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**DO LEARNING COMMUNITIES MATTER?: AN EXAMINATION OF THE
RETENTION OF AT-RISK AFRICAN AMERICAN STUDENTS AT AN URBAN,
COMMUTER, RESEARCH UNIVERSITY**

by

CHERYL DEON NEWTON WHITE

Submitted to the Graduate School

of Wayne State University

Detroit, Michigan

in partial fulfillment of the requirements

for the degree of

DOCTOR OF EDUCATION

2015

MAJOR: EDUCATIONAL LEADERSHIP AND
POLICY STUDIES

Approved by:

Advisor

Date

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DEDICATION

This dissertation is dedicated to my dear late husband, Milton C. White III;
our children, Deon P. Smith Webster, Brandon W. Smith, Milton C. White IV,
and Marques A. White; our granddaughter, Hope L. Webster;
my late parents, Van Robert and Doris Jean Ransone Newton;
my siblings and in-laws;
and to my ancestors who paved the way for me to achieve this educational milestone.

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“To everything there is a season, and a time to every purpose under the heaven.”

Ecclesiastes 3:1 (KJV)

I give all honor, praise, and glory to God for blessing me with the opportunity to pursue and complete my doctoral degree. I thank my committee members for their guidance and support: Dr. Monte Piliawsky, advisor and chair of my committee, and who agreed to accept me as his doctoral student after the retirement of my first advisor, Dr. Frances LaPlante-Sosnowsky; Dr. William Hill, who encouraged me to join the doctoral cohort; and Dr. Shlomo Sawilowsky, who graciously agreed to be on my committee after the sudden passing of Dr. Gail Fahoome. I also want to thank Dr. Joanne Holbert for serving as my cognate advisor for my qualifying exams. I am also indebted to Dr. Dawn Dolly, Mary Dickson, Ellen Holmes, and Daisy Cordero for their assistance. I also thank my colleagues in Educational Outreach, the College of Education, the greater Wayne State University community, and the Board Members of the Michigan College Personnel Association (MCPA) for their support and encouragement.

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The culmination of this academic achievement is bittersweet. Just four months before I defended my dissertation, my beloved husband, Milton C. White III, passed away unexpectedly. He was my biggest cheerleader, and I know that I would not have been able to pursue this endeavor without his love and support. I love you and miss you, but I know that you are smiling

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CHAPTER 1

INTRODUCTION

Retention of undergraduate students in colleges and universities has been a major concern in higher education for a number of years. It is especially important for colleges and universities to retain students in their freshman year, as studies indicate that colleges with high freshman retention rates tend to have a higher percentage of students graduating within four years, thus saving the cost of an extra year or more of schooling (Lau, 2003). According to the literature, a key factor in student retention is student involvement (Tinto, 2007; Kuh, Cruce, Shoup, Kinzie, & Gonyea, 2008). Specifically, the more that students are involved at their institution, the greater chance that they will be retained to completion of their program or graduation. One strategy for increasing student involvement is through the implementation of learning communities. This research will examine the effectiveness of learning communities on student retention for an at-risk, African American student cohort enrolled at a Midwestern, public, urban, primarily commuter, research university for the fall 2006 semester.

Historical Overview of Student Retention

First, it is important to understand the evolution of student retention in higher education in the United States. College degrees had little or no significance in early American society. Therefore, during the 1600s to the mid-1800s, student retention was not an issue, as there were very few students who attended college. The earliest postsecondary institutions, such as Harvard (1636), William and Mary (1693), and Yale (1701), catered to very specific populations. These institutions were established as extensions of their respective churches, with the goal of educating young men to satisfy the local demand for pastors and missionaries among various Christian religions (Berger & Lyon, 2005).

The American college expanded rapidly in the early 1800s. This was attributed to the emergence of private denominational colleges whose enrollments grew by over 80 percent. The enrollment explosion continued until the 1840s, when hard economic times changed the outlook of the country for college education (Berger & Lyon, 2005).

By the mid-nineteenth century, colleges began to admit men of all religious denominations across a wide range of ages. The curricula of these early colleges were developed to provide students with a liberal arts education. In the late nineteenth century, retention still was not a concern; but during this period of time there were marked increases in degree attainment and expansion of curricular and co-curricular options that provided a more complete collegiate experience. With many more students attending college, the importance of student life began to be realized (Berger & Lyon, 2005).

During this time, extracurricular activities emerged and were used to create loyalty to the campus. There is no evidence that exists to inform whether such efforts improved retention, as retention rates were not tracked and higher education was still decades away from such concerns. It is important to note that the first 250 years of higher education focused more on institutional survival than on student persistence and retention (Berger & Lyon, 2005).

The early 1900s saw that the number of institutions opened remained constant while overall enrollment increased. This stability was impacted by the industrialization of the nation which became increasingly urban. A college education was a means of producing managers and professionals to run the more organized and complex work of the nation. This rapid growth in college enrollments finally permitted higher education institutions to create selective admissions policies. For the first time in history, colleges had enough interest from prospective students that some campuses could afford to be more selective about the type and quality of students who

attended their institutions. Precursors of retention analysis began to emerge from the increase in the undergraduate population and the growing numbers of diverse types of colleges and universities. This trend was further impacted by slowly developing expectations that an actual college degree was a valuable asset in the competition for entry into higher paying professional positions, in contrast to merely having a high school diploma along with some college education (Berger & Lyon, 2005).

The growing importance of the college degree along with the increased awareness of different attrition rates led to the first documented studies that clearly focused on what would come to be called retention. The first studies of “student mortality” emerged in the 1930s. One of the first widespread studies to examine issues related to the departure of students at multiple institutions was conducted by John McNeely and published in 1938 on behalf of the U.S. Department of the Interior and the Office of Education. In this study, the student mortality rate at 25 institutions of varying types was examined. The results found that student mortality was greater in the public institutions than the private ones (Berger & Lyon, 2005; McNeely, 1938).

The post-World War II boom initiated higher education’s golden age of expansion and provided the catalyst for renewed interest in student access and degree attainment. Although major growth in student enrollments did not occur until the late 1950s, government initiatives in response to key events such as the Great Depression and WWII were precursors to this growth. The GI Bill of 1944 had an even greater impact, as its primary purpose was to help returning soldiers acquire the skills necessary to engage in civilian life. It created an enormous surge in enrollments as soldiers returned home from war to attend college en masse. Finally, the Soviet Union’s launch of Sputnik in 1957 triggered the passage of subsequent federal policy interventions such as the National Defense Education Act of 1958 and the Higher Education Act

of 1965. These acts promoted education and college attendance, as it was necessary for the United States to maintain preeminence in global competition (Berger & Lyon, 2005).

The post WWII baby boom fueled the dramatic student population explosion of the 1960s. This rapid growth of student enrollments, both in numbers and diversity, created many challenges for the expanding roster of college and university campuses across the country. One of these challenges included the civil rights movement that began in the late 1940s and continued throughout the 1960s, which created postsecondary opportunities that had not previously been widely available for African Americans and other racial and ethnic minority groups. Many campuses were not prepared to support a more diverse student body, and were unable or unwilling to create supportive environments for students of color. Additionally, higher education was changing so rapidly at this time that many students and institutions were not adequately prepared to improve access to degree attainment. Many students were enrolling in colleges with educational backgrounds that had not prepared them for the academic expectations and social norms of college (Berger & Lyon, 2005).

Also during the late 1950s and 1960s, Spady (in Berger & Lyon, 2005) noted that many campuses began to monitor enrollments, but there were limited attempts to systematically assess patterns of student persistence. Many of these early research studies on college student departure were conducted through a psychological lens which focused on the personality attributes of students as the main reason for persistence or attrition. Spady indicated that during the late 1950s and throughout the 1960s, there were six major types of studies – philosophical, census, autopsy, case, descriptive, and predictive. However, Spady noted that there was an absence of analytical-exploratory studies that synthesized existing knowledge in order to systematically develop a coherent body of empirically based knowledge that could better inform efforts to

understand and improve undergraduate retention. Spady's initial model and his call for this type of knowledge development was the beginning of an ongoing movement in which retention would become a major focus of theory, research, policy, and practice throughout American higher education. Spady's model emphasized the interaction between individual student characteristics and key aspects of the campus environment (Berger & Lyon, 2005).

Spady's work was notable for several reasons. First, it was the first attempt to synthesize existing empirical work into a cohesive conceptual framework. Second, most of the previous studies had been grounded in psychology rather than sociology. Third, it served as a precursor to Tinto's model of student involvement, which will be discussed later (Berger & Lyon, 2005).

The 1970s dawned with greater efforts to systematically identify causes and solutions to the challenge of retention. Spady's 1971 publication, "Dropouts from Higher Education: An Interdisciplinary Review and Synthesis," began this era. Spady's sociological model of student departure explained the process as an interaction between the student and the college environment. If the students and the environment are congruent in their norms, the student will assimilate both socially and academically, increasing the likelihood of persistence. Later, Vincent Tinto built upon and enhanced Spady's model with other emerging sources of evidence about the nature of the student departure process. Tinto's interactionist theory of student departure became one of the best known, and most often cited, theories relating to student departure. By the end of the 1970s, retention theory was well established, and Tinto's work in particular was driving a more rigorous and systematic examination of retention. Numerous empirical studies, mostly conducted by Pascarella and Terenzini, developed operational measures of the core constructs from Tinto's models (Berger & Lyon, 2005).

The 1980s saw rapid growth in the study of retention. By the mid-1970s, enrollments in higher education had exceeded 11 million; however, growth was leveling off. This stagnant growth led campus leaders to explore better ways of attracting and retaining students on their campuses. Previously, there were limited connections between efforts to recruit and enroll new students and efforts to retain students once they were enrolled. The separation between admissions and retention changed rapidly after the mid-1970s, as campuses became increasingly aware that the enrollment boom of the previous few decades was about over. To counter this effect and to more effectively maintain optimal sized student bodies, the concept of enrollment management was born (Berger & Lyon, 2005).

At this same time period, retention was becoming increasingly diversified in terms of the types of students who were applying to college, the types of institutions that were concerned with retention, and the types of students that campuses were trying to retain. The concept of retention even shifted into graduate student retention, after a long history of focusing only on the retention of undergraduates (Berger & Lyon, 2005).

The 1990s saw expansion of research, knowledge, and strategies that continued the trend in which retention had become a dynamic and full-fledged area of study and had become permanently established as an educational priority throughout American higher education. The late 1990s might also be called the era of the emergence of “persistence,” as persistence and retention were recognized as distinct concepts. By virtue of the vast amounts of knowledge that had been developed through thousands of published and unpublished studies, retention became a field of study that had become well established (Berger & Lyon, 2005).

Now, early in the twenty-first century, retention is fully entrenched as a major policy issue and retention efforts are well established on virtually every campus in the nation. Retention

is used as a key indicator of institutional effectiveness; there are literally thousands of studies on this topic, and the field has its own academic journal, the *Journal of College Student Retention: Research, Theory, & Practice* (Berger & Lyon, 2005).

There remain, however, many unresolved issues. On most college campus across the country, retention rates are lower than officials would like. Specifically, according to the National Center for Educational Statistics (NCES), the overall six-year retention rate through to graduation is 59.2 % for student cohorts that started college in fall 2006. Specific to public institutions, the overall graduation rate is 57.2%. The graduation rates are worse for students from underrepresented minority groups, first-generation backgrounds, and lower socioeconomic backgrounds (Berger & Lyon, 2005). For African American students, the overall six-year retention rate through to graduation is 39.7 %, whereas the retention rate for White students is 60.2 % (Ginder & Kelly-Reid, 2013).

In summary, retention in higher education has evolved over time. While little attention was paid to retention for much of the first few hundred years of American higher education, the study of retention has developed over the last 35 years at a rapid pace. Retention has become one of the core indicators and main fields of study within higher education and continues to be a major focus at colleges and universities today (Berger & Lyon, 2005).

At-Risk African American Students

Students are considered to be at-risk if they fall into any of the following categories: low ACT scores, first-generation, ethnic minority, lower socioeconomic background, and non-native English speaker (Bui, 2002; Cabrera, Nora, Terenzini, Pascarella, & Hagedorn, 1999). Specifically for African American students, the history of admission of African American students to traditionally White colleges and universities did not reflect the traditional ideal of the

universities as a place of tolerance and meritocracy. From 1826 to 1890, only 30 Black Americans graduated from historically White colleges and universities in the United States. In 1910, there were less than less than 700 Black students enrolled in Predominately White Institutions (PWIs) (Fegain, Vera, & Imani, 1996).

Immediately prior to WWII, enrollments of Blacks in postsecondary education were minuscule; there were probably no more than 5,000 Black students in White colleges outside the South in 1939. This represented five-tenths of 1 % of total student enrollments in the North, and about half of these students were concentrated in fewer than two dozen institutions. During the period from 1940 to 1950, Black enrollments in White colleges outside the South grew to 61,000, which was about 47 % of all Black enrollment, but only 3 % of the total enrollment in those colleges. Black enrollments nationwide in 1947, it was estimated, represented 6% of total college enrollments that year; this was a high point that was not surpassed again until 1967 (Lucas, 1994).

By late 1961, desegregation was almost complete in most of the southern states that bordered northern states, and in about a third of the states of the Deep South. In 1964, there were an estimated 15,000 blacks enrolled in PWIs in the South, representing a fourfold increase since 1957. Meanwhile, Black undergraduate enrollments in northern colleges had increased from around 45,000 in 1954 to almost 95,000 in 1967-68. The number of Blacks attending White colleges in the South during the first half of the decade of the sixties rose from 3,000 in 1960 to 24,000 in 1965, then to 98,000 by 1970. Between 1965 and 1970, Black enrollment in White institutions more than tripled. Simultaneously, Black enrollments in Historically Black Colleges and Universities (HBCUs) dramatically decreased, dropping from 82 % of all college-attending

Blacks in 1965 to 60 % in 1970; enrollment declined still further to 40 % in 1978 (Lucas, 1994).

Although enrollment of African Americans in post-secondary institutions has increased, enrollment is more prevalent in community and technical colleges and in HBCUs (Fegain et al., 1996). According to Cabrera et al. (1999), African American students must continuously navigate the perceptions of prejudice and discrimination that are unique to minorities and are key factors in the adjustment to college, which in turn, may affect student retention.

Learning Communities

In the 1990s, there was a re-emphasis on academics and student learning. Many retention efforts reflected the renewed focus on student learning through the development of learning communities in which students who lived in dormitories together also took classes together (Berger & Lyon, 2005). The implementation of learning communities, especially for first-year students, can have a positive effect on student persistence, therefore resulting in increased student retention rates (Tinto, 2000).

Learning communities also provide a means for students to engage socially with the institution. Tinto (1993) stressed that engagement with the institution is an important factor in student retention. Learning communities are mechanisms that provide nurturing and supportive environments to increase retention rates. A learning community environment can be useful not only for at-risk students, but for the general freshmen student population. Many researchers believe that “knowledge is constructed by humans through social interaction. Education, therefore, should be based in learning communities where teachers and students act interdependently to construct meaning and understanding. The best learning communities are classrooms where students are connected through meaningful conversations in cooperative

groups with each other and with their teachers” (Hesse & Mason, 2005, p.30). Also, many students fail to connect with the community of students and faculty, and thus have less than positive social and academic experiences (J.L. Johnson, 2001).

Definition of a Learning Community

Learning communities can be defined in several ways. They are best described as a cohort of students who enroll together in linked courses. Andrade (2008) defines learning communities as a type of block scheduling with the same group of students enrolled together in two or more courses. Cross (1998) defines learning communities as “groups of people engaged in intellectual interactions for the purpose of learning” (p. 4). Learning communities can also be described as “linked courses that seek to encourage integration of the curriculum to help students establish academic and social support networks, and bring the faculty together to collaborate in meaningful ways” (Harrison, Jr., Moore, & Evans, 2006, p. 623). Hesse and Mason (2005) use the definition described by Gabelnick et al., which is “the purposeful restructuring of the curriculum by linking or clustering courses that enroll a common cohort of students. This represents an intentional restructuring of students’ time, credit, and learning experiences to build community and foster more explicit connections among students, faculty and disciplines” (p. 30). In Laufgraben and Shapiro (2004), a learning community is defined as “...any one of a variety of curricular structures that link together several existing courses-or actually restructure the material entirely-so that students have opportunities for deeper understanding and integration of the material they are learning, and more interaction with one another and their teachers as fellow participants in the learning enterprise” (p. 2).

Common Characteristics of Learning Communities

The foundation of learning communities is linked courses. These linked courses are commonly organized around a theme with shared and connected learning as curriculum goals, and are applicable to any content. Learning communities share a variety of features in regard to structure, participants, curriculum, pedagogy, and co-curricular involvement. However, implementation of these features varies widely among institutions, as they adapt the learning community model to fit their own students and learning objectives, as described in the following discussion (Andrade, 2008).

According to Buch and Spaulding (2008), most learning communities have three things in common: shared knowledge, shared knowing, and shared responsibility. Shared knowledge and shared knowing are concurrently achieved through co-enrolling students in two or more courses organized around a theme or discipline. Shared responsibility is achieved through collaborative group projects and group process learning activities. Likewise, Andrade (2008) adds that in shared learning, students work collaboratively to learn material, as opposed to connected learning which refers to the integration of knowledge from different disciplines. Additionally, learning communities are positively linked with students more frequently interacting with faculty members, engaging in diversity-related activities, and having classes that emphasize higher order thinking skills (Zhao & Kuh, 2004).

Learning Community Models

There are four commonly described approaches or models that describe the configuration of learning communities. These are (1) paired or clustered courses, (2) cohorts in large courses or Freshman Interest Groups (FIGs), (3) team-taught programs, and, (4) residence-based (Laufgraben & Shapiro, 2004). Each of these approaches is discussed in greater detail.

Paired or clustered courses link individually taught courses through cohorts and/or block scheduling. Paired learning community models link two courses together and are considered a basic approach to learning communities in terms of curricular integration. The course offerings tend to be existing courses that traditionally enroll first year students. One of the two courses is usually a basic composition or communications course. The paired model typically enrolls a group of 20-30 students (Andrade, 2008; Laufgraben & Shapiro, 2004).

The clustered courses learning community model expands upon the paired course model by linking three or four individually taught courses around a theme. This model also enrolls cohorts of 20-30 students in which one course tends to be a writing course and the cluster usually includes a weekly seminar. The weekly seminar plays an important role in helping students and faculty to build curricular connections between the courses. Also, some cluster models include larger lecture-type courses in which the student cohort enrolls as a subset but then also enrolls in a smaller cluster-only seminar or writing class (Andrade, 2008; Laufgraben & Shapiro, 2004).

Another type of learning community model described by Laufgraben and Shapiro (2004) is the Freshman Interest Groups or FIGs. This model is the simplest learning community model in terms of organization and cost. FIGs work well at large universities or at institutions where freshmen are typically enrolled in at least one or two large lecture courses in which the learning community students represent a subset of the total enrollment. When a large lecture course also requires enrollment in a smaller recitation or discussion course, FIG students are typically enrolled in a designated learning community section whereby an undergraduate peer teacher often leads the weekly seminar. The seminar provides an opportunity to address issues of transition to college, orientation, and the development of academic skills. FIGs also create a

mechanism for students to have formal social interaction with one another, faculty, and staff (Bean & Eaton, 2002).

The team taught model is a third type of learning community approach, which is also known as the coordinated studies programs. This type of model enrolls varying numbers of students in two or more courses organized around an interdisciplinary theme. It represents the most extensive approach in terms of curricular integration and faculty involvement which may require full-time faculty and student involvement. Themes are faculty generated and interdisciplinary; they may be broad or liberal arts based. This learning community model emphasizes skill development in related disciplines and prepares students for study or practice in professions. Enrollment in this learning community model can range from 40-75 students. Cohorts are often subdivided into smaller seminar groups to achieve a faculty-to-student ratio of one faculty member to 20-25 students (Laufgraben & Shapiro (2004).

