749

*Note: *p < .05*

Additionally, an independent samples *t*-Test was conducted to determine if any significant differences existed between persisters and non-persisters who were first-generation college students. As shown in Table 11, the analysis revealed no significant differences existed between first-generation college students who persisted when compared with the ones who did not persist.

Table 11

Results from Independent Samples t-Tests for First-Generation College Students (n=343)

Variable	Persisters	Non-Persisters	<i>t</i>	<i>df</i>	<i>p</i>
	<u>n=295</u>	<u>n=48</u>			
	<i>M (SD)</i>	<i>M (SD)</i>			
Student-Faculty Interaction	2.05 (.70)	2.17 (.81)	-1.079	341	.281
Experiences with the Campus Environment	2.88 (.58)	2.86 (.62)	.222	341	.824

Table 11 (Cont.)

Results from Independent Samples t-Tests for First-Generation College Students (n=343)

Variable	Persisters	Non-Persisters	<i>t</i>	<i>df</i>	<i>p</i>
	<u>n=295</u>	<u>n=48</u>			
	<i>M (SD)</i>	<i>M (SD)</i>			
Engagement in Collaborative Learning	2.80 (.68)	2.71 (.71)	.849	341	.396

*Note: *p < .05*

Finally, an independent samples *t*-Test was conducted to determine if any significant differences existed between non-first-generation college student persisters and non-persisters. As shown in Table 12, the analysis revealed non-first-generation college students who persisted were not significantly different from their non-first-generation college student peers who did not persist on any of the three engagement behaviors.

Table 12

Results from Independent Samples t-Tests for Non-First-Generation College Students (n=1,059)

Variable	Persisters	Non-Persisters	<i>t</i>	<i>df</i>	<i>p</i>
	<u>n=983</u>	<u>n=76</u>			
	<i>M (SD)</i>	<i>M (SD)</i>			
Student-Faculty Interaction	2.02 (.66)	2.07 (.80)	-.647	1057	.518
Experiences with the Campus Environment	2.90 (.62)	2.73 (.75)	1.879	83.234	.064

Table 12 (Cont.)

Results from Independent Samples t-Tests for Non-First-Generation College Students (n=1,059)

Variable	Persisters	Non-Persisters	<i>t</i>	<i>df</i>	<i>p</i>
	<u>n=983</u>	<u>n=76</u>			
	<i>M (SD)</i>	<i>M (SD)</i>			
Engagement in Collaborative Learning	2.88 (.65)	2.74 (.66)	1.836	1057	.067

*Note: *p < .05*

Chapter Summary

This chapter presented the results of the study from both descriptive statistics and independent samples *t*-tests. Based on the descriptive analysis of the data, non-persisters reported a higher level of student-faculty interaction than persisters. On the contrary, persisters reported higher levels of engagement in collaborative learning and experiences with campus environment than non-persisters. Independent samples *t*-Test analysis revealed that first-year student persisters demonstrated a significantly higher level of engagement in collaborative learning than non-persisters. Additionally, independent samples *t*-Tests showed that female non-persisters had significantly higher levels of student-faculty interaction than female persisters. Furthermore, white student persisters reported significantly better experiences with the campus environment and more frequent engagement in collaborative learning than white-non-persisters.

Chapter V

DISCUSSION

This study was conducted to examine the differences of three engagement behaviors, including student-faculty interaction, experiences with the campus environment, and engagement in collaborative learning, as measured by the National Survey of Student Engagement (NSSE), between first-year students who persisted and first-year students who did not persist to the second year at a mid-size, doctorate-granting, public, research university in the mid-south. The study also examined whether or not the differences in the three engagement behaviors varied by gender, race/ethnicity, and first-generation college student status between persisters and non-persisters. Additional research on the use of the National Survey of Student Engagement (NSSE) may help institutions more effectively utilize their resources that could have a positive influence on student engagement and retention. It is also meaningful to explore how observed differences in student engagement behaviors differ by gender, race/ethnicity, and first-generation college student status. This type of information could help practitioners gain a better understanding of how the behaviors, activities, and experiences of these student populations can influence student persistence and success. Finally, this study was designed to provide valuable information to the research institution that will help them make decisions about policies, programs, and practices that could have a positive influence on their retention and graduation rates. This chapter first provides an overview of the research study, followed by the discussion of the results and conclusions drawn from the research questions, recommendations for future research, and recommendations for practice and policy.

