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Comparative Achievement of Students in a Freshman Academy with Those Not in a Freshman Academy by Race and Gender in One East Tennessee High School.

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by

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ABSTRACT

Comparative Achievement of Students in a Freshman Academy with Those Not in a Freshman Academy by Race and Gender in One East Tennessee High School

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The purpose of this study was to compare the achievement of students who participated in a freshman academy program to the achievement of those who participated in the traditional high school curriculum. The researcher used grade point average and composite ACT score as determinants of achievement. The population consisted of the graduating classes of 2009 and 2010 at one East Tennessee high school. Independent sample *t* tests evaluated the relationship between achievement and type of freshman experience. The independent variables were participation in the freshman academy, being male, being female, and race. The dependent variables were grade point average and ACT composite score. The researcher made comparisons between all students, female students, male students, African American students, and white students in both programs.

The quantitative findings revealed that males who participated in the freshmen academy achieved at a significantly higher rate than males who did not. In addition, the findings indicated white students who participated in the academy performed at a significantly higher rate than African American students who participated in the academy. There were no significant differences in the achievement of the entire population of each class, female students, white students, or African American students.

DEDICATION

This research is dedicated to:

my father Tony Campbell and my brother Robbie Campbell. I wish you could have been here to see our dreams come true.

my husband Tim my mother Sherry Campbell and my wonderful friends, who have all helped me achieve this goal.

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CHAPTER 1

INTRODUCTION

Dorran (2001) remarked that high school is a link from the elementary schools and college or the world of work. In this phase of education, students are expected to gain the final pieces of knowledge necessary to support a life of productivity and achievement (Doran, 2001). The skills and knowledge students acquire are but one aspect of the maturation process preparing students for the challenges that lie ahead. According to Legters and Kerr (2001) researchers contend that this time in a child's life is particularly difficult because of the "rapid social, emotional and cognitive development" occurring simultaneously (p. 1). However, the academic influences one experiences in high school have the ability to shape the course of a student's life in very tangible ways because earning a high school diploma has such serious implications on a student's future (High School Graduation Rate: Non-regulatory Guidance, 2008). The present study examined one component of the high school process, the freshman academy, as a means of assisting the high school transition year. The ninth grade year is said to be the most crucial year of high school (Legters & Kerr, 2001). This transition year from middle school or elementary school to high school represents a path to graduation that some students cannot or do not follow. The ability to succeed in ninth grade is proven to be directly related to the ability to graduate from high school (Hughes, Copley, & Baker, 2005).

In fact, McIntosh and White (2006) report that freshmen decide in the first few weeks of their ninth grade year whether or not to continue their high school education. In response to the critical nature of ninth grade, many high schools across the nation have chosen to increase the level of support offered to ninth graders by implementing ninth grade transition programs. In 2004-2005 there were 154 schools with ninth grade only programs (National High School

Center, 2007). Schools with ninth grade programs reported a ninth grade retention rate of 8%, while those without these programs reported a ninth grade retention rate of 24% (National High School Center, 2007).

Importance of a Smooth Transition to High School

Maute and Brough (2002) reported that the results of the Transitions Concerns Survey administered in both 1991 and 2001 indicated that students' main concerns about transitioning to high school focus around esteem and self-actualization issues. The tours and course descriptions that many schools include as their transition program to not address these issues, but instead, they address the safety and security issues that adults assume are the most important (Maute & Brough, 2002; Oakes & Waite, 2009). Legters and Kerr (2001) stated that students who had difficulty with transition often experienced lower grades, more behavior problems, and did not "fit in" as well as their peers. If students do not get the information and support they need, many ninth graders think that high school is impersonal and do not attempt to form the bond between themselves and their new school (Oakes & Waite, 2009). A smooth transition, including a support system, can strengthen the connection between the student and his or her new school (Maute & Brough, 2002). In order to facilitate smooth transition from middle school to high school, transition should be seen as a process instead of just as an event (Maute & Brough, 2002). Because academic "failure during the ninth grade transition is directly linked to the probability of dropping out," (Legters & Kerr, 2001, p. 3) schools must take this transition seriously.