The last type of learning community model is the residence-based model. In this model, the primary goal is the integration of students' living and academic environments. Intentionally organized student cohorts enroll in specified curricular offerings and reside in dedicated living spaces. This type of learning community is designed to integrate diverse curricular and co-curricular experiences. This model may be the most radical of the four models discussed because it requires change within multiple university systems: curriculum, teaching, and housing (Laufgraben & Shapiro, 2004).

Overall, learning communities take one of four generic forms:

1. Curricular learning communities are made up of students co-enrolled in two or more courses that are linked by a common theme.

2. Classroom learning communities treat the classroom as the locus of community-building by featuring cooperative learning techniques and group process learning activities as integrating pedagogical approaches.
3. Residential learning communities organize on-campus living arrangements so that students taking two or more common courses live in close physical proximity, which increases the opportunities for out-of-class interactions and supplementary learning opportunities
4. Student-type learning communities are specially designed for target groups, such as academically underprepared students, historically underrepresented students, honors students, students with disabilities, or students with similar academic interests, such as women in math, science, and engineering. (Lenning & Ebbers, 1999, p. 116)

Cultural Perspectives of Learning Communities

Learning communities impact student retention from a cultural perspective. According to Kuh and Love (2000), all groups and organizations, including colleges and universities, over time develop cultures that are widely accepted ways of doing things which shape how people think and behave. In higher education, culture can be thought of as “the collective, mutually shaping patterns of norms, values, practices, beliefs, and assumptions that guide the behavior of individuals and groups... and provide a frame of reference within which to interpret the meaning of events and actions on and off campus” (Kuh & Whit, 1988, pp. 12-13 as cited in Kuh & Love, 2000). From a cultural perspective, then, when an individual joins a group, interactions between people influence the larger institutional environment and its sub-environments (Kuh & Love, 2000).

Attinasi and Hurtado and also Carter indicate in Kuh and Love (2000) that one advantage of using a cultural perspective to examine student retention is that it accounts for student behavior resulting from the interactions of cultural properties, and the effects of these interactions on process variables – involvement, effort, and perceived. By using a cultural lens, the issue of student retention is defined primarily as a sociocultural phenomenon, rather than an individual, psychological experience.

Learning communities support Tinto's theory of student involvement or integration, as the integration perspective emphasizes consensus, i.e. those activities and interpretations about which almost everyone agrees or sees the same way. This differentiation perspective demonstrates that within any group of adequate size and with some history, subgroups determine which values, attitudes, and norms that differ to varying degrees from those of the larger dominant group and other subgroups (Kuh & Love, 2000). Similarly, Tinto's theory implicitly supports an integration view of culture in that students are expected to adapt to the institution's dominant cultural code or norms in order to succeed, be satisfied, and persist. Conversely, the more marginal one's group is to the life of the college, the more likely one perceives oneself as being separate from the institution, which results in student attrition (Kuh & Love, 2000).

Summary

Institutions of higher education in the United States were established as early as the late 1600s; however, student retention was not a focus as institutions during this time were established primarily for the purpose of preparing men for the ministry. With institutions of higher education floundering over the eighteenth and nineteenth centuries, student retention was not a concern until the 1930s. Tremendous enrollment growth in colleges and universities occurred in the 1950s which was spurred by key government initiatives as well as the post-war

baby boom. In the 1960s, Spady's publication established the study of student retention from a sociological base as opposed to a psychological base, as well as seeing student retention as an interaction between the student and the institutional environment. Starting with the 1970s, Tinto's sociologically based interactionist theory brought the study of student retention to the forefront.

The implementation of learning communities at colleges and universities is one strategy established to support student retention. In learning communities, student cohorts enroll in two or more courses together to build community and connections among students. Learning communities can provide support for students to transcend and adjust to the culture of the institution, including at-risk African American students.

Statement of the Problem

Graduation rates for four-year institutions in the United States are provided from the National Center on Educational Statistics (Ginder & Kelly-Reid, 2013). For student cohorts that began in fall 2006, the overall six-year graduation rate for four-year institutions was 59.2 %. Specific to four-year public institutions, the six-year graduation rate was 57.2 %. For African American students, the overall national graduation rate for this same institution type was 39.7 %, while the graduation rate for White students was 60.2%. At Metropolitan Urban University (MUU), the gap in graduation rates between the national average and African American students was even greater. The overall six-year graduation rate for students who entered MUU in fall 2006 to pursue a bachelor's degree was 28.1 %. However, for African American students in this same cohort, only 9.2 % completed their bachelor degree within six years, in comparison to a four times greater graduation rate of 38.5 % for White students (Office of Budget, Planning, & Analysis 2003-12). The purpose of this research was to examine if learning community

participation for first time in any college (FTIAC), at-risk, African American students in fall 2006 had an effect on six-year graduation rates. This study will use a non-experimental, retrospective, descriptive research cohort design, comparing institutional data from the fall 2006 cohort.

Research Setting

Metropolitan Urban University (MUU) is a public, urban, primarily commuter, research institution located in the midtown section of a large, Midwestern city in the United States. MUU draws a majority of its students from a three county area. Average fall enrollment is 30,000 for each fall semester that includes 25% African American students. MUU is a member of the Coalition of Urban Metropolitan Universities (CUMU), an organization comprised of public urban research universities that are located in metropolitan areas with populations of at least 450,000 (www.cumuonline.org).

MUU created the Alternative Admissions Division (AAD) in 1969 to provide “access to degree programs for recent high school graduates and returning adults who do not meet minimum University admission requirements” (MUU Undergraduate Bulletin, 2005-07, p. 54), which is a minimum high school GPA of 2.75, or a high school GPA between 2.00 and 2.74, and an American College Testing (ACT) standard composite score of at least 21. Students were not automatically admitted to the AAD if they did not meet the minimum institution admissions requirements, but were advised of the AAD through high school visits by the AAD admissions staff and/or were referred to the AAD through the MUU undergraduate admissions office. Applicants to the AAD also had to demonstrate proficiency on the AAD assessment test and earn a minimum score to be admitted (e.g. if they did not place into the developmental writing course, they were not admitted). Students were accepted into the AAD only during the fall semester.

AAD students were enrolled through the MUU's College of Liberal Arts and Sciences and were eligible to transfer into other schools and colleges within MUU after satisfactorily completing AAD program requirements (AAD associate director, personal communication, July 15, 2013; MUU Undergraduate Bulletin, 2005-07).

In fall 2006, the AAD initiated a learning community component for incoming cohorts as part of a university wide initiative by MUU's Office of Undergraduate Affairs to be "learning focused and community orientated" (AAD Final Report, 2006-07). The AAD learning communities were designed to enhance the first-year experience of newly admitted students in order to increase their chances of persisting to graduation. In particular, the AAD learning communities were formed to address six areas critical to student success: study habits; communication skills; student awareness of university guidelines and policies; racial, gender and ethnic tolerance; feelings of isolation; and responsibility for one's actions (AAD associate director, personal communication, July 13, 2012).

AAD students were informed about the learning communities at the new student orientations that were scheduled throughout the summer preceding the fall 2006 semester. Students voluntarily participated in the learning community. The AAD used the paired course learning community model, which linked the Learning to Learn® (LTL) course, a two-credit hour learning strategy skills course, with developmental English, offered at a MUU extension location, or developmental mathematics, taught on the MUU main campus (AAD associate director, personal communication, July 15, 2013; www.learningtolearn.com; AAD Final Report, 2006-07; Ward, 2002). Students who were not participants in the learning community were also required to enroll in the LTL course, however, it was not paired with another course. Twenty

sections of LTL were offered in fall 2006. Each section was limited to 25-30 students and had an average enrollment of 19 students (Banner, 2012).

Research Questions

This research will examine the six-year persistence of the FTIAC cohort of students admitted to MUU's alternative admission program in fall 2006 and who participated in a learning community versus students who did not participate in the learning community.

The hypotheses developed to examine this persistence follow:

1. Among alternative admissions college students, is there a difference in the six-year retention rates for students who participated in learning communities as compared to students who did not participate in a learning community?
2. Among alternative admissions college students, is there a difference in the number of credit hours earned for students who participated in learning communities as compared to students who did not participate in a learning community?
3. Among alternative admissions college students, is there a difference in cumulative GPA for students who participated in learning communities as compared to students who did not participate in a learning community?

Significance of the Study

The population of the core city where MUU is located is comprised of many ethnic groups, with African Americans being the most predominant. This research will assist MUU in providing longitudinal data on the effectiveness of requiring learning communities for incoming cohorts, especially at-risk African American students. Specifically, this research can provide data to determine whether learning communities positively affect student retention and graduation outcomes for the African American at-risk students at institutions such as MUU. The results of this research can aid in examining the cost effectiveness of implementing learning communities as they relate to the population studied. Moreover, this study will add to the body of research in

determining if there are significant differences for at-risk students who participate in learning communities on a voluntary or required basis.

Limitations of the Study

The generalizability of this study may be affected by the following:

- The focus of this research was on a paired learning community. The research results would only be generalizable to this learning community type.
- This research concentrated on at-risk African American students; therefore, the results may not be applicable to students of other races and ethnic groups or socioeconomic status.

Assumptions of the Study

The following is assumed for this study:

- The students enrolled in the alternative admissions program in the fall 2006 cohort had not participated in a paired learning community prior to enrolling at MUU.
- The students enrolled in the alternative admissions program in the fall 2006 cohort were not eligible for regular admission to MUU.

Definition of Terms

Term	Definition
Academically underprepared	Used to describe students who do not meet the regular admissions criteria
African American or Black	Used interchangeably to describe students whose ancestry originates from the continent of Africa
American College Testing (ACT)	Standardized test used by colleges and universities that assesses student achievement related to the high school curricula
Attrition	Refers to students who fail to reenroll at an institution in

	consecutive semesters
At-risk	Students who are minority, first-generation, and from low socioeconomic backgrounds
Academic probation	Refers to a student whose cumulative GPA falls below 2.0 but is allowed to remain enrolled
Academic dismissal	Refers to a student who is not permitted by the institution to continue enrollment
Credit hours earned	Total number of credit hours completed
Dropout	A student whose initial educational goal was to complete a least a bachelor's degree but who did not complete it
FTIAC	First Time in Any College student
Cumulative grade point average	Calculated by assigning points to letter grades, then dividing the sum of points by the total of earned credit hours
Graduation rate	The percentage of students who graduate in a specified cohort within a designated period of time
Historically Black College or University (HBCU)	An institution created prior to 1964 whose primary mission is to educate Black students as defined by the Higher Education Act of 1965
Learning community	A type of block scheduling with the same group of students enrolled together in two or more courses
Mortality	The failure of students to remain in college until graduation
Non-traditional student	A student over the age 25 and over, works full-time, and/or has a family
Persistence	The desire and action of a student to stay within the system of higher education from beginning year through degree completion
Predominately White Institution (PWI)	Institution where the majority of the students enrolled are White
Retention	The ability of an institution to retain a student from admission to the university through graduation

Stopout	Refers to a student who temporarily withdraws from an institution or system
Traditional student	Students under 25 years of age
Withdrawal	The departure of a student from a college or university campus within a semester

(www.act.org; Albritton, 2012; Andrade, 2008; Berger & Lyon, 2005; Cabrera et al.,1999; Pascarella, Pierson, Wolniak, & Terenzini, 2004; Pike & Kuh, 2005)

CHAPTER 2

REVIEW OF THE LITERATURE

Introduction

An inclusive review of the literature on student retention and persistence of college students is discussed in this chapter. Beginning with the theoretical framework that conceptualizes the present research, the following topics are presented: Student Retention and Persistence, Learning Communities, African American Students in Higher Education, Commuter Students, and Academically At-Risk Students.

Theoretical Framework

There is a wealth of research studies that addresses student persistence in postsecondary institutions. Numerous models and theories of student retention and persistence have been formulated from various perspectives. For this research, the focus is on the theories of student departure and integration (sociological), student attrition (organizational), and self-determination (psychological).

Tinto is widely recognized throughout the literature for his views on student attrition and persistence, which have resulted in the *Theory of Student Departure*, *Student Integration Model*, and *Interactionist Theory* (Ackerman & Schibrowsky, 2008; Braxton, Hirschy, & McClendon, 2004; Kuh & Love, 2000; Tinto, 1988, 1993). Tinto's (1988, 1993) theory of student departure is based on Van Gennep's studies of the rites of membership in tribal society. Van Gennep's classic, *The Rites of Passage*, argued that the process of transmission of relationships between succeeding groups was marked by three distinct phases or stages, each with its own specialized ceremonies and rituals. These rites of passage were referred to as the stages of separation,

transition, and incorporation. Each stage, therefore, served to move individuals from “youthful participation to full membership in adult society” (Tinto, 1988, p. 440).

Each stage in Van Gennep’s rites of passage to adulthood consisted of a change in patterns of interaction between the individual and other members of society, as described below:

The first stage, separation, involves the separation of the individual from past associations and is characterized by a marked decline in interactions with members of the group from which the person has come. The second stage, transition, is a period during which the person begins to interact in new ways with members of the new group into which membership is sought. It is during this transitional stage that individuals come to learn the knowledge and skills required for the performance of their specific role in the new group. The third and last phase, incorporation, involves the taking on of new patterns of interaction with members of the new group and the establishing of competent membership in that group as a participant member. (Tinto, 1988, p. 441)

According to Tinto (1988, 1993), referencing the work of Van Gennep provided a framework to understand the longitudinal process of student persistence in college and by extension, the time-dependent process of student departure. Van Gennep’s concept of individuals becoming new members of a community was conceptually similar to that of becoming a student in a college. Like Van Gennep’s *Rites of Passage*, Tinto (1988, 1993) proposed, then, that the process of institutional persistence can also be seen as consisting of three major stages or passages – separation, transition, and integration – which students typically must pass through in order to complete their degree programs.

Separation, the first stage of the college career, requires new students to disassociate themselves, in varying degrees, from membership in the past communities. Most typically, these associations are those with the local high school and/or place of residence. The process leads to the adoption of the behaviors and norms appropriate to the college and almost always requires some degree of transformation and perhaps rejection of those behaviors and norms of the past community. New college students have to disassociate themselves physically as well as socially

from their past community in order to become fully integrated into the new community (Tinto, 1988, 1993).

The separation stage may differ for students who stay at home while attending college. They are not required to disassociate themselves completely from their local communities in order to establish membership in the new communities of the college. However, they may be unable to take full advantage of the new communities for integration into the social and intellectual life of the college. Additionally, if family or local peer groups do not support the individual's participation in the college community, early separation and transition may become measurably more difficult (Tinto, 1988, 1993).

Transition to college, the second major stage of the college career, is seen as a period of passage between the old and the new or, specifically, between associations of the past and for desired associations with communities of the present. Stress and sense of loss and bewilderment, if not desolation, can sometimes accompany the transition to college, as well posing serious problems for the individual attempting to persist in college. Some students may find it quite difficult to cope with these adjustments, due to differences in individual coping skills and in educational goals and commitments. Because of individual responses to the stresses of separations and transition, students often begin to flounder. They withdraw without having made a serious attempt to adjust to the life of the college, as they seek to achieve membership in the communities of the college which are very different from their communities and/or schools. The same may also apply to students who reside at home during college (Tinto, 1988, 1993).

In the last stage, integration, students are faced with the problem of finding and adopting norms that are appropriate to the new college setting, and establishing competent membership in the social and intellectual communities of college life. Individuals are required to establish

contact with other members of the institution, including students and faculty alike. The failure to establish these contacts may lead to a sense of isolation, which in turn can lead to departure from the institution (Tinto, 1988, 1993).

Tinto (1988, 1993) surmises that although individuals in college are not often provided with formal rituals and ceremonies when they matriculate to post-secondary institutions, most institutions, especially residential ones, do provide a variety of formal and informal mechanisms to assist with the acclimation process, such as orientation programs. In addition, there are other types of programs that serve to provide individuals with opportunities to establish repetitive contact with other members of the institutions in circumstances which lead to the possibility of integration. Examples include fraternities, sororities, student dormitory associations, student unions, frequent faculty and visiting scholar series, extracurricular programs, and intramural athletics.

But according to Tinto (1988, 1993), all new students are not capable of making integrative contacts on their own. Thus, they do not become incorporated into the life of the college, and without assistance, are unable to establish competent and social membership in the communities of the college. The end result, unfortunately, is that many of these students eventually leave the institution.

Tinto's theory of student departure gave rise to the student integration model and interactionalist theory. The student integration model is comprised of two constructs, academic and social integration. These constructs determine how well students integrate into the social system and academic communities of the college campus. Student attrition is most likely to occur when there is incongruence between the intellectual orientation of the student and the college's academic character (Ackerman & Schibrowsky, 2008; Kuh & Love, 2000).

Similarly, in Tinto's interactionist theory, it is postulated that student departure is viewed "as a longitudinal process that occurs because of the meanings the individual student ascribes to his or her interactions with the formal and informal dimensions of a given college or university" (Braxton, Hirschy, & McClendon, 2004, p.7). More specifically, in the interactionist theory, students possess various individual characteristics. As they enter college, these individual characteristics directly influence their departure decisions, as well as their initial commitments to the institutions and to the goal of college graduation (Braxton, et.al, 2004).

Like the student integration model, the key components of Tinto's interactionist theory are academic integration and social integration. Academic integration consists of structural and normative dimensions. Specifically, in structural integration, students incorporate meeting the explicit standards of the college or university, whereas in normative integration, students begin to identify with the beliefs, values, and norms inherent in the academic system. In contrast, social integration is the extent of congruency between the individual student and the social system of a college or university. Tinto postulates that social integration occurs both at the level of the college or university and at the level of a subculture of an institution. Therefore, Tinto theorizes that the greater the student's level of academic integration, the greater the level of subsequent commitment to the goal of college graduation. Likewise, the greater the student's level of social integration, the greater the level of subsequent commitment to the local college or university (Braxton, et. al, 2004).

A criticism of Tinto's integrationist theory is that it emphasizes a consensus perspective, that is, those activities and interpretations about which almost everyone agrees or sees the same way. Instead, the differentiation perspective shows that within any group of adequate size and with some history, subgroups develop with values, attitudes, and norms that differ to varying

degrees from those of the larger dominant group and other subgroups (Kuh & Love, 2000). Kuh and Love (2000) also expressed that the leading model of student departure lacks robust empirical support, may be inadequately operationalized, and is based on assumptions that understate institutional responsibility for creating hospitable learning conditions.

Bean's *Industrial Model of Student Attrition* is a retention model that attempts to explain student departure in higher education from an organizational perspective, and is based on Price and Mueller's model of employee turnover in work organizations (Bean, 1980, 1983; Braxton & Hirschy, 2005). The key concept of this model is that students drop out of college for reasons similar to why employees leave organizations. In the *Industrial Model of Student Attrition*, exogenous variables - organizational, personal, and environmental - influence satisfaction, which in turn influences a student's intent to leave. Intent to leave then has a direct impact on a student's decision to persist in college. "An important feature of Bean's model is that it assigns a role in the drop out decision external to the college influences and non-intellectual factors" (Ackerman & Schibrowsky, 2008, pp. 311).

Similarly, Berger (2001) examined student retention from an organizational behavior perspective, with the assumption that colleges and universities are organizations. Berger used the phrase "organizational behavior," to describe the actions of organizational agents (faculty, administrators, and staff) at a college or university. Therefore, the organizational behavior perspective is an appropriate framework for gaining useful insights into how undergraduate retention can be improved on college and university campuses. Berger examined existing organizational studies of undergraduate persistence in an effort to identify empirically-based recommendations regarding how knowledge of organizational behavior at colleges can be used to improve student retention on college and university campuses.