Overview of the Study

This study specifically examined three engagement behaviors that have been identified

in the literature as having a positive influence on student persistence, including student-faculty interaction, experiences with the campus environment, and engagement in collaborative learning (Kuh et al., 2008; Lillis, 2011; Pascarella & Terenzini, 1991; Pike & Kuh, 2005a; Soria & Stebleton, 2012; Umbach & Wawrzynski, 2005). Specifically, this quantitative, non-experimental retrospective, explanatory study was designed to compare the differences between students who persisted with students who did not persist to the second year.

Data for this study were collected in two stages. The first set of data included the first-year students who participated in the NSSE in the spring of 2016. The second set of data came from the research institution's Office of Institutional Research and Assessment. This office provided the data set that identified which students persisted and which students did not persist to the second year. Additionally, the office collated the student data with the survey responses and presented the information in aggregate in order to protect the identity of the student participants. Descriptive statistics were utilized to summarize the overall trends for each of the variables. Independent samples *t*-Tests were also conducted to address the three research questions, as well as examine the differences between students who persisted with students who did not persist to the second year by gender, race/ethnicity, and first generation college student status. The following is a summary of the results from the descriptive statistics and the independent samples *t*-Test analysis for each research question.

1. What differences existed in the level of student-faculty interaction between first-year students who persisted and first-year students who did not persist to their second year? Both first-year persisters and non-persisters expressed that they only *sometimes* (2.00) interacted with faculty (Table 3). Persisters discussed their career plans with faculty more often than non-persisters. On the contrary, non-persisters discussed their academic performance with faculty

more often than persisters. Overall, non-persisters expressed a slightly higher level of student-faculty interaction than persisters. However, the independent samples *t*-Test revealed no significant differences between the two groups in student-faculty interaction (Table 6).

1a. What gender differences existed in the level of student-faculty interaction between first-year students who persisted and first-year students who did not persist? The analysis revealed that female student non-persisters had significantly higher levels of student-faculty interaction than female student persisters (Table 7). There were no statistically significant differences between male student persisters and male student non-persisters in the level of student-faculty interaction (Table 8).

1b. What race/ethnicity differences existed in the level of student-faculty interaction between first-year students who persisted and first-year students who did not persist? No statistically significant differences existed in the level of student-faculty interaction between white student persisters and white student non-persisters (Table 9). Nor were there any statistically significant differences between students of color who persisted with students of color who did not persist in the level of student-faculty interaction (Table 10).

1c. What differences existed in the level of student-faculty interaction between first-generation students who persisted and first-generation students who did not persist? No significant differences existed between first-generation students who persisted when compared with first-generation students who did not persist in their level of student-faculty interaction (Table 11). Likewise, no significant differences were found between non-first generation students who persisted and non-first generation students who did not persist in their level of student-faculty interaction (Table 12).

2. What differences existed in experiences with the campus environment between first-

year students who persisted and first-year students who did not persist to the second year? Both persisters and non-persisters were similar in their perceptions regarding the emphasis the institution placed on their campus experiences (Table 4). Both groups' mean scores were slightly under 3.00 within the response scale range of 1.00 to 4.00. Specifically, the using learning support services variable had the highest mean score for both persisters and non-persisters. Likewise, both groups' mean scores were the lowest for the variable of institutional emphasis on helping manage non-academic responsibilities. Overall, persisters had a slightly higher mean score than their counterparts for each of the experiences with the campus environment variables. Yet, the independent samples *t*-Test revealed no significant differences between the two groups in their experiences with the campus environment (Table 6).

2a. What gender differences existed in experiences with the campus environment between first-year students who persisted and first-year students who did not persist? There were no statistically significant differences found between female student persisters and female student non-persisters in their reported experiences with the campus environment (Table 7). Likewise, no statistically significant differences were found in experiences with the campus environment between male student persisters and male student non-persisters (Table 8).