Berger (2001) found that there is not one, but many, theories of organizational behavior that apply to the college environment. Collectively, following are five core dimensions that describe the nature of organizational behavior at any particular college or university campus:

- *Bureaucratic dimension* - emphasizes rationality in organizational decision-making through an emphasis on the use of formal structure manifested in rules, regulations, hierarchy, and goals
- *Collegial dimension* - describes organizational behavior in terms of collaboration, equal participation, concern for human resources and the use of consensus to establish goals and make other important decisions
- *Political perspective* – organizational behavior emerges from competition for resources and the existence of varied interest among individuals and groups within an organization
- *Symbolic dimension* – focuses on the roles of symbols (stories, myths, logos, ceremonies) in creating meaning within organizations
- *Systemic dimension* – provides an open systems view of the organization which suggests that what happens inside of an organization can be best understood by recognizing how the organizational system and its component sub-systems, interact with and relate to broader systems in the external environment. (Berger, 2001, pp.4-5)

Bean and Eaton (2002) offer a psychological perspective to student retention. This perspective is based on four psychological processes that lead to academic and social integration. These processes are: positive self-efficacy, handling stress, increasing efficacy, and internal locus of control. Bean and Eaton suggest that these psychological perspectives shape entering students' perceptions of college and university life. Bean and Eaton stress the importance of

institutional provisions for service-learning, freshman interest groups and other learning communities, freshman orientation seminars, and mentoring programs to support student success

Similarly, Deci and Ryan's (2008) Self Determination Theory (SDT) can also be used to explain student attrition from a psychological perspective. Issues such as "personality development, self-regulation, universal psychological needs, life goals and aspirations, energy and vitality, nonconscious processes, the relations of culture to motivation, and the impact of social environments on motivation, affect behavior and well-being" (p. 182) are addressed by SDT. Deci and Ryan (2008) postulate that the foundation of SDT is between autonomous motivation and controlled motivation. Autonomous motivation includes both intrinsic motivation and extrinsic motivation in which an activity has value. Thus, autonomous motivation becomes integrated into one's own sense of self. Conversely, controlled motivation consists of both external regulation and introjected regulation. External regulation is described as behavior that is a function of external contingencies of reward or punishment, whereas, in introjected regulation, the regulation of action has been partially internalized and becomes energized by factors such as an "approval motive, avoidance of shame, contingent self-esteem, and ego-involvements (p. 182). SDT recognizes that extrinsically motivated actions can also become self-determined as individuals identify with and fully assimilate their regulation. Therefore, individuals can be extrinsically motivated while also being committed and authentic (Ryan & Deci, 2000).

Guiffrida (2006) focuses on the "relation of culture to motivation" concept of SDT as it relates to minority students. The goal of SDT is to "integrate social and cross-cultural psychological principles into Tinto's theory of student departure with the goal of strengthening it, enhancing its cultural sensitivity, and making it more descriptive of minority student academic achievement and persistence" (Guiffrida, 2006, p. 453). First, it is important to explore the

differences between collectivist and individualist cultures and societies. Collectivist societies value interdependence, group harmony, and emotional attachment within the in-group. In contrast, individualist societies value independence, competition, and emotional detachment from one's in-group, and personal goals take precedence over the in-groups. Western cultures (e.g. United States, Canada, Great Britain) tend to be more individualist, while many non-Western cultures (e.g. Africa, Latin America) tend to be more collectivist. Collectivist values still tend to influence African Americans, Latino Americans, Native Americans, and Asian Americans, not only as a continuation of indigenous values, but also as a way for members of these groups to cope with racial oppression and socio-economic challenges (Guiffrida, 2006).

The need for minority students to connect with students with shared cultural backgrounds is supported in the research (Guiffrida, 2006). In higher education, culture can be thought of as “the collective, mutually shaping patterns of norms, values, practices, beliefs, and assumptions that guide the behavior of individuals and groups... and provide a frame of reference within which to interpret the meaning of events and actions on and off campus” (Kuh and Whit, 1988, pp. 12-13 as cited in Kuh & Love, 2000). Tinto upholds an integration view of culture in his *Integrationist Theory* by expecting students to adapt to the institution's dominant cultural code or norms in order to succeed, be satisfied, and persist. Conversely, the more marginal one's group is to the life of the college, the more likely one will perceive oneself as being separate from the institution (Kuh & Love, 2000).

The theoretical basis for understanding the potential effects of first-generation student status on the experience and outcomes of college can be viewed through the related lenses of cultural and social capital. Cultural capital is the “degree of ease and familiarity that one has with the ‘dominant’ culture of a society” (Pascarella, Pierson, Wolniak, & Terenzini, 2004, p.

252) whereas social capital is “a form of capital that resides in relationships among individuals that facilitate transaction and the transmission of different resources. (Pascarella, et al., 2004, pp. 251-252).

Kuh and Love (2000) delineate eight propositions that were consistent with the research on college student persistence as interpreted through a cultural lens. The purpose of these propositions was heuristic, in that they do not constitute a theory, nor are they products of an exhaustive, comprehensive account of all cultural influences on persistence. Kuh and Love (2000) provided a brief overview of the propositions that follow. In proposition 1, the focus is on the role of the individual in understanding and engaging with an institution’s culture. For propositions 2 and 3, the emphasis is on the different cultural backgrounds or cultures of origin of students, and that colleges and universities are made up of multiple, overlapping cultures. For propositions 4, 5, and 6, the concept of cultural distance is addressed, which is one of many issues that students face when they go to college. Finally, in propositions 7 and 8 the process of cultural connections that are necessary to succeed in college are articulated (Kuh & Love, 2000).

1. The college experience, including a decision to leave college, is mediated through a student’s cultural meaning-making system.

An institution’s structural or organizational properties per se do not induce premature student departure. Rather, it is what students make of them that determines their affective and behavioral responses.

2. One’s cultures of origin mediate the importance attached to attending college and earning a college degree.

New students try to understand their new environments using an interpretive scheme or sense-making system developed through experiences in their cultures of origin.

When the values of one’s cultures of origin support the goals of college education, they encourage persistence.

3. Knowledge of a student's cultures of origin and the cultures of immersion is needed to understand a student's ability to successfully negotiate the institution's cultural milieu.

Prior experiences play a major defining role in determining whether and where a student goes to college and whether he/she will persist to graduation.

Cultures of origin are primary sources of cultural capital related to higher education – intellectual resources, interpersonal resources, and physical resources.

4. The probability of persistence is inversely related to the cultural distance between a student's culture(s) of origin and the cultures of immersion.

Most students attend college within two hundred miles of where they went to high school or their families live.

Geographical distance is not the same as cultural distance.

For some students, the cultural distance is negligible because college-going was stitched into the fabric of their cultures of origin.

5. Students who traverse a long cultural distance must become acclimated to dominant cultures of immersion or join one or more enclaves.

Through a process of socialization, newcomers come to adopt values, attitudes, beliefs, and assumptions of the groups or institutions they are joining.

This view is consistent with the traditional notion of social and academic integration in that students are expected to move toward the cultures of the institutions in order to succeed and survive.

6. The amount of time a student spends in one's cultures of origin after matriculating is positively related to cultural stress and reduces the chances they will persist.

Many students who live at home or nearby while attending college do not travel the cultural distance between their cultures of origin and institutional cultures of immersion.

Rather, many simply add an additional sphere to their existing cultural universe, which may require renegotiating competing values, expectations, and assumptions as well as juggling competing roles and time demands.

7. The likelihood a student will persist is related to the extensity and intensity of one's sociocultural connections to the academic programs and to affinity groups.

Students navigate cultural distance by connecting to an institution's culture in some fashion. However, connecting to the institution differs to an important

degree from being integrated into the institution's culture, which is more akin to what Hurtado and Carter (1997) call a "sense of belong."

8. Students who belong to one or more enclaves in the cultures of immersion are more likely to persist, especially if group members value achievement and persistence. (p. 201)

As Tinto (1993) suggests, one way that students manage cultural distance is to join enclaves or affinity groups that have values, attitudes, beliefs, and assumptions similar to those of the students' cultures of origin, or those the students find appealing. (Kuh & Love, 2000, pp. 201-207)

Institutions can reduce the cultural distance for students by cultivating "communities of difference," as suggested by Tierney in Kuh and Love (2000), embracing the multiple cultures that already exist, and encouraging the development of others. By examining student departure from a cultural perspective, researchers, policy makers, and institutional leaders will have a better understanding of the complex phenomena that influence the decision process and reveal aspects of institutional functioning that can be changed to promote higher rates of student persistence and educational attainment (Kuh & Love, 2000).

Student Retention and Persistence

There is an abundance of literature that focus on retaining first-year students to the second year. However, there are limited studies that address retention beyond the sophomore year. Longitudinal studies on persistence to degree completion are necessary in order to ascertain the long-term effectiveness of first-year retention programming efforts.

Bell, Reisen, and Zea (1999) conducted a longitudinal study that examined students' self-reported academic and social integration and commitment to remain at the university to predict their retention at the end of their junior year. The hypothesis in this study was whether commitment mediates the influence of academic and social integration on retention. Bell et al. (1999) undertook this research as they surmised that many of the research designs that exist are

either not longitudinal or they are limited to focusing on first-year retention rates, which emphasizes early adaption.

The participants in this study consisted of 512 first-year, full-time residential students at a mid-sized, predominantly White, private, coeducational research university. The median age of the participants was 18 years old. Based on gender, 60% were females and 40% were males. The ethnic composition of the group was 76% White, 13% Asian American, 8% African American, and 3% Latino (Bell, Reisen, & Zea, 1999).

Of the students in the original sample, 74% were still enrolled by the sixth semester. An analytic approach as described by Baron and Kenny as cited in Bell, et al. (1999) was used to test the hypothesis that commitment mediates the impact of integration on retention. In other words, it is necessary to first demonstrate that integration (the predictor) is associated with commitment (the mediator); second, that commitment (the mediator) is associated with retention (the outcome); and finally, that when the relationships demonstrated in the first two steps are controlled, the previously significant association between integration (the predictor) and retention (the outcome) is weakened (Bell, et al., 1999).

Tinto's (1993) model of student departure is supported by these results of this longitudinal study. Commitment to remain in school, as reported in the first semester, mediated the impact of early academic and social integration on retention three years later. Thus, the hypothesized mediational role of commitment was confirmed. Although past research has indicated that academic and social integration are associated with retention, this study demonstrated that they do not have a direct impact on retention, but influence students' level of commitment to the university. Ultimately, it is students' level of commitment, not the extent of their academic and social integration, which has a direct impact on retention (Bell, et al., 1999).

Robinson (2004) examined a longitudinal pathways approach to individual patterns of enrollment and completion. This study was outlined in three parts. In the first part, the approach to identifying and representing individual student “pathway” patterns was outlined. In the second part, the variety of student pathways through a selected university degree course was demonstrated. For the final part, the advantages of a “pathway” approach in the interpretation of student performance was illustrated. The main purpose of this study was to demonstrate the technique and show the potential application to larger longitudinal studies of student progress and retention.

Student enrollment data were gleaned from a five-year undergraduate professional university course, over the period from 1994 to 2000. The data included students enrolling for the first time in the course in 1994. Students categorized as “commencing” at the beginning of the first year of the course in 1994 formed the base cohort (N = 72). Each student’s completion status at the end of each year for the total enrolled units of study for that year was coded into the following categories: all enrolled units of study completed; all enrolled units of study not completed; changed enrollment or transferred to another degree course within the university; and no enrollment in any unit of study (Robinson, 2004).

A student’s status at the beginning of the following year was based on that student’s completion data at the end of the previous academic year. Information from indicators of enrollment and completion status at the beginning of the year and the end of the previous year were amalgamated into six categories: 1) commencing student (first year of enrollment only); 2) continuing with no repeats; 3) unit of study repeat(s) following failure; 4) stop-out (temporary); 5) transfer (enrollment in another degree course at the same university); 6) no enrollment at the university (Robinson, 2004).

Each student's enrollment status over the five previous calendar years was represented by a series of codes. For each student, the pattern of five digits represents their pathway of course progression. It is important to note that the demonstration was concerned with pathways of the initial enrollment cohort of 1994 for this degree course. To summarize, information on individual study, yearly enrollment, and unit of study completions was aggregated into pathway patterns at the student level. A frequency analysis of these individual pathway patterns represented the frequency of occurrence of student pathways at the course level (Robinson, 2004).

Fifteen different student pathway patterns of course progression spanning the five years following initial course commencement resulted. Common pathways within the course and the timing of changes in enrollment were shown through a frequency analysis of individual pathway patterns. The majority of students ($n = 42$, 58.3%) followed a straight path. A small percentage ($n = 8$, 11.1%) failed some course units over the five year span. Similarly, a small percentage ($n = 8$, 11.1%) dropped out temporarily, or 'stopped-out'. This identifier was used to distinguish these students from those who failed to return by the end of the five years (Robinson, 2004).

Six students stopped out of the course pathway at various stages and had not re-enrolled at the university by the year 2000, which was seven years following initial enrollment. Transfer to another course was the option of $n = 8$, (11.1%) of the initial course enrollment. Most of these students did return to the initial course following a year in their transfer course. Completion of course progression in five years was achieved by 58.3% of students (Robinson, 2004).

Robinson (2004) concluded that the pathway approach provided a means of documenting both the process and outcomes of student progression. A variety of pathways experienced by higher education students were categorized according to how students make their way through

their studies. Student pathways may be influenced by a range of factors. Pathway patterns of enrollment and completion were used to examine information at the student level of the timing of failures, transfers, and withdrawals over the years following the first year of course enrollment. Recoding of data longitudinally at the student level rather than at the institutional level allows for complex and in many cases more appropriate, statistical techniques including structural equation modeling and multilevel techniques. Robinson (2004) recommended that the method for categorizing the pathways of students can form the basis of future research into which students travel different paths through higher education. Presenting pathways as patterns of successive enrollment and completion across the year of an entire course enrollment has the advantage of accurately indicating that specific year or years following course commencement, in which the changes in enrollment may occur.

Lotkowski, Robbins, and Noeth (2004) performed a study to identify which academic and non-academic factors had the greatest effect on college retention and performance. In order to do this, the researchers conducted a comprehensive review of research on the topic of postsecondary retention. After identifying more than 400 studies, 109 were included in this study based on the inclusion criteria, which are listed below:

- Examined the relationship between non-academic and academic factors and postsecondary retention.
- Focused on full-time students enrolled in four-year U.S. postsecondary institutions.
- Used standardized measures and reported all of the pertinent study information.

Lotkowski, et al. (2004) employed a meta-analysis technique to identify which non-academic factors had the most salient relationship to postsecondary retention. The researchers also identified the extent to which each factor predicted postsecondary retention. This allowed for the identification of those factors that were the best indicators of the risk for postsecondary dropout. The researchers also identified the relative contributions of the more

traditional academic predictors of college retention, including socioeconomic status (SES), high school GPA, and postsecondary readiness scores (ACT Assessment scores). Once identified, the salient non-academic factors, along with the more traditional academic factors, were examined to see which ones were the best indicators for students dropping out.

Non-academic and academic factors were used to analyze the data. Nine broad categories of non-academic factors were constructed to both structure the analysis and report the findings. Specifically, these nine categories were: academic self-confidence, achievement motivation, financial support, academic goals, academic-related skills, social involvement, institutional commitment, social support, and general self-concept. The academic factors used in the analysis were HSGPA and ACT Assessment scores. Socioeconomic (SES) status was also analyzed because it has been shown to be a potential influence on college retention and performance. Knowing a student's financial status helps institutions to determine whether that student needs to work in addition to receiving financial aid. Students who have financial problems and who need to work may be at greater risk of dropping out of college than those who are more financially secure (Lotkowski, Robbins, & Noeth, 2004).

The findings of this study were as follows. The non-academic factors of academic-related skills, academic self-confidence, academic goals, institutional commitment, social support, certain contextual influences (institutional selectivity and financial support), and social involvement all had a positive relationship to retention. The strongest factors were academic-related skills, academic self-confidence, and academic goals. The academic factors of HSPGA and ACT Assessment scores, and SES had a positive relationship to college retention, with the strongest factor being HSGPA, followed by SES and ACT Assessment scores. The overall relationship to college retention was strongest when SES, HSPGA, and ACT Assessment scores

were combined with institutional commitment, academic goals, social support, academic self-confidence, and social involvement (Lotkowski, et al., 2004).

In terms of performance, the non-academic factors of academic self-confidence and achievement motivation had the strongest relationship to college GPA. The overall relationship to college performance was strongest when ACT Assessment scores, HSPGA, and SES were combined with academic self-confidence and achievement motivation (Lotkowski, et al., 2004).

Lotkowski, et al. (2004) concluded that this study clearly shows that retention and performance are two very different college outcome processes. The researchers felt strongly that the study results support the use of both categories, retention and performance, when trying to improve college success. These college outcome processes highlight the key role that both academic and non-academic factors together have in college retention and performance. Their results demonstrate that the overall relationship to each college outcome (i.e. retention and performance) was stronger when these factors were combined.

Per these findings, Lotkowski, et al. (2004) suggest that although many support programs rely on traditional academic factors to identify students at risk of dropping out, this approach may be limited and may miss students who are at-risk due to other, non-academic factors. Also, the retention programs that focus primarily on helping students to master course content alone may only address immediate, rather than longer-term deficiencies.

The institutional characteristics of a college or university have been found to impact student retention. Goenner and Snaith (2003) analyzed the relative importance of institutional characteristics on producing positive student outcomes and to allow better comparison of an institution's performance versus predicted values.

Data used for the analysis in this study were obtained from the U.S. News and World Report's online version of America's Best Colleges, 2002; Integrated Postsecondary Education Data System (IPEDS) Fall 2000 Data File, and IPEDS Finance Data File for Fiscal Year 1995-96. The sample was 258 Carnegie I research universities which included significant institutional and student specific differences within this grouping. Multivariate regression analysis was used to study the determinants of aggregate graduation rates at the four-, five-, and six-year time frames. The independent variables considered were several measures of student preparation and motivation as well as measures of the academic environment. SAT scores, percentage of students who graduated in the top 10% of their school class, average age of the student body, and percentage of students from out-of-state were the student descriptors. Class size distributions, percentage of full-time faculty, percentage of faculty with a Ph.D., student-faculty ratio, institutional affiliation, degree of urbanization, and total educational and general expenditures were the institutional characteristics (Goenner & Snaith, 2003).

Listed below is a summary of the key findings of this study:

- The variables that reflect the student body's characteristics and abilities are all significant in explaining the variation of graduation rates for the universities in the sample.
- High school class ranking measure was positively and significantly related to graduation rates for all three horizons.
- The relationship to SAT scores was positive and significant with graduation rates across all horizons.
- Average age of the student is significantly and negatively related to graduation rates. As the average age of the students increased, the graduation rates of the institution fell.
- A higher student-faculty ratio was positively related to graduation rates for the five-year and six-year model; it was insignificant for the four-year model. (Goenner & Snaith, 2003, pp. 413-417)

Goenner and Snaith (2003) concluded that at Carnegie I institutions, student characteristics were all important determinants of graduation rates. Student-faculty ratios, the percentage of faculty that were full-time, total expenditures, and tuition and fees all have an impact on graduation rates. These factors become more relevant as the graduation horizon is extended from four to six years.

Titus (2004) addressed the limitations of prior research by examining the influence of the institutional context on undergraduate persistence at four-year institutions. The following research questions were addressed in this study:

1. What student characteristics, experiences, attitudes, and environment pull variables influence student persistence within a four-year college or university?
2. After taking into account individual student characteristics, experiences, attitudes, and environment pull variables, does the average change of student persistence vary between four-year institutions?
3. After taking into account student characteristics, experiences, attitudes, and environment pull variables, which aspects of the institutional context explain differences between 4-year institutions in the chance of student persistence?

The sample in this study consisted of student level data obtained from the 1996-1998 *Beginning Postsecondary Students (BPS 96/98)* survey, which is a longitudinal database sponsored by the U.S. Department of Education's NCES. The analytic sample used in this study was comprised of 5,151 students attending 384 four-year institutions (Titus, 2004).

Data for institution-level variables were obtained from the IPEDS 1995 Fall Enrollment survey. In order to be consistent with data drawn from the BPS 96/98 survey that describe students who first enrolled in the fall of 1995, institutional data from the IPEDS fall 1995 survey were used (Titus, 2004).

The dependent variable, persistence, was defined as being enrolled or having completed an undergraduate degree program three years after first enrolling in the same four-year institution. Since the focus of this study was on institutional persistence rates, within-institution persistence rather than system persistence was examined. The independent student-level variables included measures of student background characteristics, college experiences, attitudes, and environmental pull variables (e.g. financial need and work responsibilities). Student background characteristics were academic ability, educational goal, gender, race/ethnicity, and socioeconomic status (SES) (Titus, 2004).

Student experiences were measured by four components: academic performance, declaring a major, living on campus, and student involvement. Student attitudes were measured by students' institutional commitment or loyalty toward the institution. Financial need was measured by unmet financial need, a continuous variable defined in the BPS 96/98 data set as the student's total cost of attendance less the estimated family contribution and total amount of financial aid received. Average hours worked per week in the first year enrolled and whether a student was employed on campus were both included in this study (Titus, 2004).

Measures of student peer characteristics, structural-demographic characteristics and aggregate measures of selected student characteristics, experiences, attitudes, and environmental pull variables were the independent institution-level variables. Data from the IPEDS Fall 1995 Enrollment Survey were used to calculate the percentage of full-time freshmen that was female at each institution. Variables with such structural characteristics as institutional control, the extent to which students resided on campus, enrollment size, and selectivity were included (Titus, 2004).

The measure of aggregate student attitudes was an extension of the construct of institutional commitment from the student attrition model. Titus (2004) indicated that the measure of aggregate student environmental pull was also an extension of Bean's student attrition model. The institutional-level environmental pull variables in this study were the average financial need of full-time freshmen attending the same institution, average hours worked per week by full-time freshmen attending the same institution, and percent of full-time freshmen attending the same institution who worked off campus (Titus, 2004).

Hierarchical generalized linear modeling (HGLM) was deployed for this research. First, using both student-level and institution-level constructs, the influence of the institutional context on persistence was examined by the conceptual model. Second, the use of multilevel methods was necessary for analyses of clustered or nested data such as the BPS, which had a multi-stage clustered sampling design rather than a simple random sample. Third, multilevel methods were superior to single-level techniques because of their estimating techniques (Titus, 2004).

The focus of this research was on the effects of the institutional context on persistence; therefore, variables were group mean-centered at the student-level. Group-mean centering allowed the intercept term, β_{0j} , to be considered as the unadjusted average chance of persistence or expected persistence rate for students with average values for characteristics experiences, attitudes, and environmental pull variables within an institution (Titus, 2004).

The results of this study were discussed in terms of student-level variables related to persistence, differences between institutions in persistence, and institution-level variables related to persistence. For student-level variables related to persistence, the HGLM analyses showed that several student-level variables were related to the chance of college persistence in 4-year institutions. Specifically, these variables were ability, educational goal, college GPA, living on

campus, involvement, institutional commitment, financial need, and hours worked. The student-level background variables that were unrelated to college student persistence within a 4-year institution, net of other variables were: African American, Asian, Hispanic, female, SES, declared a major, and missing data items (Titus, 2004).

For differences between institutions in persistence, Titus (2004) found that the statistical significance of the random effect of the intercept suggested that even after taking student-level variables into account, differences between institutions in persistence still exist. Based on the within-institution model that controls for student-level variables and unit-specific empirical Bayes residual estimates for each institution in this study, the adjusted average chance of persistence for 95% of all institutions ranged from 49% to 90%. Use of a multilevel model with institution-level variables to understand the sources of difference between 4-year institutions in the chance of college persistence among first-time full-time freshmen is supported in this research.

In analyzing institution-level variables related to persistence, the average chance of persistence at a four-year institution was related to measures of institutional structural-demographic characteristics and students peer climate, but unrelated to peer characteristics and aggregate student experiences. There were significant results in institutional residence, size, selectivity, and institutional commitment. In contrast, the following institution-level variables were unrelated to college student persistence within a four-year institution: average educational goal, percent female, racial/ethnic diversity, average SES, control (private), average freshmen college GPA, percentage of freshmen with a declared major, average freshmen involvement, average freshmen financial need, average number of hours freshmen worked, and the percentage of freshmen who work off campus (Titus, 2004).

Multivariate hypothesis tests of the difference between the parameter estimates of institution-level aggregates and the respective student-level parameter estimates were conducted to determine the contextual effect of the aggregated variable on persistence. A positive and statistically significant difference between institutional selectivity and student-level ability were revealed, therefore indicating that selectivity had a contextual effect on persistence (Titus, 2004).

Titus recognized that this study was limited in at least four ways. First, this study used only a partial empirical test of the Berger-Milem college impact model and did not address that model's focus on the influence of organizational behavioral on such student outcomes as persistence. Second, the availability of variables in the BPS: 96/98 and 1995 IPEDS FE datasets was limited. Missing data were particularly problematic at the student level for educational goal. Hispanic (57.8%) and African American students (47.0%) were more likely to be missing at least one data item than Asian students (45.6%) and White students (43.6%). Because several independent variables had non-random missing data at the student level, the recommendation by Cohen and Cohen was followed and included a single independent variable at the student-level that reflected the "tendency to have missing data" (Titus, 2004, p. 687).

Titus (2004) made five conclusions from this research. First, several student-level constructs from Bean's student attrition model were used to explain persistence within a 4-year college or university. Second, even after controlling for those student-level predictors, differences between four-year colleges and universities in persistence exist. Third, after taking into account student-level predictors, institutional size was used to help explain differences between four-year institutions in the average chance of persistence. Fourth, selectivity had a contextual effect on college student persistence that reflected a positive increment to the chance of persistence that accrued to a student as a result of being at a more selective institution.

Finally, multilevel statistical techniques should be used to identify predictors of persistence at the student-and institution-level.

Learning Communities

Learning communities are defined as the purposeful restructuring of the curriculum to link together courses so that students have greater coherence in what they are learning. Learning communities also increase the intellectual interaction of students with faculty and fellow students while also utilizing collaborative and active approaches to learning, some form of team teaching, and interdisciplinary themes, which ultimately can positively affect student retention and persistence (Love, 1999). The impact of learning communities on commuter students, residential students, academic performance, student involvement, special student populations, longitudinal effects, and direct and indirect effects is reviewed in the following discussion.

Commuter Learning Communities

To promote commuter student retention, curricular or classroom-based learning communities designed intentionally for commuter students have formed at institutions (Chickering, 2000; Jacoby & Garland, 2005). Baker and Pomerantz (2001) conducted a study of learning communities for commuter students at Northern Kentucky University (NKU), a primarily commuter, metropolitan institution. Learning communities at NKU were established as a pilot project at the institution, as it was seeking ways to increase student satisfaction and persistence of freshmen students, the majority of whom were commuter and 18-20 years of age.

Fifteen learning community clusters were formed in fall 1998 with a total of 328 students. The learning communities were evaluated with the use of surveys, focus groups, and statistical comparison with a control group. Surveys included the Noel-Levitz Student Satisfaction Inventory which was administered throughout the fall semester to first-time freshmen students, while another survey instrument developed by the university was

administered in class to learning community participants during the last week of class. Learning community faculty compared behaviors and attitudes of learning community students with non-learning community students at the end of the semester. This was accomplished by way of student focus groups that were formed during the last two weeks of the semester through the random selection of students enrolled in four learning community classes (Baker & Pomerantz, 2001).

Student performance was assessed by matching the learning community students with a control group of students who were not in a learning community on the following variables: gender, race, age, ACT composite score, major, part-time/full-time status, enrollment or non-enrollment in the freshmen seminar course, and admission status. Further, a statistical comparison was made between the treatment group and the control group on grade point average, fall to spring retention, credit hours earned, percent on probation, percent on the Honors or Dean's List, and the number of courses dropped (Baker & Pomerantz, 2001).

The researchers for this study found that students who participated in a learning community were more successful than the control group on the following six parameters: fall grade point average, fall to spring retention, credit hours earned, percent on probation, percent on the Honors or Dean's List, and the number of courses dropped. Significant differences were found on grade point average and number of students on probation for the two groups. Additionally, learning community students had greater satisfaction with their university experience than the non-learning community students (Baker & Pomerantz, 2001).

Wathington, Pretlow III, and Mitchell (2011) qualitatively examined and compared the experiences of community college students enrolled in a learning community versus those students not enrolled in a learning community, with the goal of better understanding the role of

the cohort. Five community colleges were included in this study: Coastal Community College, Central Community College, Northern Community College, Eastern Community College, and Plains Community College. All were included in the random assignment (except for Plains Community College) and were required to promote their learning community program to recruit 1,000 students in total and serve about 500 students in learning communities over three to five semesters. Each community college was then required to have a common developmental “anchor” course in which all learning community students would enroll. The anchor course was decided individually by each college. The five community colleges and their developmental links are listed below:

Coastal Community College – the anchor class was the highest level of developmental English or reading that was linked to an introductory college level content course

Central Community College – the anchor class was the highest level of developmental English or reading and was linked to a student success course

Northern Community College – a developmental math course was anchored to a student success course

Eastern Community College – the anchor course was developmental English which was linked to a developmental reading, developmental math, a student success course, or an introductory college level content course.

Plains Community College – the anchor course was developmental English or reading and was linked to developmental English, developmental reading or a student success course. This was the only site not involved in random assignment. (Wathington, Pretlow III, & Mitchell, 2011, p. 231)

According to the results of this study, the cohorts within learning communities appeared to act as mechanisms for increasing student interaction and interdependence. Three overriding themes emerged: positive classroom climate, academic support networks, and student-faculty relationships (Wathington, et al., 2011).

Residential Learning Communities and Outcomes

The impact of residential learning communities and student retention is heavily apparent in the literature. J.L. Johnson (2001) studied four learning communities at the University of Southern Maine (USM) over a two-year period to determine their effectiveness in increasing student retention and to determine the cost/benefit of the administration of each program. The four learning communities were the Conditional Contract Student Program (CCSP), Project 100, First Year Alternative Experience (FYAE), and the Russell Scholars Program (RSP).

Students whose academic backgrounds were not complete in some way (e.g. academic units), but showed academic promise were enrolled in the CCSP. CCSP students took a reduced course load (12 credits per semester) and were expected to fulfill the terms of an academic contract with the university. The Project 100 program was an early alert and early intervention program. Faculty identified students with unsatisfactory performance and/or attendance in the first four weeks of the semester. Identified students were contacted by their advisor and intervention strategies were recommended (J.L. Johnson, 2001).

The First Year Alternative Experience (FYAE) program was designed to serve underprepared students who would have been denied regular admission to the university. This program was not an open admissions program, but intended for students who showed promise and were recommended by their high school guidance counselor. Students were admitted on a conditional basis and were not permitted to move into mainstream classes of the University until all specified requirements were met (J.L. Johnson, 2001).

The Russell Scholars Program (RSP) was implemented as a pilot program during the 1996-1997 academic year. The students in the RSP were those whose academic background surpassed the average USM student, had a high motivation for learning, innovation, and desired to pursue their academic program in a small, residential learning community. The purpose of the RSP was to address the needs of a broader, middle-range sector of the USM student body, several of whom were first-generation college students, and to examine the program's effect on student achievement and student satisfaction. Students' progress was closely monitored by the director of the program and the RSP faculty. Also, RSP students lived together in the campus dorm and took core classes together (Johnson & Romanoff, 1999; J.L. Johnson, 2001).

The researchers found the following results for this study. Using the two-year retention rates as a baseline, two of the programs, the RSP and the FYAE, had higher retention rates than the overall retention rates at USM. The findings also suggested that learning community programs are more expensive to operate, but they appear to make a difference in the successful completion of a college degree for poorly prepared and/or at-risk students (Johnson & Romanoff, 1999; J.L. Johnson, 2001).

Learning Communities and Academic Performance

Buch and Spaulding (2008) studied learning communities and academic performance using a controlled longitudinal design to assess the impact of a university-based, first-year psychology learning community (PLC) on participants' attitudes, behaviors, and academic performance. Throughout the first year, the mean GPA for students in the PLC was significantly higher than the mean GPA for students in the control group. Specifically, the cumulative GPA for the PLC students was $M = 3.07$, while the cumulative GPA for the control group was $M = 2.60$. Additionally, persistence rates for PLC students were significantly better over time than the persistence rates for the non-PLC students. For the PLC members, 19 of 20 (95%) students

were retained from the first to second year, while only 13 of 20 (65%) of the non-PLC students were retained during this same period. For the second to third year, 18 (90%) PLC students were retained, while 12 (60%) non-PLC students were retained.

Progress toward graduation was measured by tracking students' completion of two required psychology courses, research methods and the seminar capstone course. After seven semesters, 93% of PLC majors had completed the research methods course compared to 75% for non-PLC majors. For the seminar capstone course, 79% of PLC majors had completed the course, while 58% of the non-PLC majors had completed the course. The chi-square analyses were not significant for the required courses, but the department was pleased with the results, suggesting that the PLC had a meaningful impact on the performance, retention, and progression of its members. Additionally, the department annual senior exit survey was used to measure the effect of the PLC on co-curricular involvement and student satisfaction. Significant differences were found between the PLC and control groups in terms of mean GPA and persistence (Buch & Spaulding, 2008).

Waldron and Yungbluth (2007) studied interdisciplinary learning communities in response to prominent education theorists who concluded that the traditional means of structuring the first-year curriculum of higher education resulted in an unengaged, alienated, and under-achieving student body. They identified the communication principles that should lead to improvements in student learning and retention by conducting a quasi-experimental, longitudinal study of student success; thus, forming the following hypotheses:

1. Learning community students would achieve higher grade point averages.
2. Learning community students would be retained at a higher rate.
3. Learning community students would complete more college credits.

At the end of the fall semester, first academic year, and second semester, respectively, student GPAs were significantly different for students in the learning community. Follow-up tests using Student-Newman Keuls (SNK) showed that both the science cohort and learning community cohort outperformed the other students in the first two analyses. However, at the second year, only the comparison between the learning community and non-learning community students remained significant. The science cohort was significantly different from neither group, in that the students completed more college credits than both non-learning community groups (Waldron & Yungbluth, 2007).

The researchers found that after one academic year, retention rates were highest for the small science cohort (91.7%). The retention differences between the learning community (73.1%) and non-learning community groups (69.8%) were less pronounced. The researchers posited that learning community students would complete more college credits. ANOVA confirmed significant differences for fall semester and the full academic year. Based on SNK follow-up, the students in the science cohort completed significantly more credits than the non-LC group in both cases (Waldron & Yungbluth, 2007).

Learning Communities and Special Populations

Learning communities have been created for special populations. Taylor, McGowan, and Alston (2008) examined whether the presence of a learning community environment improved African American undergraduate student achievement in the science, technology, engineering, and mathematics (STEM) disciplines through the Learning Communities for STEM Academic Achievement (LCSAA) project. The study was conducted at four Historically Black Colleges and Universities (HBCUs) – Howard University (HU), a private research university in Washington, DC; Jackson State University (JSU), a public doctoral granting institution in

Jackson, MS; Talladega College (TC), a small liberal arts college in Talladega, AL; and Xavier University of Louisiana (XU), a middle-sized master's granting institution in New Orleans, LA.

Taylor, et al. (2008) sought to answer three fundamental questions:

1. Do students in STEM learning community classes obtain higher grades in courses than comparable students taking the same courses in disconnected lecture oriented courses?
2. Do students in STEM learning community classes have improved conceptual understandings of STEM class material than students in traditional classes?
3. Do such students select STEM majors and have higher retention in STEM majors?

Formative evaluation questionnaires were developed, administered and scored to inform project planners of issues and refinement needs for the LCSAA project. These questionnaires focused on six areas: (1) how participants defined learning communities, (2) what participants thought were the key ingredients for successful learning communities, (3) what participants anticipated would be their greatest rewards from establishing a learning community, (4) what were likely to be participants' greatest challenges, (5) what were the most important aspects of learning communities, and (6) what were the implications for doctoral students preparing for the professoriate. The project linked 30 Faculty Fellows, 14 doctoral students who aspired to be faculty members, four academic administrators, and four HBCUs. Approximately 300 undergraduate students directly or indirectly were affected by the project. Study participants were not randomly assigned to their treatments. There was no cross-course or cross-institutional comparisons (Taylor, McGowan, & Alston, 2008).

Varying approaches were used by the four institutions in instituting a learning community strategy. JSU used the LCSAA project to focus on the improvement of grades in their college

algebra courses by incorporating MyMathLab, an on-line homework program to foster success in college mathematics. A learning community was formed to support and implement the use of the on-line program by faculty teaching college algebra, along with the algebra coordinators. A topic-driven focus across several disciplines was applied at TC. TC students that were enrolled in biology, chemistry, mathematics, and computer science courses applied aspects of their course work to the issues of global warming and health disparities. Two types of comparisons were made at HU: (a) grades from classes taught by participating faculty were compared before and after their involvement in the learning community project, and (b) grades for students involved in learning communities were compared with grades for students in the same courses who were not involved in learning communities. The five courses from which data were obtained were: College Algebra I, Introductory Chemistry, Comparative Anatomy, Civil Engineering and Molecular Biology.

Finally, the LCSAA project at Xavier University was affected by Hurricane Katrina in August 2005. Several students who initially started in the project completed their semesters at other institutions before they returned to XU. In fall 2006, the institution was back on schedule and many of the students had returned. Therefore, the data from XU are probably not indicative of the effects of learning communities in general. However, the XU faculty in the learning communities project launched an interdisciplinary faculty learning community under the premise that if faculty were linked with respect to course preparation and contact, student learning would be enhanced (Taylor, et al., 2008).

Taylor, et al. (2008) reported the following results. At JSU, there was a substantial increase in the average grade for College Algebra I students from 2005 to 2006 (1.95 to 2.49), but then a decrease from 2006 to 2007 (2.49 to 2.18). The increase in grades was significant;

however, the 2007 grade average was not significantly different from either the 2005 or 2006 average. For TC, students' non-STEM courses (psychology and writing courses) were included in the theme-based learning. The data from two biology sections were presented; the improvement in the first biology class's average grades was significant; the decrease in the second class's grades was not. There was no significant difference in the ACT scores. Only the first biology 101 class experienced a significant difference in average grades, which reflected an improvement with the adoption of the learning communities program. There were no significant differences for two other science courses involved in the learning communities project, Biology 102 and Organic Chemistry; both saw a slight compression of grades in the experimental courses. Overall, wherever grades significantly differed from one semester to the next, the difference was an improvement.

At HU, the grade point average improved after the teacher participated in a learning community for four courses; in one class, the grade point average went down. Lastly, at XU, there was no significant difference in the class average after the adoption of the new pedagogy, although it did increase slightly. Also, data for XU's biochemistry grades showed that the class average went down dramatically from 2005 to 2006 and did not improve to the 2005 levels until spring 2007; these decreases were statistically significant (Taylor, et al., 2008). Taylor, et al. (2008) concluded that based on these preliminary data, the placement of a learning communities approach to teaching and learning in STEM holds promise. However, understanding the long-term impact of learning communities in STEM education, especially at HBCUs, may be a few years away.

Hill and Woodward (2013) examined the impact that learning communities had on newly admitted undergraduate students in the College of Education at a major, metropolitan research

university. Hill and Woodward also examined how involvement in a learning community predicted student retention and achievement, and how these varied by ethnicity and academic preparation.

Hill and Woodward (2013) utilized a retrospective cohort study to analyze student data collected between fall 2007 and spring/summer 2009. ACT composite score, credit hours earned, high school GPA and demographic information were also analyzed. A standard multiple regression was performed between student retention (number of credits earned in two years) as the dependent variable and ethnicity, ACT score, high school GPA, and membership in a learning community as independent variables. After correlations were calculated for all variables, learning community participation was the strongest significant predictor of academic retention.

Correlation data showed that the ethnicity, ACT score, high school GPA and membership in a learning community accounted for 20% of the variation in the dependent variable, academic retention. The size and direction of the relationships suggest that the credits are earned among students with high school GPAs that are above average who are members of a learning community. However, between those two, membership in a learning community seems to play a stronger role, as indicated by the slightly higher squared semipartial correlations. Furthermore, an investigation of the squared semipartial correlations revealed that neither ethnicity nor ACT score contributed significantly to the regression within a model including academic preparation (high school GPA and ACT) and learning community involvement. Instead, the relationships seemed to be mediated by learning community involvement and high school GPA (Hill & Woodward, 2013).