2b. What race/ethnicity differences existed in experiences with the campus environment between first-year students who persisted and first-year students who did not persist? The differences observed between white student persisters and white student non-persisters were significant with their experiences with the campus environment (Table 9). White student persisters expressed a significantly higher institutional emphasis on experiences with the campus environment as compared with white student non-persisters. There were no significant

differences found between students of color persisters and non-persisters in their experiences with the campus environment (Table 10).

2c. What differences existed in experiences with the campus environment between first-generation students who persisted and first-generation students who did not persist? No significant differences existed between first-generation students who persisted when compared with first-generation students who did not persist in their experiences with the campus environment (Table 11). Likewise, no significant differences were found between non-first generation students who persisted and non-first generation students who did not persist in their experiences with the campus environment (Table 12).

3. What differences existed with engagement in collaborative learning between first-year students who persisted and first-year students who did not persist to the second year? Both persisters and non-persisters expressed similar responses to engagement in collaborative learning (Table 5). Both groups had the highest mean for the variable of explained course material to one or more students. Both also reported the same lowest mean for working with other students on course projects. Even though the responses were similar, persisters had a higher mean score for each engagement in collaborative learning variable, when compared with non-persisters. The differences between the two groups were found to be statistically significant in their engagement in collaborative learning (Table 6).

3a. What gender differences existed with engagement in collaborative learning between first-year students who persisted and first-year students who did not persist? There were no statistically significant differences found between female student persisters and female student non-persisters in their reported experiences with engagement in collaborative learning (Table 7).

Likewise, no statistically significant differences were found in engagement in collaborative learning between male student persisters and male student non-persisters (Table 8).

3b. What race/ethnicity differences existed with engagement in collaborative learning between first-year students who persisted and first-year students who did not persist? White student persisters were more engaged in collaborative learning as compared with white student non-persisters. These differences were also found to be statistically significant (Table 9). However, there were no significant differences found between students of color persisters and students of color non-persisters in engagement in collaborative learning (Table 10).

3c. What differences existed with engagement in collaborative learning between first-generation students who persisted and first-generation students who did not persist? No significant differences existed between first-generation students who persisted when compared with first-generation students who did not persist in their engagement in collaborative learning (Table 11). Likewise, no significant differences were found between non-first generation students who persisted and non-first generation students who did not persist (Table 12).

Discussion and Conclusions

The premise of this study was based on Tinto's model of institutional action, which emphasized that institutions can do little to control for student attributes or external events (Tinto, 2012). However, institutions can influence student success by providing support, including academic, social, and financial. In addition, students are more likely to succeed with frequent and quality feedback, when the institution maintains high expectations, and entices students to be engaged in educational and social programming (Tinto, 2012). Also, the study was designed to provide additional support for Astin's theory of involvement (Astin, 1984; 1985). Astin's theory supports the concept that students are more likely to persist if they have

higher levels of involvement in the academic and social structures of the campus (Astin, 1985). Kuh's (2002) construct of student engagement was an additional framework utilized to guide this study. According to Kuh (2002), the amount of time and energy students dedicate to educationally purposeful activities is the best predictor of college student learning and development. Although the model focused on student engagement, Pike and Kuh (2005b) emphasized that it is the institutional policies and practices that can have the greatest influence on student engagement.

Specifically, the literature supports the behavior of student-faculty interaction and its positive relationship with student engagement (Astin, 193; Chickering & Gamson, 1999; Kuh & Hu, 2001; Lillis, 2011; Pascarella & Terenzini, 1991, 2005; Renn & Reason, 2013; Umbach & Wawrzynski, 2005). Based on the descriptive statistics, the trends from this study first appeared to challenge the theoretical models. The results indicated that first-year non-persisters had higher levels of student-faculty interaction on three of the four variables that measured the behavior. However, the independent samples *t*-Test analysis revealed no significant differences existed between persisters and non-persisters.