Based on the study results, the researchers from this study suggest that involvement in a learning community, whether it is specifically formed to address and promote student success in a given major or in a more general/university-wide learning community, appear to improve student retention in the number of credit hours earned. However, there was no statistical difference in the average GPA earned between the students who were in a learning community and the students who did not participate in a learning community (Hill & Woodward, 2013).

Learning Communities and Longitudinal Effects

Ward and Commander (2012) examined the enduring qualities of learning communities at a large public institution in the southeast, using both quantitative and qualitative data. This study was a representation of a model of research that extends the conversation about the enduring qualities of learning communities beyond their quantitative impact on academics.

Four data sets emerged as a result of the research methods. The first data set was quantitative data provided by the university's Office of Institutional Research. The long term effects in terms of academic achievement, retention, and graduate rates were present in this data. The second data set was formed using a phenomenological approach based on the quantitative data. Specifically, focus groups were formed from the 2004 members of the freshman learning communities (FLC). The third data set emerged from the 2008 National Survey of Student Engagement (NSSE), which was administered to first-year students and seniors. The survey was designed to assess these students' levels of student engagement in good educational practices and what students gained from their college experience. The fourth data set resulted from the Survey of Recent Graduates (SRG). This instrument was internal to the institution and was administered to exiting undergraduates and graduate students and assessed general education learning

outcomes, program of study learning outcomes, student engagement, and student satisfaction (Ward & Commander, 2012).

The data provided by the Office of Institutional Research reflected national findings on the long-term positive effect of FLCs in terms of academic achievement, retention, and graduation rates. From the focus groups data, nine major narrative themes emerged that the FLCs influenced student behavior and perceptions throughout their university career. The nine themes follow:

1. Student/professor connections
2. Student collaboration
3. Impact on study skills
4. Engagement with the university and city
5. Friendships
6. Impact on choice of major
7. FLC as a transition into college
8. Continuation of the FLC program beyond the first semester
9. Orientation course (Ward & Commander, 2012)

According to this research, students who participated in learning communities gained the opportunity to form close relationships with their professors during their freshmen year and also enhanced students' relationships with one another by developing collaboration skills that continue over time. The FLC also influenced most of the participants' choice of major. Further support for the value-added lasting effects of participating in learning communities were gained from both the quantitative and qualitative findings of this study (Ward & Commander, 2012).

African American Students in Higher Education

The gaps in college graduation rates have generally grown larger between White students and Black students. Today, there is a nearly 19-point gap between African American and White students across study institutions. While nearly 40 % of White 25-to-29 year-olds have attained at least a bachelor's degree, attainment among young African-Americans is only one-half that rate (Nguyen, Bibo, & Engle, 2012).

Nguyen, Bibo, and Engle (2012) also reported that graduation rates for African American students have largely remained stagnant over time, with slight dips from 2004 to 2010. In 2004, 41.2 % of Black students graduated in six years, compared to 40.6% in 2010. This lack of progress contrasts with the progress made by students overall in this report. The six-year graduation rate for Black students in 2010 at public institutions was 38.7%, compared to 39.2% in 2004. Overall, the 2010 six-year graduation rate was 60.1% and 57.9 % for public institutions.

Issues that affect the retention and persistence of African American students to degree completion is addressed in the literature. Cabrera, Nora, Terenzini, Pascarella and Hagedorn (1999) examined the role that perceptions of prejudice and discrimination play within the adjustment to the college process of African American and White students in terms of four assertions in the literature. The first assertion is that academic preparedness for college is one of the main factors accounting for differences in persistence behavior between African American and White students. The second assertion is that successful adjustment to college involves severing ties with family and past communities. The third assertion rests on two interrelated claims: (a) perceptions of prejudice and discrimination are unique to minorities and (b) persistence decisions among minorities are shaped primarily by exposure to a climate of

discrimination. The last assertion is that current models of college adjustment fail to capture minorities' collegiate experiences.

The sample for this study was selected from incoming first-year students at 18 four-year colleges and universities that participated in the National Study of Student Learning (NSSL), a large longitudinal investigation of the factors influencing student learning and personal development in college. In aggregate, the student population of those 18 institutions approximated the national population of undergraduates in four-year institutions by ethnicity and gender (Cabrera, Nora, Terenzini, Pascarella and Hagedorn, 1999).

The sample was comprised of 1,454 students (1,139 Whites and 315 African Americans) attending four-year institutions in the fall of 1992. To avoid confounding effects due to type of institution attended, only four-year students were included. Then, based on college transcripts, only those students with enrollment status information and grade point averages were retained (Cabrera, et al., 1999).

Included in the research model were construct definitions, item development and measurement models, which were based on the Student Adjustment Model and the Perceptions of Prejudice-Discrimination Model. To describe further, "the Student Adjustment model proposes that the experiences of the student at his or her institution are reflected in two domains: a social domain encompassing experiences with other students and faculty (but of an informal nature), and an academic domain reflecting experiences with faculty, other students (but of an academic nature), and academic staff" (Cabrera, et al., 1999, p.138). It is reasonable to expect that gains in academic and intellectual development would exert a positive influence on three major student outcomes: academic performance during the first year, commitment to the institution in which students are enrolled, and commitment to the attainment of an undergraduate

degree. If these outcomes are achieved during the first year in college, students are more likely to continue attending their institutions (Cabrera, et al., 1999).

Cabrera, et al. (1999) hypothesize that a student's precollege academic ability has a direct influence on the student's academic performance, academic and intellectual development during the first year in college, and the decision to reenroll in the coming academic year. In addition, students' perceptions of racial prejudice and discrimination on campus affect academic performance and social and academic experiences at the institution, as well as directly impacting withdrawal decisions.

The reliability coefficients for both White and African American students indicated a high degree of consistency for the campus/racial climate scale. No significant differences were observed in perceptions of prejudice and discrimination between White and African American students. The results of the examination by Cabrera, et al. (1999) indicated that minorities and non-minorities adjust to college in a similar manner. For both groups, persistence is determined by preparation for college, positive academic experiences, strong parental encouragement, and academic performance in college. For both White and African American groups, exposure to a campus climate of prejudice and intolerance lessens commitment to the institution and, indirectly, weakens decisions to persist (Cabrera, et al., 1999).

Commuter Students

Commuter students present an additional challenge to student retention and persistence. According to the National Clearinghouse on Commuter Programs (NCCP) and the Council for the Advancement of Standards (CAS), they are defined as students who do not live in institution-owned housing on campus. This includes full-time, traditional age students who live with their parents, students who live in housing near campus, and non-traditional students with family

and/or careers. In 2002, more than 80 % of college students were considered to be commuter. Commuter students have the same educational goals as residential students; however, because their lives consist of balancing many competing commitments, such as family, work, and other responsibilities, they have limited or no time to engage and become involved in the campus community and are negatively linked to student persistence (Jacoby & Garland, 2005).

Per Braxton, Hirschy, and McClendon (2004), commuter colleges and universities lack “well-defined and structured social communities for students to establish membership. Important distinctions between residential and commuter colleges and universities indicate a need for a theory to account for student departure in commuter colleges and universities. The characteristics of commuter institutions also indicate that student departure in such institutions constitutes an ill-structured problem” (Braxton, Hirschy, and McClendon, 2004, p.35).

Therefore, Braxton, et al. (2004) present a theory or conceptual framework that sought to untangle student departure in the commuter setting through the use of constructs derived from various theoretical orientations: economic, organizational, psychological and sociological. These proposed constructs are presented as follows:

Economic

- The lower the costs of college attendance incurred by students, the greater their likelihood of persisting in college.

Organizational

- The more a student perceives the institution is committed to the welfare of its students, the lower the likelihood of the student’s departure.
- The more a student perceives that the institution exhibits institutional integrity, the lower the likelihood of the student’s departure.

Psychological

- Motivation to graduate from college exerts a positive influence on student persistence.
- Motivation to make steady progress toward college completion also positively impacts student retention.
- The stronger a person's belief that he or she can achieve a desired outcome through his or her own efforts, the less likely the student will depart from college.
- The greater a student's awareness of the effects of his or her decisions and actions on other people, the greater the student's likelihood of departure from college.
- The greater the student's need for affiliation, the greater the student's likelihood of departure from college.

Sociological

- As parents' educational level increases, the likelihood of student departure from a commuter college or university also increases.
- Support from significant others for college attendance decreases the likelihood of student departure from a commuter college or university.
- The probability of student departure from a commuter college or university decreases for students who participate in communities of learning.
- The probability of student departure from a commuter college or university increases for students who engage in anticipatory socialization before entering college. (Braxton, et al., 2004)

Academically At-Risk Students

Students are considered to be "at-risk" if they are a member of an underrepresented ethnic group (African-American, Hispanic, Native American), academically underprepared,

and/or first generation. Many African American students can be categorized into each of the aforementioned at-risk factors. However, academically at-risk students are the focus.

Academically at-risk students are described as those students admitted to an institution who do not meet the regular admissions criteria. Engle, Reilly, and Levine (2004) compared the effects of a retention program called “Preparation for Achieving Scholastic Success” (P.A.S.S.) on academically at-risk students to those of a control group. The hypotheses for this study were as follows:

H1: Attrition is expected from both the P.A.S.S. and control groups; less attrition is expected from the participants in the P.A.S.S. program, while greater attrition is expected from the students in the control group.

H2: P.A.S.S. participants’ GPAs will increase after the intervention, while a control group’s GPA will not.

H3: Self-reported study skills will improve from early semester to late semester for the students in the P.A.S.S. program.

H4: Self-esteem will improve from early semester to late semester for the students in the P.A.S.S. program (Engle, Reilly, & Levine, 2004).

The research by Engle, et al. (2004) was conducted at a mid-sized comprehensive university. Study participants were 91 students who were academically at-risk. The average age of the students in the study was 19. They were also predominately White and female. Student participants in the P.A.S.S. program either volunteered for the P.A.S.S. program or were in the control group. Students in the study were defined as at-risk if their GPA was greater than 1.25 but less than 2.0 on a 4.0 scale. The at-risk definition was the same as the probationary status as defined by the university.

The control group was formed from the population of at-risk students who chose not to participate in the P.A.S.S. program at the end of the fall 1999 semester. The control group was

loosely matched on GPA and credit hours to the students in the P.A.S.S. program. Students in the P.A.S.S. program had the option of dropping out of the program due to voluntary withdrawal, missing two or more individual and group appointments, or for personal reasons. In contrast, students in the control group dropped out due to withdrawal or suspension (Engle, et al., 2004).

A quasi-experimental mixed design with data recorded for the fall 1999, spring 2000, and fall 2000 semesters were used in this study. The P.A.S.S. program was conducted during the spring 2000 semester. All students on probation ($GPA > 1.25$ & < 2.0) at the end of the fall 1999 semester were identified and notified of the availability of the program. The primary dependent variables of GPA and attrition were examined in pairs of semesters to maximize sample size at each phase of the intervention (Engle, et al., 2004).

As predicted in Hypothesis 1, more students in the P.A.S.S. group were retained after each semester than did those in the control group. Similarly for Hypothesis 2, the GPAs of P.A.S.S. participants for the spring 2000 and fall 2000 semesters were greater than those of the control group. Additionally, the semester GPAs of the P.A.S.S. group improved over the three semesters. Self-reported study skills decreased as measured by the Learning and Study Strategies Inventory (LASSI) for Hypothesis 3. For Hypothesis 4, there was a significant increase in participant self-esteem as reported for the P.A.S.S. participants. Therefore, Engle, et al. (2004) concluded that the P.A.S.S. program was effective as program participants improved significantly and also reported enhanced self-esteem.

Padgett and Reid, Jr. (2003) examined whether the Student Diversity Program (SDP) at California State University Fullerton (CSUF) met its goals of improving student success. The SDP was created to address the low retention and graduation rates of at-risk students (those at-risk of academic disqualification) by improving their use of campus academic support services,

and to enhance student academic development and achievement by providing additional support services tailored to meet students' individual needs. All SDP students from the first two years of the program were studied; specifically, this included nine students in the spring 1994 cohort, 10 in the fall 1994, five in spring of 1995, and 16 in the fall 1995 cohort, totaling 39 SDP students.

A retrospective quasi-experiment design was used to examine the data from the CSUF Student Information System (SIS). Data were extracted on 45 different criteria on all students enrolled in the university each semester from fall of 1990 through the following four years, including semester-by-semester academic performance through fall of 1999 (or semester of last enrollment) (Padgett & Reid, Jr., 2003).

Comparison groups were created by matching each SDP student with a group of comparison students taken from the student records database through the following process. First, all students who entered the university the same semester as the SDP students were selected. Next, students were sorted on an Excel file for the appropriate entering semester, gender, ethnicity, age, transfer status, and GPA at the end of the first semester of work. Then, each SDP student was matched with other students who:

- had enrolled in CSUF the same semester,
- were the same ethnic group,
- were the same sex,
- were within two years of the same age,
- were the same transfer status (FTIAC or transfer)
- had the same approximate GPA after one semester at CSUF, and
- had enrolled in classes. (Padgett & Reid, Jr., 2003)

It is important to note that most of the members of the SDP were athletes; therefore, the researchers were not able to match these students with non-SDP athletes, as nearly all the athletes meeting the matching criteria were already in the SDP (Padgett & Reid, Jr., 2003).

Padgett & Reid, Jr. (2003) found that the 39 students who entered the SDP in 1994 and 1995 graduated at twice the rate of comparable students matched on sex, ethnicity, age, transfer status, entering GPA, and the semester they entered the university. However, the analysis of the final GPA of the two groups showed no statistically significant difference, although the average final GPA in the SDP appeared to be slightly higher than that of the comparison students (Padgett & Reid, Jr., 2003).

Laskey and Hetzel (2011) sought to identify the factors that influence the success of college at-risk students. Academic success was defined as a college GPA of at least 2.0 on a 4.0 scale and retention at the university for one year or more. The factors the researchers studied were students' personality profiles as measured by the NEO-FFI Inventory, high school GPA, and ACT scores; and the demographic characteristics of gender, ethnicity, type of high school (private/public); location of high school attended (rural/suburban); and the utilization of tutoring services at the college.

The following research questions were developed for this study:

1. How do personality factors of neuroticism, extraversion, openness, agreeableness, and conscientiousness affect college GPA and retention of at-risk college students?
2. Do high school GPA and/or ACT scores predict college success?
3. Do high school type (public/private) and/or location (rural/urban/suburban) affect retention and college GPA of at-risk students?
4. Do academic support/tutoring positively affect college GPA and retention of at-risk students? (Laskey & Hetzel, 2011)

Data were collected over three consecutive years from student records for students participating in the Conditional Acceptance Program (CAP) program. The NEO-FFI (Five Factor Inventory), a shortened version of the NEO PI-RI, was used for this study. The NEO-FFI consists of 60 self-report items that measure the five personality domains of neuroticism, extraversion, openness, agreeableness, and conscientiousness. The NEO-FFI uses a five-point Likert-type scale from 1 (strongly disagree) to 5 (strongly agree) regarding responses. The respondents in this study were asked to indicate to what extent they exhibited behaviors that were associated with the five personality factors. Higher scores indicated a greater propensity for the domain (Laskey & Hetzel, 2011).

The results of this study are discussed as follows as they relate to each of the research questions:

1. *How do personality factors affect GPA and retention of at-risk college students?*

Students who scored higher in extraversion were less likely to be retained, as they tended to be more social and were more concerned with socializing than focusing on academics. There was a positive correlation between personality traits of both conscientiousness and agreeableness with the utilization of tutoring services. Also, students who scored high in conscientiousness and agreeableness were more likely to seek tutoring than students who were low in these personality factors. Neuroticism had a positive relationship to college GPA.

2. *Does high school GPA/ACT predict college success?*

Students' high school GPA was not a good predictor of college success for the students in the CAP program. High school GPA may not be a good predictor of success for both at-risk and non at-risk students due to differences between schools,

instruction, and, student performance. Also, ACT scores were not a predictor of college achievement or retention.

3. *Is there an association between demographic characteristics (gender/ethnicity), high school profile (urban/suburban, public/private) and retention of at-risk students? Do academic support/tutoring positively affect college GPA and retention of at-risk students?*

Study data did not support the contention that gender, ethnicity, and high school profile affect the retention or college GPA of at-risk students entering higher education. Ethnicity did not make a difference in the achievement of the at-risk students. Urban and public school students achieved at the same level as those from non-public schools.

4. *Does academic support/tutoring positively affect retention of at-risk students?*

Tutoring has a positive effect on at-risk students' retention and GPA. CAP students who were retained utilized tutoring services significantly more than students who were not retained. When students came to tutoring on a regular basis, at least once a week, they received higher grades, which, in turn, led to achievement in their classes and to their retention. (Laskey & Hetzel, 2011, pp. 38-39)

Based on these results, Laskey and Hetzel (2011) suggest that as more at-risk students matriculate in colleges and universities, more programs will need to be in place to serve this population.

Smith (2005) examined the effects of student receptivity to services on college achievement and retention. The two research questions that guided this study were (1) does student receptivity to the services provided at an institution moderate the relationship between

high school GPA and college GPA; and (2) is the relationship between risk status and attrition moderated by student receptivity to services? For the purposes of this study, students were considered to be at-risk for retention based on academic factors, non-academic factors, and demographic characteristics of the student. Receptivity to services was defined as students' willingness to attend and receive services including academic assistance, social activities, career counseling, and/or personal counseling in their first year of college.

There were 991 participants in the study which was slightly less than half of the incoming cohort at a four-year public university in the Northeast. The sample contained 50% each of males and females, while the overall first-year student enrollment included slightly more females than males. The sample was overly represented by students of color. The mean high school GPA for the sample was 87.1 and the mean SAT total score was 1114. These measures were slightly, but not significantly, less than the average GPA and total SAT scores for the entire cohort. Of the total 991 participants, 378 were identified as being at-risk of retention (Smith, 2005).

The *College Student Inventory (CSI) Form A* was used to identify students at-risk of attrition. This inventory includes 194 items scored on a 7-point Likert scale. The inventory contains 19 subscales organized around five major categories: academic motivation, social motivation, general coping skills, receptivity to support services, and initial impression of the institution. Results on a 0-100 continuum are reported on three indices (dropout proneness, perceived academic difficulty, and educational stress). The *Dropout Proneness* index measures a student's overall inclination to drop out of college before finishing a degree. The *Academic Difficulty* index was designed to predict which students are more likely to have lower college grades. The *Receptivity to Services* index indicates the relative responsiveness of the student to interventions and resources offered by the institution. This index is based on student willingness

to receive assistance in a variety of areas such as career counseling, personal counseling, social enrichment, and academic assistance (Smith, 2005).

The *CSI* was administered to students attending the last six summer orientation sessions. Students were informed of the purpose of the study and that participation was voluntary. The participation response rate was 95%. A comparison of respondents to non-respondents did not reveal any significant demographic differences. Pre-matriculation data were combined with university records to create a database. Students were considered to be at-risk of attrition if their *Dropout Proneness* score was above 65. Each semester, cumulative GPA and retention information were merged into the database. Students were considered to be retained if they were enrolled 21 calendar days from the first day of classes (Smith, 2005).

The findings for each of the research questions for this study follow. For the first research question, *does receptivity to services moderate the relationship between high school GPA and college GPA*, standard procedures for product term analysis in a multiple regression framework were performed. The significant interaction effect suggested that the relationship between high school GPA and college GPA is moderated by the extent to which students report being receptive to the services provided by the college (Smith, 2005).

For the second research question, *does receptivity to services moderate the relationship between at-risk entry status and college attrition*, a second product term analysis using logistic regression was performed. Descriptive results showed that students at-risk of retention were more likely to drop out of the institution than those who were not considered at-risk. Of the 378 students in the sample considered to be at-risk, 42.9% left the institution by the fifth semester, while 29% of the 613 not at-risk students left the institution, a statistically significant difference. The interaction parameter suggested that the likelihood of a student leaving the institution varied

as a function of their receptivity to services, controlling for other predictors in the model (Smith, 2005).

The results of this study showed that including non-academic factors in the definition of at-risk provides a more accurate predictor of college retention than high school GPA and SAT alone. The findings also suggest that student receptivity affects college retention. Additional research is needed on assessing receptivity and promoting student receptivity (Smith, 2005).

Singell and Waddell (2010) examined whether universities using easily accessible data and standard empirical techniques can effectively identify students who could be retention risks early in their college careers to practically intervene. This study was conducted using data from the University of Oregon, which was on a quarter system that included three regular-year terms (fall, winter, spring) and a summer quarter that was not considered part of the regular full-time appointment.

Singell and Waddell (2010) intentionally limited their empirical assessment of retention in two ways. First, attention was restricted to information generally available to admissions offices and university administrators either at the time students arrived on campus or in the first couple of terms of enrollment. Second, data were used to estimate a reduced-form, binary (probit) model of whether a student is retained or not that could be executed by an office of institutional research using commercial statistical packages. This initial approach is the most restrictive in that it uses only the information available at the time of initial enrollment, which would permit the earliest possible identification and intervention.

The results for this study were discussed in terms of second term results (winter term) and later term results (fall term of the following academic year). For second term retention, findings revealed differences in the probabilities of returning to the University of Oregon in the

second quarter of the freshman year across a number of observed attributes known at the time each student enrolled. First, the authors estimated separate models for residents and nonresidents, with results indicating that across residency status, winter-term retention probabilities differed by student attributes, and the estimates differed not only in magnitude but sign. Personal attributes mattered with regard to retention, but the pattern of effects was complex. Second, winter term retention probabilities were systematically and similarly related to both need and financial aid for resident and nonresident students. Specifically, students who were in need financially were less likely to return; this was consistent with the expectation that meeting financial need is an important factor in retaining students (Singell & Waddell, 2010).

Finally, the variables that related to the type of student connection to the institution also appeared to be important for retention. Specifically, FIG status was a significant predictor of retention; non-residential FIG affiliations had the stronger correlation for in-state students and residential-FIG affiliations had the stronger correlation for out-of-state students. Overall, the researcher surmised that retention is a difficult outcome to predict, however, prediction-based modeling is still valid and instructive (Singell & Waddell, 2010).

Singell and Waddell (2010) also discussed whether students identified to be at-risk enrolled for subsequent semesters at the University of Oregon. The results demonstrated that residents identified as at-risk for the second term continued to be at-risk in subsequent terms. The authors consequently showed that the re-enrollment-probability deciles derived early in students' careers were effective at predicting outside of the sample as it related to graduation. Thus, the findings suggested that identifying students (resident or nonresident) early with the intent for treatment may pay future dividends, as term-by-term retention risks are positively correlated throughout their tenures.

In the analysis of the fall term second-year retention, the binary specifications for residents and nonresidents in the fall term of their second years showed that term-by-term GPA was significant and positive for all three-first-year terms, with the largest marginal effect occurring for the fall-term GPA. Therefore, this suggests that, for both residents and nonresidents, a student's performance in each term contributes to his or her re-enrollment decision in the subsequent fall, but that the student's initial performance is particularly important. Additionally, participation in FIGs (residential and nonresidential) and admittance to the Honors College had significant and substantial retention effects into the second year, even after controlling for GPA. These results suggest that programs that provide students with a smaller and well-defined group of peers may be effective at improving retention (Singell & Waddell, 2010).

The coefficients for high-school performance measures were smaller in magnitude and generally insignificant in the specifications that included current college performance. Thus, current performance in college is a better predictor of retention than past performance in high school, which has been noted in other work. Similarly, first-year aid values were generally not important in predicting second-year retention, although scholarships were significantly positive for residents (Singell & Waddell, 2010).

Finally, the results for students of color indicated that African American and Asian American students were more likely to be retained than White students, net of other attributes. By contrast, Hispanics, Native Americans, and other students of color, did not differ in their retention probabilities from White students. Thus, students of color appeared to consistently have higher (or no different) retention probabilities net of other attributes, suggesting that

diversity efforts regarding retention may more appropriately focus on other attributes than on race (Singell & Waddell, 2010).

For students in the 2001-2006 cohorts who returned winter term of their first year, the results for term-by-term GPA are significant and positive for all three-first-year terms, with the largest marginal effect occurring for the fall-term GPA. This suggests that, for both residents and nonresidents, a student's performance in each term contributes to their re-enrollment decision in the subsequent fall, but that the student's initial performance is particularly important (Singell & Waddell, 2010).

Additionally, Singell and Waddell (2010) analyzed graduation probabilities to determine if interventions for at-risk students would be worth the financial resources. The researchers ran a binary model with a dependent variable that equaled one for five-year graduates from the 2001 and 2002 cohorts and that included the predicted risk categories (excluding the most at-risk group). The results for the five-year graduation model, categorized by residency status, indicated that those students who were most at-risk of not returning in the second year were the least likely to graduate in five years. The probability of graduation increased for those who were at lower levels of risk. In summary, identifying students who are identified as at-risk before arriving on campus suggests that the models examined in this study can be used to inform admissions decisions.

Summary

Several theories and models have addressed the issue of student retention and persistence from sociological, organizational, and psychological perspectives. In this literature review, the sociological perspective focuses on Tinto's theories of student departure and integration which are based on academic and social integration (Tinto, 1988, 1993). The organizational perspective comes from Bean's theory of student attrition which postulates that students leave college for

similar reasons why employees leave organizations (Braxton & Hirschy, 2005). Berger (2001) also examines student retention from an organizational behavior perspective, using the phrase “organizational behavior,” to describe the actions of organizational agents at a college or university. Self Determination Theory (SDT) provides a psychological perspective for student attrition, where the focus is between autonomous motivation and controlled motivation (Deci & Ryan, 2008). SDT can help to incorporate socio-cultural conditions and students’ interactions with their inherent psychological needs (Guffrida, 2006).

Other factors found to affect student persistence and retention are poor academic preparation, being a commuter student, and a member of an underrepresented population, specifically, African American (Noel, 1985). A strategy that can positively affect student attrition is the implementation of learning communities. Learning communities provide opportunities for students with shared cultures and backgrounds to support and encourage each other as they persist toward degree completion. However, more longitudinal research on the effectiveness of learning communities in the retention and persistence of African American, at-risk, commuter students is necessary.

CHAPTER III

METHODOLOGY

The methods and procedures used to obtain and analyze the data for the research questions formulated for this study are described in this chapter. The topics included are: restatement of the problem, research hypotheses, research design, population, sample, data procedures, and data analysis procedures.

Restatement of the Problem

According to the National Center on Educational Statistics (Ginder & Kelly-Reid, 2013), for student cohorts that began in fall 2006, the overall six-year graduation rate for four-year institutions was 59.2 %. Specific to four-year public institutions, the six-year graduation rate was 57.2 %. For African American students, the overall national graduation rate for this same institution type was 39.7 %, while the graduation rate for White students was 60.2 %. At Metropolitan Urban University (MUU), the gap in graduation rates between the national average and African American students was even greater. The overall six-year graduation rate for students who entered MUU in fall 2006 to pursue a bachelor's degree was 28.1 %. However, for African American students in this same cohort, only 9.2 % completed their bachelor degree within six years, in comparison to a four times greater graduation rate of 38.5 % for White students (MUU Office of Budget, Planning & Analysis, 2003-12). The purpose of this research was to examine if learning community participation for first time in any college (FTIAC), at-risk, African American students in fall 2006 had a positive effect on six-year graduation rates.

Research Hypothesis

African American students who were admitted into the Alternative Admissions Division (AAD) at MUU in the fall 2006 semester would have greater academic outcomes (e.g. GPA,

persistence, credit hours earned, graduation) in a six-year period than African American AAD students who did not participate in a learning community in the fall 2006 semester.

Research Design

A nonexperimental, retrospective, descriptive, cohort design was used. A nonexperimental design is appropriate when no treatments are given (Belli, 2009). According to B. Johnson's (2001) classifications, the design for this study is retrospective descriptive or Type I, as the objective of the study is to look backward to locate information on the independent variables that help to explain the current differences on the dependent variables and to describe the characteristics of the study phenomenon. This is also a cohort design, as the same set of people is assessed over time (Rubin & Bellamy, 2012). The layout of the research design is diagrammed in Figure 2.

Figure 1

O X O

O O (Campbell & Stanley, 1963)

A nonexperimental research design is susceptible to internal and external validity threats (Campbell & Stanley, 1963; Fraenkel & Wallen, 2009). Not all of the students in the sample took the standardized American College Testing (ACT) exam and additionally, the testing conditions are unknown. Also, students admitted in the AAD were required to enroll in the Learning to Learn® (LTL) course (www.learningtolearn.com; Ward, 2002). The teaching format for this course was uniform across all sections of the course (AAD associate director, personal communication, July 15, 2013).

Population

The total student enrollment at MUU for the fall 2006 semester was 32,982. The undergraduate enrollment was 20,892 (63.3%). The remaining students ($n = 12,090$) were enrolled in graduate and professional programs of the institution (MUU Office of Budget, Planning, & Analysis, 2006-07). A demographic description of the undergraduate students by race and gender is shown in Table 1.

Table 1

Undergraduate Students by Race and Gender - Fall 2006

Race	Gender		Total n (%)
	Male n (%)	Female n (%)	
Black (Non-Hispanic)	2,157 (10.3)	4,385 (21.0)	6,542 (31.3)
White (Non-Hispanic)	4,566 (21.9)	5,505 (26.3)	10,071 (48.2)
Hispanic	228 (1.1)	330 (1.6)	558 (2.7)
Asian/Pacific Islander	630 (3.0)	638 (3.1)	1,268 (6.1)
Non-Resident Alien	522 (2.5)	523 (2.5)	1,045 (5.0)
American Indian/ Alaskan Native	31 (0.1)	60 (0.3)	91 (0.4)
Unknown	582 (2.8)	735 (3.5)	1,317 (6.3)
Total	8,716 (41.7)	12,176 (58.3)	20,892 (100.0)

As indicated in Table 1, the largest number of undergraduate students enrolled were White (Non-Hispanic) ($n = 10,071$; 48.2%), with Black (Non-Hispanic) comprising 31.3%. Female students represented the majority of the enrollment ($n = 12,176$; 58.3%).

The first time in any college (FTIAC) enrollment for fall 2006 was 2,945 students (8.9 %) (MUU Office of Budget, Planning, & Analysis, 2006-07). The FTIAC enrollment by race, gender, and age is indicated in Table 2.

Table 2

First Time in Any College (FTIAC) Students by Race, Gender, and Age - Fall 2006

Race	Age			
	≤ 24 years	25 ≥ years	Unknown Age	Total
	n (%)	n (%)	n (%)	n (%)
Black (Non-Hispanic)				
Male	368 (12.5)	23 (0.8)	1 (0.0)	392 (13.3)
Female	690 (23.4)	24 (0.8)	0 (0.0)	714 (24.2)
Unknown gender	NA	NA	NA	NA
Total	1,058 (35.9)	47 (1.6)	64 (2.2)	1,169 (39.7)
White (Non-Hispanic)				
Male	518 (17.6)	10 (0.3)	1 (0.0)	529 (18.0)
Female	589 (20.0)	6 (0.2)	0 (0.0)	595 (20.2)
Unknown gender	NA	NA	39 (1.3)	39 (1.3)
Total	1,107 (37.6)	16 (0.5)	40 (1.4)	1,163 (39.5)
Hispanic				
Male	46 (1.6)	1 (0.0)	0 (0.0)	47 (1.6)
Female	52 (1.8)	0 (0.0)	0 (0.0)	52 (1.8)
Unknown gender	NA	NA	4 (0.1)	4 (0.1)
Total	98 (3.3)	1 (0.0)	4 (0.1)	103 (3.5)
Asian/Pacific Islander				
Male	133 (4.5)	0 (0.0)	0 (0.0)	133 (4.5)
Female	106 (3.6)	0 (0.0)	0 (0.0)	106 (3.6)
Unknown gender	NA	NA	6 (0.2)	6 (0.2)
Total	239 (8.1)	0 (0.0)	6 (0.2)	245 (8.3)
Non-Resident Alien				
Male	54 (1.8)	3 (0.1)	0 (0.0)	57 (1.9)
Female	46 (1.6)	3 (0.1)	0 (0.0)	49 (1.7)
Unknown gender	NA	NA	2 (0.1)	2 (0.1)
Total	100 (3.4)	6 (0.2)	2 (0.1)	108 (3.7)
American Indian/Alaskan Native				
Male	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Female	6 (0.2)	0 (0.0)	0 (0.0)	6 (0.2)
Unknown gender	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Total	6 (0.2)	0 (0.0)	0 (0.0)	6 (0.2)
Unknown				
Male	66 (2.2)	1 (0.0)	0 (0.0)	67 (2.3)
Female	76 (2.6)	1 (0.0)	1 (0.0)	78 (2.6)
Unknown gender	NA	NA	6 (0.2)	6 (0.2)
Total	142 (4.8)	2 (0.1)	7 (0.2)	151 (5.1)
Grand Total	2,750 (93.4)	72 (2.4)	123 (4.2)	2,945 (100.0)

Note. NA = not available

In Table 2, 39.7 % ($n = 1,169$) of the FTIAC enrollment was Black (Non-Hispanic). Traditional age students, 24 years of age or less, comprised the overwhelming majority of the FTIAC enrollment ($n = 2,750$, 93.4%). Of this cohort, 37.6 % of the students ($n = 1,107$) were White (Non-Hispanic). More female students than male students were enrolled for the Black (Non-Hispanic), White (Non-Hispanic), Hispanic, and Unknown racial categories. Black (Non-Hispanic) females had the largest number of students enrolled ($n = 714$; 24.2 %).

Sample

A nonprobability sample (Rubin & Bellamy, 2012) was used, which is all of the African American FTIAC students who were admitted to MUU through the AAD for the fall 2006 semester, and 18 years of age and over at the end of the fall 2006 semester. Based on these parameters, the final dataset was 318 students. The sample was based on quantitative data available from MUU's Office of Budget, Planning & Analysis and Student Information Systems for fall 2006 through spring/summer 2012.

Data Procedure

Historical student academic and demographic data were collected from the following MUU institutional sources: Office of Budget, Planning and Analysis; Student Tracking Advising and Retention System (STARS); and Banner, which is an integrated database system used to coordinate and manage student information.

The independent variable was learning community participation. The demographic categorical dependent variables were gender, attendance type (full or part-time), high school type (public or private), high school location (urban, suburban, rural), dormitory resident, financial aid recipient, academic status in fall 2006 (regular or probation), grade earned in Learning to Learn®, degree attainment, and number of semesters attended at MUU. The continuous

dependent variables were age, high school grade point average, ACT score, and financial expected family contribution.

Inferential dependent variables were number of semesters enrolled, number of credits earned in fall 2006, total number of credits earned at MUU, grade point average at MUU in fall 2006, and cumulative grade point average earned for the terms attended. The content validity of the independent and dependent variables selected were appropriate as these variables were prominent in the literature.

The collected data for the categorical variables were translated into a computer format using a coding system developed by the researcher and entered into SPSS (Version 22), a statistical software database. The collected data for the continuous variables were input directly into SPSS. Each row of the database contained information specific to each student's data in the research.

Data Analysis

Descriptive statistical methods, used to summarize and describe quantitative information (Belli, 2009), and inferential statistical methods, used to make inferences about a population based on a sample (Fraenkel & Wallen, 2009), were used to compare outcome variables of cumulative grade point average, credit hours earned, retention rate, and degree completion for the fall 2006 AAD cohort. SPSS (Version 22) was used to analyze the data. The statistical analyses that were used to address the research questions are indicated in Table 3.

A nominal alpha level of 0.05 was used to determine statistical significance for the inferential statistics. The results of the data analysis are presented in aggregate form using a table format. Missing data was list-wise deleted for all statistical analyses. The power was calculated on the population (N=2,945), which suggests a minimum sample size of n=340. Hence, a 95%

confidence interval +/-5% was produced (www.raosoft.com/samplesize.html).

Figure 2

Statistical Analysis

Research Questions	Variables	Statistical Analysis
1. Among alternative admissions college students, is there a difference in the six-year retention rates for students who participated in learning communities as compared to students who did not participate in a learning community?	<u>Dependent variable</u> Number of terms attended <u>Independent variable</u> Learning community participation	Independent sample <i>t</i> -test was used to compare means between groups
2. Among alternative admissions college students, is there a difference in the number of credit hours earned for students who participated in learning communities as compared to students who did not participate in a learning community?	<u>Dependent variable</u> Credit hours earned for fall 2006 Cumulative credit hours earned <u>Independent variable</u> Learning community participation	Independent sample <i>t</i> -tests were used to compare means between groups
3. Among alternative admissions college students, is there a difference in cumulative GPA for students who participated in learning communities as compared to students who did not participate in a learning community?	<u>Dependent variable</u> Cumulative GPA for fall 2006 Cumulative GPA <u>Independent variable</u> Learning community participation	Independent sample <i>t</i> -tests were used to compare means between groups

Chapter IV

RESULTS

The results of the data analyses are reviewed in this chapter. The results are discussed in two sections. The first section is a profile of the sample using descriptive statistics and crosstabulations. Inferential statistics that were used to answer the research questions are in the second section.

The purpose of this research was to examine if learning community participation for first time in any college (FTIAC), at-risk, African American students in fall 2006 had a positive effect on six-year graduation rates. The initial data sample included 386 students. Cases that did not meet the inclusion criteria, e.g., African American and at least 18 years of age at the end of the fall 2006 semester, were eliminated. The final data set was 318 students.

Descriptive Statistics

Categorical and continuous variables were used to describe the participants in the sample. The categorical variables were learning community participation, gender, enrollment status, high school type, high school location, students' dormitory residence status, academic status, number of terms attended, number of students that graduated in six years, and grade earned in the Learning to Learn® (LTL) course. These variables are presented in crosstabulations. The continuous variables were age, high school grade point average, ACT score, and financial expected family contribution. These variables are comprised in a single table.

The gender of the dataset is described in Table 3. A higher proportion of females (59.6%; 84/141) than males (40.4%; 57/141) participated in a learning community. The gender was unknown for four (1.3%) students.

Table 3

Crosstabulation - Learning Community Participation by Gender

<u>Learning Community Participation</u>				
<u>Gender</u>	<u>No</u>	<u>Yes</u>	<u>Unknown</u>	<u>Total</u>
Male	84	57	2	143
Female	89	84	2	175
Total	173	141	4	318

The results of student enrollment status are shown in Table 4. Overall, about three-quarters of students, 74.2% (236/318), were enrolled full-time (at least 12 credit hours). For the students who participated in the learning community (n = 141), 115 students (81.6%) were enrolled full-time, compared to 26 students (18.4%) who were enrolled part-time. A smaller proportion of the students who did not participate in the learning community (67.6%, 117/173) were enrolled full-time. Therefore, about four-fifths of learning community students enrolled full-time, compared to about two-thirds of non-learning community participants.

Table 4

Crosstabulation - Learning Community Participation by Enrollment Status (Fall 2006)

<u>Learning Community Participation</u>				
<u>Enrollment Status</u>	<u>No</u>	<u>Yes</u>	<u>Unknown</u>	<u>Total</u>
Full-time	117	115	4	236
Part-time	56	26	0	82
Total	173	141	4	318

The results of the type of high school attended by the students in the sample are indicated in Table 5. Students in the dataset overwhelmingly attended public high schools rather than private high schools. Excluding the small number of GED recipients ($n = 22$), a whopping 94.9 % of students in the sample attended public high school. Of the 281 students who attended a public high school, 126 (44.8%) students were learning community participants and 152 (54.1%) students were non-learning community participants. Learning community participation was unknown for three (1.1%) students. A small number of students ($n = 15$) attended private high schools, of whom eight (53.3%) students were learning community participants and seven (46.7%) students were not. Several sample participants ($n = 22$; 6.9%) received a GED. Of this group, seven (31.8%) students participated in a learning community, 14 (63.6%) students did not participate in a learning community, and one (4.5%) student's learning community status was unknown.