Regardless, the results were surprising. Persisters were expected to have a higher level of student-faculty interaction than the non-persisters. Specifically, because much of the research demonstrates the numerous benefits of student-faculty interaction including personal/social development, general education knowledge, the college GPA, degree completion, graduating with honors, and enrollment in graduate school (Chickering & Gamson, 1999; Lillis, 2011; Pascarella & Terenzini, 2005; Umbach & Wawrzynski, 2005). It was also surprising to find that female non-persisters expressed significantly higher levels of student-faculty interaction as compared with female persisters. Although, there was not a significant difference, similar trends

were found with non-persisters from students of color, first-generation students, and non-first-generation students. All three groups of non-persisters had higher levels of student-faculty interactions when compared with persisters. Although, it was unexpected, these results support Lillis' (2011) findings that suggested students are hesitant to seek out assistance from faculty, especially if students are expected to contact faculty outside of the classroom. However, this outcome is a direct contrast from other research studies related to student-faculty interaction where this behavior has been demonstrated to have a positive influence on student engagement and persistence (Kuh & Hu, 2001; Lau, 2003; Lillis, 2011; Umbach & Wawrzynski, 2005). Although, Kuh and Hu (2001) have acknowledged that a positive relationship between student-faculty interaction and persistence is conditional. It is yet to be determined if this behavior was based on the assertiveness of students or if faculty tend to reach out to students who perform poorly in their classes.

The results may have also been influenced by the characteristics of the institutional research site. It is a common assumption at the research institution that many first-year classes enroll a large number of students. According to the spring semester schedule of classes, enrollments for general education core courses ranged from 150 - 470 students. As such, faculty may rarely have an opportunity to engage individual first-year students in one-on-one or face-to-face discussions. However, the institution has high expectations for undergraduate faculty to address at-risk student needs. A number of resources are available for faculty to respond to these needs, including the use of early-progress grades, online outreach tools, and a center for learning and student success, which provides supplemental instruction, tutoring, as well as academic coaching. Non-persisters may have been identified as at-risk based on their class performance.

Thus, the non-persisters may have perceived their instructor's outreach as a meaningful interaction.

An additional consideration regarding the large classes is that they may include teaching or graduate assistants. First-year students could develop relationships with the assistants rather than the faculty member. As such, persisters may not perceive these interactions as a faculty contact. Additionally, persisters may have utilized the relationship with the assistants versus contacting the professor to discuss career plans or course topics. Again, the first-year students may not have considered the relationships with graduate or teaching assistants as faculty interactions, especially since the NSSE questions specifically use the term, faculty member, across the four questions related to the engagement behavior.

Since many of the first-year classes are quite large, the persisters may have utilized another resource at the institution rather than their faculty to discuss career plans or other activities at the institution. According to Inkelas et al. (2007), living and learning communities have been demonstrated to have a positive influence on student engagement and persistence. The research institution sponsors nine living and learning communities within the housing program. Persisters may have utilized their peer ambassadors rather than attempt to reach out to faculty to ask questions or discuss career plans. Additionally, many living and learning community programs are designed to include faculty participation (Pascarella & Terenzini, 2005). Contacts with faculty participants may not have been considered as part of a formal interaction with persisters.

Another factor that may have influenced the outcome could include the evolving role of faculty at the research institution. With additional expectations placed on research, there is an assumption at the institution that fewer tenure-track and experienced faculty are provided

opportunities to teach introductory, first-year classes. It is perceived that graduate assistants or new faculty are often assigned these lower-level courses. Inexperienced faculty may explain why non-persisters had higher levels of student-faculty interaction than first-year students who persisted. Where less experienced faculty may be more focused on covering course material and earning tenure versus building relationships with students. This assumption is supported by Lillis' (2011) findings where faculty mentors with high levels of emotional intelligence significantly influences a student's likelihood to persist.

Overall, as demonstrated in the literature, the number of student-faculty interactions do not matter as much as the nature of the contacts. For it is the quality of the interactions, rather than the frequency of contacts that can have the greatest influence on student engagement and persistence (Kuh & Hu, 2001; Pascarella & Terenzini, 2005; Umbach & Wawrzynski, 2005). Thus, these institutional characteristics may have influenced the results of this study.