Table 5

Crosstabulation - Learning Community Participants by Type of High School Attended

High School Type	Learning Community Participation			Total
	No	Yes	Unknown	
Public	152	126	3	281
Private	7	8	0	15
GED	14	7	1	22
Total	173	141	4	318

The geographic location of the students' high school is indicated in Table 6. A slight majority of the students in the dataset (50.3%; $n = 160/318$); attended high school in the urban city where Metropolitan Urban University (MUU) is located. A total of 35.8% ($n = 114/318$)

students attended a high school that was suburban to MUU. The remaining students attended high school in other urban (6.6%; $n = 21/318$), unknown (6.9%; $n = 22/318$), or other (0.3%; $n = 1/318$) locations. A lower proportion of students who attended high school in the city where MUU is located (45.4%; $n = 64/141$) participated in a learning community than did students who did not participate in a learning community, which was 54.9% ($n = 95/173$).

Table 6

Crosstabulation - Learning Community Participants by High School Location

High School Location	<u>Learning Community Participation</u>			Total
	No	Yes	Unknown	
Urban (MUU)	95	64	1	160
Suburban	53	60	1	114
Other Urban	10	10	1	21
Unknown	14	7	1	22
Other	1	0	0	1
Total	173	141	4	318

Students' dormitory residence status is described in Table 7. The overwhelming majority of the students (82.7%, $n = 263/318$) were commuter students. Though only a small group, a total of 54 students who were dormitory residents were much more likely to participate in learning communities. Specifically, 57.4% of dormitory students ($n = 31/54$) chose to be involved with a learning community, compared to only 41.8% ($n = 110/263$) of commuter students.

Table 7

Crosstabulation - Learning Community Participants by Dormitory Residence Status

<u>Learning Community Participation</u>				
<u>Residence</u>	<u>No</u>	<u>Yes</u>	<u>Unknown</u>	<u>Total</u>
Commuter	151	110	2	263
Dorm Resident	22	31	1	54
Unknown	0	0	1	1
Total	173	141	4	318

Students' financial aid status is listed in Table 8. About two-thirds of the students (66.0%; n = 210/318) received financial aid (e.g. Pell grant) for the 2006-07 academic year. A slightly higher proportion of learning community participants, 68.8% (n = 97/141), received financial aid than did students who did not participate in learning communities (64.2%; n = 111/173).

Table 8

Crosstabulation - Learning Community Participation by Financial Aid

<u>Learning Community Participation</u>				
<u>Financial Aid</u>	<u>No</u>	<u>Yes</u>	<u>Unknown</u>	<u>Total</u>
No	62	44	2	108
Yes	111	97	2	210
Total	173	141	4	318

The academic status of students in the dataset at the end of fall 2006 is listed in Table 9.

The academic performance of students in the sample at the end of their first semester at MUU,

fall 2006, was poor overall. For the full sample, about one-third (33.6%, $n = 107/318$) held regular status (GPA of 2.0 and above) with 61.3 % ($n = 195/318$) of the students on probation status. However, an even smaller proportion of students who participated in a learning community (29.0%; $n = 41/141$) held regular status than did students who did not participate in a learning community (38.1%; $n = 66/173$). Similarly, a higher proportion of learning community participants (66.5%, $n = 92/141$) were on academic probation than students who did not participate in a learning community (57.2%; $n = 99/173$).

Table 9

Crosstabulation - Learning Community Participation by Academic Status (Fall 2006)

Academic Status	Learning Community Participation			Total
	No	Yes	Unknown	
Regular Status	66	41	0	107
Probation Status	99	92	4	195
Not Applicable	8	8	0	16
Total	173	141	4	318

All of the students in the AAD were required to take the Learning to Learn® (LTL) course in their first semester of attendance at MUU. The grades earned by students in the LTL course are listed in Table 10. With the exception of the grade of “F”, the majority of the grades earned are somewhat evenly divided between the learning community participants and the non-learning community participants. Still, learning community students performed better in the LTL course. While 36.2% of learning community students ($n = 51/141$) received a grade of A or A- in the LTL course, compared to a lower 31.8% of non-learning community students ($n = 55/173$),

almost twice as many non-learning community students, 17.9% (n = 31/173) received a grade of F, compared to only 10.6% (n = 15/141) of learning community students who received F grades.

Table 10

Crosstabulation - Learning Community Participation by Grade Earned in Learning to Learn® (LTL)

Grade Earned in LTL	Learning Community Participation			Total
	No	Yes	Unknown	
A	42	35	3	80
A-	13	16	0	29
B+	14	9	0	23
B	26	25	0	51
B-	11	5	1	17
C+	8	10	0	18
C	4	8	0	12
C-	3	3	0	6
D+	1	0	0	1
D	1	2	0	3
D-	3	0	0	3
F	31	15	0	46
W	0	1	0	1
WP	6	1	0	7
WF	1	4	0	5
WN	4	5	0	9
NR	0	2	0	2
NA	5	0	0	5
Total	173	141	4	318

Note. A = 4.00; A- = 3.67; B+ = 3.33; B = 3.00; B- = 2.67; C+ = 2.33; C = 2.00; C- = 1.67; D+ = 1.33; D = 1.00; D- = 0.67; F = 0.00; W = official withdrawal; WP = withdrawal passing; WF = withdrawal failing; WN = withdrawal never attended; NR = no grade reported; NA = not applicable (MUU Office of the Registrar)

The number of students who graduated within six years is listed in Table 11. Only five students out of 318 (1.6%) graduated within a six-year time frame. Three other students (0.9%) graduated but did so beyond six years. A stunningly high proportion of the students in the sample (97.5%; $n = 310/318$) did not graduate.

Table 11

Crosstabulation - Learning Community Participation by Number of Students Who Graduated

<u>Learning Community Participation</u>				
<u>Graduated</u>	No	Yes	Unknown	Total
Yes within 6 years	0	3	2	5
Yes beyond 6 years	2	1	0	3
No	171	137	2	310
Total	173	141	4	318

The number of terms that students attended MUU is listed in Table 12. Attendance ranged from one to 19 semesters. Almost 26 percent (25.8%; $n = 82/318$) of the students attended only one semester. Students who attended only two semesters (19.2%; $n = 61/318$) were close behind. The number of terms attended was similar for learning community and non-learning community participants. Specifically, whereas 46.8% of students ($n = 66/141$) participating in a learning community attended MUU for only one or two semesters, a similar 43.9% of non-learning community students attended MUU for only one or two semesters.

Table 12

Crosstabulation - Learning Community Participation by Number of Terms Attended

<u>Learning Community Participation</u>				
Number of Terms Attended	No	Yes	Unknown	Total
1	40	41	1	82
2	36	25	0	61
3	4	2	0	6
4	14	15	0	29
5	19	14	0	33
6	2	0	0	2
7	12	6	0	18
8	9	5	0	14
10	7	7	0	14
11	3	1	0	4
12	3	0	0	3
13	3	5	1	9
14	9	1	1	11
15	1	2	1	4
16	2	1	0	3
17	1	1	0	2
18	0	2	0	2
19	8	13	0	21
Total	173	141	4	318

Continuous variables are reported in Table 13. Students in the dataset were age 18 and older. The mean age for students in the learning community was 18.48 ($SD = 1.56$), slightly younger than for students in the non-learning community group, for which the mean age was 19.08 ($SD = 2.72$). The mean age was 18.25 ($SD = .50$) for four unknown learning community participants.

The high school grade point average (HSGPA) was reported for 299 (94%) students in the sample. The mean HSGPA for students who did participate in the learning community ($n = 136$; 45.5%) was 2.30. The mean HSGPA was 2.18 for students who did not participate in the learning community ($n = 159$; 53.2%). The HSGPA for four (1.3%) students with unknown learning community participation was 2.23. The HSGPA was not available for 19 (6%) students.

ACT scores were reported for 188 (59.1%) students in the sample. For the 91 students in the learning community, ACT scores were reported, and the mean ACT score for this group was 15.75 ($SD = 2.24$). For the 93 non-learning community participants, ACT scores were reported; the mean ACT score for this group was 15.52 ($SD = 2.22$). Thus, the ACT scores learning community participants were very slightly higher than non-participants. ACT scores were not reported for 130 students in the sample.

The financial expected family contribution (EFC) for educational expenses (e.g. tuition and/or room and board) is indicated for 269 or 84.6% of the students in the sample. The mean EFC for students in the learning community was \$2,681.39 ($SD = 6,198.02$), which was almost one-third lower than the mean EFC for non-learning community students, which was \$3,417.25 ($SD = 6,664.21$). The expected family contribution was missing for 49 students.

Table 13

Descriptive Statistics – Age, High School GPA, ACT Score, Financial Expected Family Contribution

Variable	<u>Learning Community</u>			<u>Non-Learning Community</u>			<u>Unknown</u>			Range
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	
Age	141	18.48	1.56	173	19.08	2.72	4	18.25	.50	18.00-35.00
HSGPA ^a	136	2.30	.25	159	2.18	.34	4	2.20	.26	1.40-3.31
ACT Score ^b	91	15.75	2.23	93	15.53	2.22	4	16.25	2.98	10.00-23.00
FEFC ^{cd}	122	2681.39	6198.02	145	3417.25	6664.21	2	0.00	.00	.00-37086.00

Note. HSGPA= High school grade point average; FEFC=Financial expected family contribution
^a Missing 19; ^b Missing 130; ^c Missing 49; ^d *M, SD*, and range are dollar amounts

Inferential Statistics

Inferential statistics were used to address three research questions. A criterion alpha level of .05 was used for statistical significance of the findings.

Research question 1. Among alternative admissions college students, is there a difference in the six-year retention rates for students who participated in learning communities as compared to students who did not participate in a learning community?

An independent sample *t*-test was conducted to answer this research question by examining the number of terms attended for both groups. Levene's Test for Equality of Variances was not significant. Therefore, equal variances were assumed. The data results are shown in Table 14.

Table 14

The t-test for Alternative Admissions College Students in Learning Communities and Non-Learning Communities Using Number of Terms Attended

<i>Group</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>df</i>	<i>Sig</i>
Non-LC	173	3.91	3.69			
				-.11	312	.91
LC	141	3.96	3.17			

Missing 4

The results were not statistically significant $t(312) = -.11, p = .91$. The means were 3.91 and 3.96. There were no differences between the two groups.

Research question 2. Among alternative admissions college students, is there a difference in the number of credit hours earned for students who participated in learning communities as compared to students who did not participate in a learning community?

Two independent sample *t*-tests were conducted to answer this research question. The number of credit hours earned at the end of fall 2006 was tested by the first independent sample *t*-test. The resulting data are shown in Table 15.

Table 15

The t-test for Alternative Admissions College Students in Learning Communities and Non-Learning Communities Using Number of Credit Hours Earned End of Fall 2006

<i>Group</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>df</i>	<i>Sig</i>
Non-LC	173	5.13	3.56			
				1.27	311.85	.21
LC	141	4.67	2.84			

Missing 4

The Levene's Test for Equality of Variances was significant, therefore, equal variances were not assumed. The results were not significant, $t(311.85) = 1.27$, $p = .21$, $M = 5.13$ and $M = 4.67$. There were no statistically significant differences between the two groups in credit hours earned at the end of the fall 2006 semester.

The total credit hours earned for students while matriculating at MUU were analyzed using the second independent sample t -test. These results are found in Table 16. Equal variances were assumed based on Levene's Test for Equality of Variances. The results from this test were $t(312) = -.26$, $p = .80$, $M = 19.95$ and $M = 20.77$. There were no statistically significant differences between the two groups in total credit hours earned.

Table 16

The t-test for Alternative Admissions College Students in Learning Communities and Non-Learning Communities Using Total Number of Credit Hours Earned

<i>Group</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>df</i>	<i>Sig</i>
Non-LC	173	19.95	29.40			
				-.26	312	.80
LC	141	20.77	27.41			

Missing 4

Research question 3. Among alternative admissions college students, is there a difference in cumulative GPA for students who participated in learning communities as compared to students who did not participate in a learning community?

Two independent sample *t*-tests were conducted. Grade point average earned at the end of fall 2006 semester for the two groups was examined by the first *t*-test. The results are indicated in Table 17.

Table 17

The t-test for Alternative Admissions College Students in Learning Communities and Non-Learning Communities Using GPA Earned Fall 2006

<i>Group</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>df</i>	<i>Sig</i>
Non-LC	173	2.06	1.32			
				-1.31	312	.19
LC	141	2.25	1.26			

Missing 4

Equal variances were assumed based on the results from Levene's Test for Equality of Variances. The results were $t(312) = -1.31, p = .19$. $M = 2.06$ and $M = 2.25$. There were no statistically significant differences between the two groups in grade point average earned at the end of the fall 2006 semester.

The cumulative grade point average earned for the two groups was analyzed by the second *t*-test. The results are listed in Table 18.

Table 18

The t-test for Alternative Admissions College Students in Learning Communities and Non-Learning Communities Using Cumulative GPA Earned

<i>Group</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>df</i>	<i>Sig</i>
Non-LC	173	1.63	1.03			
				-.10	312	.92
LC	141	1.64	.98			

Missing 4

Results from Levene's Test for Equality of Variances were not significant. Therefore, equal variances were assumed. The *t*-test results were $t(312) = -.10, p = .92, M = 1.63$ and $M = 1.64$. There were no statistically significant differences between the two groups in cumulative grade point average earned.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The purpose of higher education in the United States before the Civil War was to prepare men for Christian ministry. This mission was greatly changed in the twentieth century when post-secondary education expanded in both size and scope (Goldin & Katz, 2008). The concept of student retention did not begin in earnest until the 1950's, when returning soldiers from WW II utilized their educational benefits with the implementation of the GI Bill of 1944. Undergraduate student retention at colleges and universities is now a regular area of focus in postsecondary institutions, especially after Tinto brought the study of student retention to the forefront beginning in the 1970s.

In much of the research, colleges and universities with high freshmen retention rates tend to have a higher percentage of students who graduate within four years (Lau, 2003). A key factor in retaining students toward graduation is through student involvement (Tinto, 2006-07; Kuh, Cruce, Shoup, Kinzie, & Gonyea, 2008). Student involvement is enhanced by creating and establishing learning communities, especially for freshmen students, as a strategy to impact retention.

In learning communities, students take two or more linked courses as a cohort group and work closely with one another and with their professors (Andrade, 2008; Zhao & Kuh, 2004). This course structure encourages the integration of learning across courses and involvement of students with "big questions" that matter beyond the classroom (Kuh, 2008). Boyer's six principles of creating campus community - purposeful, open, just, disciplined, caring, and celebrative - undergird the learning community concept (Boyer, 1997).

Learning communities were implemented in the fall 2006 semester at Metropolitan Urban University (MUU) as a strategy to affect the institution's student retention and graduation rates. The Alternative Academic Division (AAD) at MUU implemented the paired learning community model as part of a university-wide initiative. Students enrolled in two individual courses that were linked together for the fall and winter semesters in the 2006-07 academic year. Participation in the learning community was voluntary. The purpose of this nonexperimental, retrospective, longitudinal research was to examine whether learning community participation affected the retention, within a six-year period, of first time in any college (FTIAC), at-risk, African American students enrolled at a major urban, research, primarily commuter institution.

The theoretical basis of student retention was discussed from sociological, organizational, and psychological constructs. Tinto incorporated sociological concepts in his *Theory of Student Departure*, *Student Integration Model*, and *Interactionist Theory*, that focused on students' ability to successfully manage separation, transition, and integration (Ackerman & Schibrowsky, 2008; Braxton, Hirschy, & McClendon, 2004; Kuh & Love, 2000; Tinto, 1988, 1993). Bean (1980, 1983) and Berger (2001) addressed student retention from an organizational behavior perspective, whereby students must learn how to navigate the bureaucratic, collegial, political, symbolic, and systemic dimensions of an institution. Additionally, students must overcome the actions of the organizational agents of the institution in order to persist.

Bean and Eaton (2002) and Deci and Ryan (2008) used psychological principles to explore student attrition. Bean and Eaton postulated that four psychological processes lead to academic and social integration: positive self-efficacy, handling stress, increasing efficacy, and internal locus of control. Likewise, Deci and Ryan's (2008) Self Determination Theory (SDT) focused on autonomous motivation (intrinsic motivation and extrinsic motivation) and controlled

motivation (external regulation and introjected regulation). Student retention is increased when extrinsically motivated actions also become self-determined as individuals identify with and fully assimilate into their regulation (Ryan & Deci, 2000).

The aspect of a student's culture and the perception of prejudice and discrimination have a relationship on student retention. Guifrida (2006) addressed the need for minority students to connect to other students with shared cultural backgrounds. Kuh and Love (2000) created eight propositions that outlined college student persistence as interpreted through a cultural lens. Cabrera, Nora, Terenzini, Pascarella and Hagedorn (1999) discussed four assertions that play a role within the adjustment to the college process for African American students. Similarly, institutional climate is integral for student retention, especially for at-risk African American students who attend PWIs. Jones (2001) summarizes the institutional factors that impact the degree of social and academic integration for student success:

1. *The need to adjust to a new environment, a different value system, and an intensified awareness of one's own ethnic minority status.*

For most African American students, attending college represents disjunction – not a rite of passage into one's cultural traditions, but often a breaking away from family and cultural heritage.

2. *The need to receive adequate financial aid.*

The contribution to the successful persistence and graduation of African American students of adequate amounts and types of financial aid cannot be overly stressed. Financial aid is often the primary consideration in making the decision to continue or leave.

3. *The need to perceive the social and academic climate as inclusive and affirming.*

The research is consistent in pointing out that, for example, African American students attending predominantly White campuses experience more stress, racism, and isolation and are less likely to persist than their counterparts at historically Black colleges.

4. *The need to establish long-term goals, short term objectives, and a commitment to both.*

African American students often share with majority students' incongruence in long- and short-term goals and the ability to achieve them. However, incongruence between goals and realistic self-appraisal is particularly critical for the multicultural student whose models of careers or educational opportunities may be limited.

5. *Students' personal characteristics.*

Student background characteristics that were found to correlate with successful achievement include family income level, educational level of parents, and the student's academic preparation (pp. 8-11).

Method

A nonexperimental, retrospective, descriptive cohort research design using existing student demographic and academic data was used to examine if African American students who were admitted into the Alternative Admissions Division (AAD) at MUU in the fall 2006 semester would have greater academic outcomes (e.g. GPA, persistence, credit hours earned, graduation) in a six-year period than African American AAD students who did not participate in a learning community in the fall 2006 semester. Student demographic and academic data were collected from MUU institutional sources. The collected data were then translated into a

computer format and entered into SPSS (Version 22), a statistical software database. SPSS was also used to analyze the data through crosstabulations and *t*-tests.

Findings

Descriptive and inferential statistics were used to analyze the data. The descriptive statistics included categorical and continuous variables. Following is a discussion of the findings of the categorical variables.

Learning Community Participation

Participation in the learning community was voluntary. As a result, there were fewer students in the learning community cohort than the non-learning community. Voluntary cohort participation was described in Engle, Reilly, and Levine (2004). In contrast, Baker and Pomerantz (2001) matched the sample and the control group on variables such as gender, age, ACT score, and enrollment status.

Ethnicity

This research focused on African American students in learning communities. Taylor, McGowan, and Alston's (2008) research also focused entirely on African American students. African American students were included in other studies, but in varying degrees (Baker & Pomerantz, 2001; Hill & Woodward, 2013; Laskey & Hetzel, 2011; Padgett & Reid, Jr., 2003; Titus, 2004).

Gender

More female students than male students were present in both cohort groups. These same results were found in Baker and Pomerantz (2001); Engle, et al. (2004); Hill and Woodward (2013); Laskey and Hetzel (2011); and Padgett and Reid, Jr. (2003). Two of the learning

communities in J.L. Johnson (2001) also had a female majority. For the remaining learning community studies, the females and males were evenly divided or not indicated.