All the variables related to experiences with the campus environment demonstrated that the mean scores were higher for persisters than for non-persisters. However, the independent samples *t*-Test analysis revealed no significant differences existed between persisters and non-persisters in experiences with the campus environment. Although the results were not significant, the trends found in the descriptive statistics provide support for two specific characteristics related to student engagement. Once again, student engagement is greatly influenced by the amount of time and energy a student devotes to educationally purposeful activities (Astin, 1985; Kuh et al., 2006; Kuh et al, 2008). The second characteristic relates to how the institution utilizes its resources to entice students in participating in these types of activities (Astin, 1985; Kuh et al., 2006). Additionally, the evidence supports Pascarella and Terenzini's findings regarding college completion. Whereas, an institution's environment can

have an influence on college completion, particularly if there is a perception that the campus is concerned about students as individuals (Pascarella & Terenzini, 2005). Pascarella and Terenzini (2005) also reported that the level of a student's involvement in any area of an institution's academic and social systems is a significant aspect in a student's desire to persist at the institution.

Specifically, the results of this study support the research institution's benefits to emphasizing the use of learning support services, providing opportunities to be involved socially, and to place value on attending campus activities and events. It is also noteworthy to recognize that the mean scores for this variable were higher than the other two engagement behaviors examined in this study, ranging from 2.27-3.16. It is apparent that the institution places an emphasis on opportunities to experience the campus environment. Therefore, this outcome is consistent with the three frameworks utilized to support this study.

Furthermore, white student persisters were significantly different from white student non-persisters in experiences with the campus environment. White student persisters reported better experiences with the campus environment than their peer non-persisters did. These results were consistent with previous research, where Kuh et al. (2008) found a significant positive relationship between participation in educationally purposeful activities and race/ethnicity, specifically for white and Hispanic students, but not for other groups of students.

Additionally, the examination of the other student characteristics demonstrated that the means for persisters were higher for experiences with the campus environment with each of the groups except for students of color non-persisters. However, this discrepancy was a mean score difference of .02. This contrast is consistent with the findings of Sutton and Kimbrough (2001), where they found that minority student perceptions of campus involvement was limited to

multicultural organizations. This limited involvement was due to the injustices, whether real or superficial, students of color had experienced within the institution especially when the campus was a predominantly white institution. This perception or misperception may have influenced the results. Lau (2003) reported that the landscape of higher education has changed significantly over the past 20 years, moving from the traditional white male to the non-traditional minority female. Current research indicates that women are more likely to persist than men and white and Asian students persist at a higher rate than other racial or ethnic groups (Reason, 2009). According to Renn and Reason (2013), there is still much more research needed to gain a better understanding of how institutions can best use their resources for each of these student populations. The more campuses can learn if specific experiences influence a particular group, the better institutions can utilize their resources to help them persist (Pascarella & Terenzini, 2005; Renn & Reason, 2013).

It was a surprise to find such a small discrepancy between first-generation persisters and first-generation non-persisters where only .02 difference existed between mean scores of the two groups in experiences with the campus environment. Previous literature reported that first-generation students had significantly lower levels of engagement than non-first-generation students do (Pike & Kuh, 2005a; Soria & Stebleton, 2012). Thus, the large discrepancy between mean scores of non-first-generation persisters and non-persisters in their experiences with the campus environment (.17) was expected. These results support Soria and Stebleton's (2012) assumptions that non-first-generation students have greater capacity of social capital than their first-generation peers do.

The behavior found to be statistically significant between persisters and non-persisters was engagement in collaborative learning. Persisters had a higher mean score on each of the

four variables used to measure collaborative learning. Additionally, each of the sub-samples had a higher mean score for persisters than non-persisters. White student persisters were found to be significantly different from white non-persisters. These results were expected and are consistent with the literature where collaborative learning has been demonstrated to influence student engagement in the classroom, improves cognitive skills and intellectual development, as well as increases student persistence (Kuh et al., 2010; Pascarella & Terenzini, 2005; Renn & Reason, 2013; Tinto, 2012; Umbach & Wawrznski, 2005). These results were also consistent with the Kuh et al. (2008) study regarding race/ethnicity and its relationship with participation in educationally purposeful activities. The results demonstrated that participating in educationally purposeful activities provided a slight advantage in first-year GPA for white students.

Not only do these results support the three theoretical frameworks used for this study, they were consistent with the results found by Ward and Commander (2011). Their study found that collaborative learning expanded into building close relationships with faculty, enhanced peer-to-peer relationships, and specifically helped students feel more comfortable in a large university setting. Unfortunately, there have been minimal efforts to encourage faculty who teach first-year students to utilize active and collaborative learning strategies in the classroom at the institutional research site. Guidance for teaching first-year classes have mostly remained within the academic departments that own the courses. As such, little information is available at the institution about the influence active and collaborative learning strategies have had on first-year persistence rates. The results of this study provides valuable information that demonstrates a significant relationship between engagement in collaborative learning and student persistence.

Additionally, learning communities are considered high impact practices related to engagement in collaborative learning and have a positive influence on first-year grades as well as

student persistence (Kuh et al., 2008). Attempts at building learning communities within the classroom have been inconsistent over the years at the research institution site. For over a decade, colleges were permitted to reserve seats in English, algebra, and communication during the summer orientation enrollment period. Although, it was an indirect method for creating a learning community, it was an attempt to place students together who were in similar disciplines. When colleges began to request additional seats in the natural sciences and social science sections, the administration of managing reserved seating became too cumbersome and the college overseeing these courses ended the practice. Unfortunately, no research was completed on the practice of reserved seating to determine its influence on student success.

Limitations

A review of the limitations may begin to explain some of the reasons why many of the research questions were found to have no significant differences between persisters and non-persisters. First, limiting the examination to one research institution restricts much of the generalizability of the study. The final sample size of 1,402 students (29.77% response rate) did not initially cause concern. However, with only examining data from one administration, the sub-samples became small. The smaller sample size for students of color (persisters = 220 and non-persisters = 30) and first-generation college students (persisters = 295 and non-persisters = 48) possibly influenced the outcome of the data analysis. Small sample sizes, especially for non-persisters, as well as unequal sample sizes of persisters versus non-persisters presented significant limitations in this study. As such, caution should be taken in generalizing the results of this study.

In addition, the NSSE examines 10 engagement indicators that have been supported throughout the student engagement and retention literature (Kuh et al., 2006; Kuh et al., 2007;

NSSE, 2016c; Pascarella & Terenzini, 2005; Pike & Kuh, 2005b). Limiting this study to examine only three of the 10 behaviors restricts the ability to provide recommendations for policies, programs, and practices that could help institutions increase their retention and persistence rates. Examining additional behaviors could provide meaningful information to administrators that oversee student engagement programs. Another concern for the study is the data were based on secondary analysis. As such, the researcher was limited to the structure of the NSSE. Specifically, the language utilized within the survey may have caused confusion. As noted earlier, the questions related to the student-faculty interaction variable used the term faculty member. Students may not have considered the interactions they had with graduate or teaching assistants as a faculty member. Additionally, the language of the questions remains unclear if students initiated the interaction or if faculty initiated the behavior.

Finally, academic preparation, educational aspirations, socioeconomic status, motivation to learn, as well as the college choice process are all pre-college experiences that influence student success (Tinto, 2012). This study only examined gender, race/ethnicity, and first-generation college student status. The overall sample size was reasonable to identify significant differences. However, the extraction of the sub-samples may have influenced the ability to determine any significant differences between the groups. As noted above, limitations must be placed on any assumptions regarding the interaction of these student characteristics and their relationship with student engagement and retention.

Recommendations for Future Research

The results of this study provide a number of opportunities for future research. First, the results of the descriptive statistics where non-persisters had higher mean scores than persisters in student-faculty interaction were surprising. It was inconsistent with the previous research where

the behavior of student-faculty interaction was demonstrated to lead to higher levels of student engagement and persistence (Kuh & Hu, 2001; Lau, 2003; Lillis, 2011; Umbach & Wawrzynski, 2005). Additional research would be useful to determine if the institutional characteristics such as large first-year classes and the living and learning communities influenced the outcome. Next, information related to first-year faculty's use of their outreach practices would also provide valuable information in determining why non-persisters expressed a higher level of student-faculty interaction. If the level of student-faculty interaction was conditional as reported by Kuh and Hu (2001), then it would also be helpful to determine what conditions are needed to provide the likelihood to increase levels of student-faculty interaction. Additionally, the results were unclear if the student reached out to the faculty member or if faculty reached out to the student. A follow-up study would help clarify the nature of student-faculty interactions to determine the influence on student engagement and persistence. Finally, the significant differences found between female persisters and non-persisters, where female non-persisters expressed higher levels of student-faculty interaction, were inconsistent with previous research studies. Kuh and Hu (2001) found no significant differences related to gender in student-faculty interaction. Additional research would be beneficial to examine this discrepancy more closely.