Enrollment Status

Almost three-fourths of the students in this research were enrolled full-time (minimum 12 credit hours). For learning community participants, slightly more than 80% of the students were enrolled full-time. Similar results were indicated in Baker and Pomerantz (2001).

High School Type and Location

The overwhelming majorities of the students in the sample attended a public high school in the same urban location as MUU. The participants in Laskey and Hetzel (2011) were also predominately from a public high school located in the same city as the institution.

Dormitory Status

Commuter students comprised the majority of the students in this research. Baker and Pomerantz (2001); Waldron and Yungbluth (2007); and Wathington, Pretlow III, and Mitchell (2011) also studied the relationship between commuter students and learning community participation.

Financial Aid

Most of the students in the dataset were financial aid recipients. More of the learning community participants received financial aid than did the non-learning community participants. However, Titus (2004) reported that the average freshmen financial need was not related to persistence in four-year institutions.

Academic Status

At the end of fall 2006, there was a greater percentage of learning community students on academic probation. This result is in stark contrast to the results in Baker and Pomerantz (2001),

where the learning community participants were more successful than the control group in terms of academic probation.

Learning to Learn® Course

All students in the research dataset were required to take Learning to Learn ® (LTL), a learning strategy skills course, in the fall 2006 semester. There were no overwhelming differences between the grades earned by the two cohort groups. These results contrasted with the findings by Wathington, et al. (2011), where a common anchor course, similar to LTL, was used for each community college learning community.

Number of Students Graduated

Learning community participation did not affect six-year graduation rates. Only three learning community participants graduated within a six-year period. Similarly, Singell and Waddell (2010) concluded that at-risk students who do not return for the second year were least likely to graduate within five years.

Number of Terms Attended

The number of terms that students in the dataset attended ranged from one to 19 semesters. The number of terms attended was almost evenly divided between learning community and non-learning cohorts. Approximately one-quarter of the students only attended one semester. Number of terms attended for learning community students was greater than the control cohorts in Bell, Reisen, Zea (1999); Buch and Spalding (2008); and Waldron and Yungbluth (2007).

Continuous variables were used to analyze students' age, high school grade point average (HSGPA), ACT score, and expected financial contribution (EFC). Following is a discussion of the findings of these variables.

Age

The mean age for the learning community participants was slightly lower than that of the non-learning community group. The majority of the students in the sample were considered to be traditional students, less than 24 years of age. This is consistent with the mean age in the learning community literature (Baker & Pomerantz, 2001; Buch & Spalding, 2008; Engle, et al., 2004; Hill & Woodward, 2013; J.L. Johnson, 2001; Johnson & Romanoff, 1999; Padgett & Reid, Jr., 2003; Taylor, et al., 2008; Waldron & Yungbluth, 2007; and Wathington, et al., 2011). In addition, Goenner and Snaith (2003) concluded that the average age of students was significantly and negatively related to student graduation rates.

ACT & HSGPA

The ACT and HSGPA means for the learning community group were slightly higher than for the non-learning community group. Smith (2005) found an interaction effect between HSGPA and college GPA. Lotkowski, Robbins, and Noeth (2004) concluded that HSGPA had the strongest factor on student retention. Laskey and Hetzel (2011), however, recommended that ACT scores and/or HSGPA were not good indicators of college success and/or student retention.

Financial Expected Family Contribution (FEFC)

There was a large variance in means between the learning community group and the non-learning community group for financial expected family contribution (FEFC). This suggests that there are differences in the socioeconomic status of the participants in the sample. The FEFC mean for learning community participants was smaller than for the non-learning community participants. Lotkowski, et al. (2004) found a positive relationship between socioeconomic status (SES) and student retention. SES was also analyzed by Lotkowski, et al. (2004) in order to ascertain if students needed to work in addition to receiving financial aid funds. Titus (2004)

concluded that average socioeconomic status (SES) was unrelated to student persistence at a four-year institution.

Three research questions were developed to examine the data using inferential statistical analyses. The significance of the statistical decisions was based on a criterion alpha level of 0.5. Independent sample *t*-tests were conducted to answer the following research questions.

Research question 1. Among alternative admissions college students, is there a difference in the six-year retention rates for students who participated in learning communities as compared to students who did not participate in a learning community?

After execution of the independent sample *t*-test, equal variances were assumed. The resulting *p* value for the *t*-test was not statistically significant. Thus, there were no statistically significant differences between the learning community students and the non-learning community students for six-year retention rates. This result is in contrast to the findings on learning communities and retention in the literature (Bell, et al., 1999; Buch & Spalding, 2008; Goenner & Snaith, 2003, J.L. Johnson, 2001; Johnson & Romanoff, 1999; Robinson, 2004; Wathington, et al., 2011).

Research question 2. Among alternative admissions college students, is there a difference in the number of credit hours earned for students who participated in learning communities as compared to students who did not participate in a learning community?

Two independent sample *t*-tests were conducted to answer this research question. First, the number of credit hours earned at the end of fall 2006 semester for both cohorts was tested. The results for this *t*-test were not statistically significant. Secondly, the total number of credit hours that students earned during their matriculation at MUU was investigated. Like the first *t*-test, the results of the second *t*-test were not statistically significant. These results were in contrast to the studies by Baker and Pomerantz (2001), Hill and Woodward (2013), and Waldron and Yungbluth (2007).

Research question 3. Among alternative admissions college students, is there a difference in cumulative GPA for students who participated in learning communities as compared to students who did not participate in a learning community?

Two independent sample *t*-tests were conducted to test this research question. One *t*-test tested the grade point average earned at the end of fall 2006 semester for the two groups. The second *t*-test tested the cumulative grade point average earned for each group. The results for both *t*-tests were not statistically significant. These results were consistent with the findings on GPA by Hill and Woodward (2013), but differed for the findings on GPA in Baker and Pomerantz (2001); Engle, et al. (2004); Taylor, et al. (2008); and Waldron and Yungbluth, (2007).

Conclusions

Increased access to higher education has resulted in many students entering postsecondary institutions academically underprepared. Therefore, colleges and universities have created alternative pathways for students to enter their institutions, which present additional retention challenges. At MUU, students who apply and do not meet the regular admissions criteria are referred to the Alternative Admissions Division (AAD) for consideration of admittance.

Learning communities were established in the AAD In fall 2006. This researcher examined the effectiveness of learning communities on the population of African American, FTIAC, AAD students in the fall 2006 semester. According to the research results, there were no statistically significant differences in the AAD students who participated in learning communities and students who did not participate in learning communities. Although there were no statistically significant differences in the data, the findings do show some improved academic outcomes for some of the variables examined for the non-learning community participants as

compared to learning community participants (see Table 19). Specifically, compared to learning community participants, non-learning community participants attended MUU for a slightly longer period of time, earned slightly more credit hours in fall 2006, and were moderately more likely to be on regular academic status (38% vs. 29%) and less likely to be on academic probation (57% to 66%) at the end of the first semester.

The slightly better academic performance for non-learning community participants is counterintuitive. Not only did participation in learning communities not seem to help MUU African American students, but learning community participants entered MUU with certain academic advantages compared to their non-learning community counterparts. Specifically, learning community participants were much more likely to attend MUU on a full-time basis (81% vs. 67%), attend a high school in the suburbs rather than in the city where MUU is located (54% to 45%), possess a slightly higher high school grade point average (2.3 vs. 2.18), and also a higher ACT score (15.7% vs. 15.5%).

However, there is one key variable, socioeconomic status, where non-learning community participants showed an advantage over their learning community peers. In particular, the mean financial expected family contribution (FEFC) of non-learning community participants was \$3,417, nearly 50% higher than the mean FEFC (\$2,681) of learning community participants. Similarly, a higher proportion of learning community students, 68.8%, were financial aid recipients, compared to 64.2% of non-learning community students.

The differences in these proxy measures of the economic position of students' families of origins are modest. Still, they are consistent with the view of sociologist James Coleman in his classic 1966 study, *Equality of Education Opportunity*, that socioeconomic status is the predominant factor in influencing student achievement (Coleman, 1966). In this case, it may be

that family background trumped the very limited and temporary impact of a one academic year learning community.

These results are in contrast to the majority of the findings prevalent in the literature on learning communities and student retention. Several issues may have contributed to these results. First, many studies in the literature focused on learning communities at residential institutions. MUU is primarily a commuter institution. Commuter students are less likely to fully engage in campus life and are more likely to attend part-time and/or stop-out, all factors that have a negative effect on persistence (Keels, 2013).

Second, the fall 2006 semester was the inaugural semester for learning communities at MUU. The AAD learning community recruitment process as well as the learning community design could have affected the student attrition rate, as these factors were not assessed until the end of the 2006-07 academic year (AAD Final Report, 2006-07). Third, a slight majority of the students in this research attended high school in the same urban location as MUU. This suggests that if students are not academically prepared to succeed at MUU, the high school curriculum should be evaluated. Finally, this was a retrospective research design; therefore, the students in the dataset were not available to provide additional demographic information such as hours of employment and student activities which could have impacted the findings.

Different measures of student retention should be considered. Currently, the measurement of retention starts with a student's initial cohort enrollment at a post-secondary institution. When students leave the institution without completing their degree program, they are considered to be drop-outs and stop-outs (Robinson, 2004); this affects the institution's cohort retention rate. However, many of these students ultimately complete their degree program at other institutions. Therefore, mechanisms should be implemented to track retention for students who begin their

post-secondary education at one institution, then transfer and complete a degree program at another institution.

Similarly, current federal retention and graduation rates are based on full-time, FTIAC, primarily residential students. In contrast, MUU is a public, primarily commuter institution, which results in a lower graduation rate than the other public institutions in the state. Additionally, state funding models award MUU a much smaller proportion of funds in comparison to other state public institutions. Therefore, alternative retention and graduation measurement processes should be developed to gauge the success of segmented groups, e.g., part-time students (Jaschik & Lederman, 2013).

Limitations of the Research

There were several limitations to this research. The learning community type in this research was a paired model. Therefore, the results would not be generalizable to other learning community model types. Also, this research focused on at-risk African American students. The results may not apply to students of other races, ethnicities and socioeconomic status. Finally, students self-selected into the learning community. The research results would not be applicable to learning community research where students were randomly assigned.

Implications for Practice

Student retention through degree completion is important, as it impacts the economic mobility of the greater society. According to a report from Complete College America, the vast majority of students enrolled at American public higher education institutions do not graduate within four years (Lewin, 20114). Waldron (2007) states that policy makers should be reminded that the most important thing that the United States can do in the next 20 years is to help as many qualified people attend and graduate from college so that they can be economically mobile.

Reports from the 2002 U.S. Census indicate that “ students with a bachelor’s degree can, on average, expect to earn \$2.1 million in their lifetimes – at least \$900,000 more than those who did not attend college” (Waldron, 2007, p. 33).

More so, according to the Lumina Foundation (2013-2016), 65% of U.S. jobs will require some form of post-secondary education by the year 2020. Therefore, the Lumina Foundation’s goal is to increase the number of Americans with high quality degrees, certificates, and other credentials by 60 percent by the year 2025. The mission, then, is that colleges and universities that serve an urban, at-risk, commuter population, should strive to offer programs and services that enhance retention and degree completion. As a result, students and institutions will succeed, and society will reap the benefits (Habley, Bloom, & Robbins, 2012).

Recommendations for Future Research

Additional research on the effect of learning communities on student retention for African American, FTIAC, at-risk, students at MUU is warranted. Since fall 2006, the regular admissions criteria at MUU have changed. Currently, there are no finite GPA and/or standardized test requirements; each applicant to MUU is evaluated individually on high school grade point average, standardized test score, and/or other supporting documentation (MUU Website, 2014). Thus, additional research on learning communities with a more recent African American, FTIAC, at-risk, cohort is necessary in order to determine if the same research results would occur. Furthermore, future research should consider including the following student demographic variables:

- Highest level of parental education
- Parental marital status
- Number of hours worked per week

- Number of children
- Student involvement (e.g. intramural sports, fraternity/sorority, service learning, learning community, campus organizations)
- Level of student motivation
- Level of commitment
- Amount of tutoring assistance received

Finally, learning communities of various types have been established at MUU since fall 2006. These learning communities differ among the schools, colleges, and departments of MUU. Additional research, including randomization methods, on these learning communities would provide opportunities to further examine the effect of learning communities on student retention at an urban, primarily commuter, research institution.

Table 19

Summary of Variable Outcomes

Variable	Learning Community	Non-Learning Community
Student Demographics		
Full-time attendance	81.6%+	67.6%
MUU high school	45.3%+	54.9%
Financial aid recipient	68.8%	64.2%+
HSGPA	2.3+	2.18
ACT	15.7+	15.5
Mean FEFC	\$2,681	\$3,417+
Academic Outcomes		
Regular academic status (End of first semester)	29.0%	38.1%+
Academic probation (End of first semester)	66.5%	57.2%+
Grade of A or A- in LTL course	36.2%+	31.8%
Attended MUU for only 1 or 2 semesters	46.8%	43.9%+
Mean credit hours earned (Fall 2006)	4.7	5.1+
Mean cumulative credit Hours earned	20.7+	19.9

Note. +Indicates the greater outcome; HSGPA = High school grade point average; FEFC = Financial expected family contribution

APPENDIX A

Categorical Variable Codes

Variable	Description	SPSS Code
Learning community participation	Indicates whether students participated in the AAD learning community in fall 2006	0 = No 1 = Yes 2 = Unknown
Gender	Describes the student gender as indicated on the admissions application	1 = Male 2 = Female
Race	Student racial identity	1 = Black/Non-Hispanic 2 = White/Non-Hispanic 3 = Hispanic 4 = Asian/Pacific Islander 5 = Other 6 = Unknown
Enrollment status	Full-time (12 \geq credit hours) Part-time (<12 credit hours)	1 = Full-time 2 = Part-time
High school type	High school attended or GED	1 = Public 2 = Private 3 = GED or Unknown
High school location	Geographical location of the high school attended	1 = Urban high school in the same city as MUU 2 = Suburban or rural high school in the MUU metro area 3 = Another urban high school 4 = Another suburban or rural high school 5 = GED or unknown
Dormitory residence status	Indicates if students lived in campus housing in fall 2006	0 = No 1 = Yes 2 = Unknown

Categorical Variable Codes (continued)

Variable	Description	SPSS Code
Financial aid recipient	Indicates if students received the Pell Grant in fall 2006	0 = No 1 = Yes 2 = Unknown
Academic status (Fall 2006)	Regular status (GPA ≥ 2.00) Academic probation (GPA < 2.00)	0 = Not applicable 1 = Regular status 2 = Academic probation
Number of students who graduated	Indicates if a degree was obtained by spring/summer 2012 or beyond	0 = Did not graduate 1 = Graduated in or before S/S 2012 2 = Graduated beyond S/S 2012
Grade in LTL course	The final grade earned in the Learning to Learn®(LTL) Course	A = 11; A- = 10; B+ = 9; B = 8; B- = 7; C+ = 6; C = 5; C- = 4; D+ = 3; D = 2, D- = 1; F = 0 W, WN, WF, WP, NR (missing)

APPENDIX B**Permission to Use Student Tracking Advising and Retention Systems (STARS)**

IRB Administration Office
87 E. Canfield, Second Floor
Detroit, Michigan 48201

July 25, 2014

To Whom It May Concern:

I support Ms. Cheryl Dean White's use of STARS (the Student Tracking, Advising, and Retention System) to obtain the data necessary for her Doctoral Research project. It is understood that she will abide by all of the rules of privacy set out by FERPA and will de-identify all subjects obtained from the Stars or Banner for the purposes of her research.

Sincerely,



Robert Berman
Professor, Department of Mathematics
Project Manager, STARS
Wayne State University
Detroit, Michigan 48202

APPENDIX C

Human Investigative Committee (HIC) Approval

**WAYNE STATE
UNIVERSITY**

IRB Administration Office
87 East Canfield, Second Floor
Detroit, Michigan 48201
Phone: (313) 577-1628
FAX: (313) 993-7122
<http://irb.wayne.edu>

NOTICE OF EXPEDITED APPROVAL

To: Cheryl White
Credit Prog Lifelong
5057 Woodward, Suite 3101

From: Dr. Deborah Ellis or designee *D. Mahan / RB*
for Chairperson, Behavioral Institutional Review Board (B3)

Date: July 29, 2014

RE: IRB #: 071914B3E

Protocol Title: Do Learning Communities Matter? An Examination of the Effect of Learning Communities on the Retention of At-Risk, African-American Students at an Urban Research University

Funding Source:

Protocol #: 1407013206

Expiration Date: July 28, 2015

Risk Level / Category: Research not involving greater than minimal risk

The above-referenced protocol and items listed below (if applicable) were **APPROVED** following *Expedited Review Category* (#5)* by the Chairperson/designee for the Wayne State University Institutional Review Board (B3) for the period of 07/29/2014 through 07/28/2015. This approval does not replace any departmental or other approvals that may be required.

- Revised Protocol Summary Form (received in the IRB Office 7/29/2014)
 - Protocol (received in the IRB Office 7/8/2014)
 - A waiver of consent and a waiver for written documentation of informed consent have been granted according to 45 CFR 46.116(d). This waiver satisfies: 1) risk is no more than minimal, 2) the waiver does not adversely affect the rights and welfare of research participants, 3) the research could not be practicably carried out without the waiver, and 4) providing participants additional pertinent information after participation is not appropriate.
-

- * Federal regulations require that all research be reviewed at least annually. You may receive a "Continuation Review/Reminder" approximately two months prior to the expiration date; however, it is the Principal Investigator's responsibility to obtain review and continued approval *before* the expiration date. Data collected during a period of lapsed approval is unapproved research and can never be reported or published as research data.
- * All changes or amendments to the above-referenced protocol require review and approval by the IRB **BEFORE** implementation.
- * Adverse Reactions/Unexpected Events (AR/UE) must be submitted on the appropriate form within the timeframe specified in the IRB Administration Office Policy (<http://www.ih.wayne.edu/policies-human-research.php>).

NOTE:

1. Upon notification of an impending regulatory site visit, hold notification, and/or external audit the IRB Administration Office must be contacted immediately.
2. Forms should be downloaded from the IRB website at each use.

*Based on the Expedited Review List, revised November 1998

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ABSTRACT**DO LEARNING COMMUNITIES MATTER?: AN EXAMINATION OF THE
RETENTION OF AT-RISK AFRICAN AMERICAN STUDENTS AT A PUBLIC,
URBAN, COMMUTER, RESEARCH UNIVERSITY**

by

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May 2015

Advisor: Dr. Monte Piliawsky**Major:** Educational Leadership and Policy Studies**Degree:** Doctor of Education

The effectiveness of learning community participation on the retention of at-risk, African American students at a public, urban, primarily commuter, research institution was the focus of this research. A nonexperimental, retrospective, descriptive, cohort research design was used with a sample of 318 first time in any college (FTIAC) African American students enrolled in the Alternative Admission Division (AAD) of Metropolitan Urban University (MUU) starting in the fall 2006 semester. The primary research hypothesis was that African American students who were admitted into the AAD at MUU in the fall 2006 semester would have greater academic outcomes (e.g. grade point average and credit hours earned) and persistence (retention and graduation rates) in a six-year period than African American AAD students who did not participate in a learning community in the fall 2006 semester. Three research questions were used to test the hypothesis:

1. Among alternative admissions college students, is there a difference in the six-year retention rates for students who participated in learning communities as compared to students who did not participate in a learning community?

2. Among alternative admissions college students, is there a difference in the number of credit hours earned for students who participated in learning communities as compared to students who did not participate in a learning community?
3. Among alternative admissions college students, is there a difference in cumulative GPA for students who participated in learning communities as compared to students who did not participate in a learning community?

Descriptive and inferential statistics were used to analyze the data. The results of the descriptive statistics did not indicate any statistically significant differences between the two groups. Independent sample *t*-tests were used to examine the research questions. Based on the research results, there were no statistically significant differences between students who participated in learning communities and those who did not. Additional research on the effect of learning communities on student retention for African American, FTIAC, at-risk, students at MUU is warranted.

AUTOBIOGRAPHICAL STATEMENT

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