According to Renn and Reason (2013), institutions can do little to enhance the student characteristics that would have a positive influence on their success. However, it is still important to continue researching their influences and interactions with student engagement. As noted above, all the variables related to experiences with the campus environment demonstrated that the persisters had a higher mean score than non-persisters. However, the minimal range between students of color persisters and non-persisters was notable. Even though Sutton and Kimbrough's (2001) results were consistent with this finding, additional research that addresses

how students of color participate in campus organizations would provide additional information on how these characteristics interact with student engagement.

Learning communities have consistently been found to enrich the first year experience (Anttonen & Chaskes, 2002; Keup & Barefoot, 2005; Pascarella & Terenzini, 2005; Tinto, 2006). As noted earlier, no research has been conducted at the institution research site to determine the influence that reserved seating has on student engagement. If this indirect attempt to develop learning communities in the classroom demonstrates a positive influence on student persistence, it would be advantageous for the institution to consider a more direct method at addressing the development of learning communities across the curriculum.

Next, the literature demonstrates that non-first-generation students have a level of social capital that provides them with an advantage when compared with first-generation students in their ability to be successful in college (Soria & Stebleton, 2012). First-generation students not only reported lower rates of academic engagement, they were also related to lower retention rates (Soria & Stebleton, 2012). The results of this study were inconsistent with this research. First-generation persisters, as well as non-persisters reported higher levels of student-faculty interaction than non-first-generation students. This comparison was beyond the scope of this study. However, it would be beneficial to compare the interaction between the groups, such as females versus males, white students versus students of color, as well as first-generation versus non-first generation students in order to gain additional understanding of the interaction these student characteristics have with student engagement.

Finally, two additional opportunities for future research are related to the survey instrument, the National Survey of Student Engagement. First, it would be meaningful to expand the examination to include all 10 engagement indicators. Learning more about the student

populations and the different areas of engagement would provide additional information to support the use of the survey as a retention tool. The second option would be to utilize additional administrations of the NSSE and compare the data sets over time to identify any patterns of behavior and levels of engagement. This type of information could help institutions more clearly recognize which behaviors, activities, and experiences have the greatest influence on persistence. As such, institutions could better utilize their resources to identify policies, programs, and practices that help entice students toward those behaviors.

Recommendations for Practice and Policy

The outcomes of this study provide a number of opportunities for institutions that are attempting to influence their level of student engagement and retention rates, particularly for first-year students. With the significant differences found between first-year student persisters and non-persisters in collaborative learning, it would be beneficial for institutions to examine how they can incorporate collaborative learning opportunities across the curriculum. According to Kuh et al. (2010), institutions that engage in active and collaborative learning utilize a variety of strategies that accommodate diverse learning styles. The benefits provide students an opportunity to work efficiently in groups as well as apply what they have learned to different settings. Encouraging students to work together to help them understand course material may have a positive influence on the students' levels of engagement (Kuh et al., 2010). The utilization of these strategies helps students apply these skills to real-world issues and helps them transition to the complexities of life after college (Kuh et al., 2010). In particular, sharing this information with faculty teaching first-year courses could provide some creative solutions to helping students stay engaged in the classroom, especially in large classes.

Another recommendation for practice is related to the campus experiences, particularly for students of color. According to Sutton and Kimbrough (2001), it would be beneficial for student affairs practitioners to continue encouraging students of color to become active in minority student organizations, but also traditional campus organizations. More importantly, it would be meaningful to encourage students of color to participate in campus organizations that develop and influence policies such as student government (Sutton & Kimbrough, 2001). As noted earlier, encouraging students of color to participate in leadership positions, not only in student organizations, but also serving as paraprofessionals will provide them with an improved sense of belonging (O'Keefe, 2013; Shuh & Lavery, 1983; Swail et al., 2008). Helping students find that connection with the institution could have a positive influence on student engagement, as well as student persistence.

Additionally, the results of the study demonstrated that the research institution encouraged students to engage in experiences with the campus environment. However, no significant differences were found between persisters and non-persisters in their experiences with the campus environment. If the results demonstrated that this student population has a tendency to be collaborative learners, the institution may want to review how it markets the campus events such as programs that address social, economic, or political issues or other events that provide opportunities for students to be involved socially. Traditionally, events have been marketed through online newsletters and video boards, or programs have used social media accounts to promote events. Program planners may consider utilizing student staff members such as resident assistants or peer mentors to personally invite students to events and attend as a group. Changing this approach may have a positive influence on how the institution compares with its peer institutions on experiences with the campus environment, specifically in future

administrations of the NSSE. Being able to identify tendencies within student populations may help administrators reexamine their approaches to other policies, programs, and practices and how the institution can entice students to participate in behaviors that will have a positive influence on student persistence.

Finally, as mentioned earlier, in 2016 the NSSE was administered to over 300,000 students in more than 550 institutions in the United States and Canada (NSSE, 2016a). This study could serve as a model to institutions to support the use of the NSSE as a meaningful tool to measure their retention initiatives. The survey provides a rich database. However, a number of practitioners struggle with determining ways to utilize the information that can best help their institution. If campuses use the NSSE to identify specific behaviors, activities, and experiences that have a positive influence on student persistence, it could allow administrators to make better choices in utilizing their institutional resources.

Chapter Summary

This study examined the differences of three engagement behaviors, including student-faculty interaction, experiences with the campus environment, and engagement in collaborative learning, as measured by the National Survey of Student Engagement (NSSE), between first-year students who persisted and first-year students who did not persist to the second year at a mid-size, doctorate-granting, public, research university in the mid-south. Additionally, the study examined whether or not the differences in the three engagement behaviors varied by gender, race/ethnicity, and first-generation college student status between persisters and non-persisters. A significant difference was found between persisters and non-persisters with engagement in collaborative learning. Additionally, female non-persisters had significantly higher levels of faculty interaction than female persisters. White student persisters expressed a significantly

higher institutional emphasis on experiences with the campus environment, as well as engagement in collaborative learning.

A major goal of this study was to provide the research institution with information that could help them make decisions related to their retention initiatives. The outcomes of the examination could also apply to other institutions, whereas the NSSE can serve as a valuable tool to identify behaviors, activities, and experiences that have a positive influence on student engagement and persistence. Overall, the survey can serve as a meaningful instrument that could help administrators utilize their institutional resources more effectively. As Pike and Kuh (2005b) reported, it is the institutional policies and practices that have the greatest influence on student engagement.

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Appendix

IRB Approval Letter



Office of Research Compliance
Institutional Review Board

December 8, 2016

MEMORANDUM

TO: Alice Griffin
Ketevan Mamiseishvili

FROM: Ro Windwalker
IRB Coordinator

RE: New Protocol Approval

IRB Protocol #: 16-11-278

Protocol Title: *Utilizing the NSSE to Examine Behavior and Characteristic Differences Between First-Year Students Who Persisted with First-Year Students who Did Not Persist*

Review Type: EXEMPT EXPEDITED FULL IRB

Approved Project Period: Start Date: 12/07/2016 Expiration Date: 12/06/2017

Your protocol has been approved by the IRB. Protocols are approved for a maximum period of one year. If you wish to continue the project past the approved project period (see above), you must submit a request, using the form *Continuing Review for IRB Approved Projects*, prior to the expiration date. This form is available from the IRB Coordinator or on the Research Compliance website (<https://vpred.uark.edu/units/rscp/index.php>). As a courtesy, you will be sent a reminder two months in advance of that date. However, failure to receive a reminder does not negate your obligation to make the request in sufficient time for review and approval. Federal regulations prohibit retroactive approval of continuation. Failure to receive approval to continue the project prior to the expiration date will result in Termination of the protocol approval. The IRB Coordinator can give you guidance on submission times.

This protocol has been approved for 1,583 participants. If you wish to make *any* modifications in the approved protocol, including enrolling more than this number, you must seek approval *prior to* implementing those changes. All modifications should be requested in writing (email is acceptable) and must provide sufficient detail to assess the impact of the change.

If you have questions or need any assistance from the IRB, please contact me at 109 MLKG Building, 5-2208, or irb@uark.edu.