Rationale for Focusing on the Ninth Grade Year

The No Child Left Behind Act of 2001 indicates that high schools must reach the benchmark of 100% of the class of 2014 graduating. Because research indicates that the freshman year is

crucial to graduation, many high schools have begun to place emphasis on the first year of high school. In addition Tennessee has implemented the Tennessee Diploma Project that requires achievement of higher standards for all students. While No Child Left Behind (2001) mandates schools place greater focus on graduation, the Tennessee Diploma Project requires focus on graduation and higher achievement. The need for this change was necessitated by comparisons between the Tennessee achievement data and national testing data. In 2005, 87% of Tennessee's eighth-grade students were proficient in both reading and math according to the Tennessee Comprehensive Assessment Program (TCAP), but only 26% and 21% (respectively) were proficient according to the National Assessment of Educational Progress (NAEP) test . The American Diploma Project, on which the Tennessee Diploma Project is based, called for new standards to be implemented in language arts and math from kindergarten through 12th grade (Tennessee Diploma Project Aligned Expectations, n.d.). The first class to graduate with the new requirements will be the class of 2013. With the task of achieving higher standards and improving the graduation rate, the focus on achievement and success during the ninth grade year cannot be ignored.

Higher Standards

With the advent of the Tennessee Diploma Project, increasing graduation rates can only be one part of freshman transition programs. These programs must not only provide strenghtened support in order to increase the likelihood of graduation but also strive to improve the academic achievement of their participants as well. Considering that there is research that states that many ninth graders earn lower grades than those previously earned in other grades, it is reasonable to expect a ninth grade transition program to address student achievement as well (Legters & Kerr, 2001). The Transition Concerns Survey questioned students about the transition from middle to

high school in both 1991 and in 2001; both administrations of the survey resulted in the top concern of students being the ability to get good grades (Maute & Brough, 2002). Despite the concern for good grades that students expressed, many students do experience lower achievement during the transition from middle school to high school (Legters & Kerr, 2001). Some research attributes this to the increased rigor students experience in high school as compared to the level of difficulty they experienced in middle school, while others attribute this to the transition (Hughes et al., 2005). Regardless of the cause of the decreased academic performance, an effective transition program could address the issues of both retention and achievement.

Transition's Effect on Achievement

While it can be stated that ninth graders in general experience decreased achievement as compared to their middle school performance, there is also evidence to support that subgroups of students do not fare equally in terms of academic achievement (NAEP- Reading 2009: Grade 8 National Results, NAEP-Mathematics 2009: Grade 8 National Results). The National Report Card for 2009 indicates that for racial subgroups there are differences in the level of achievement attained by students in each group in regard to reading and mathematics. This report shows that white and Asian students performed better than Hispanic and African-American students in reading and mathematics, outscoring them by approximately 30 scale score points on both assessments. With evidence to support that ninth grade is pivotal and that students are not entering ninth grade on equal footing, freshman transition programs must address not only the graduation rate but also lessening the achievement gap that exists between racial subgroups. In a study of 124 high schools in Maryland, Legters, and Kerr (2001) found that despite the amount of transition interventions, schools with low populations of minority and poverty students

outperformed those with high numbers of minority and poverty students in terms of grades and standardized testing (p. 9). The National Report Card for 2009 does not indicate a difference in the achievement levels of males and females; however, this is a point of comparison often explored in research (NAEP- Reading 2009: Grade 8 National Results, NAEP-Mathematics 2009: Grade 8 National Results).

The Freshman Academy Characteristics

Clark and Hunley (2007) state that freshman encounter many similar difficulties with transition; typically these include anxiety about changing schools, social pressures, and increased academic expectations and responsibilities. There are multiple ways to address the difficulties associated with the transition from middle school to high school. Some school districts address the transition with activities that include parent meetings about courses and athletic offerings, small-group question and answer sessions, peer-mentoring programs, advising sessions, and units about change in the curriculum (Maute & Borough, 2002). However, many schools have chosen to adopt the freshman academy model as a comprehensive means of addressing the ninth grade transition year. Usually, the goals of a freshman academy are to facilitate the smooth transition from middle to high school, help students feel a connection with their new school, provide a structured environment, and increase the amount of communication between the school and parents (Clark & Hunley, 2007). This type of program also helps reduce the apprehension about attending a new school by assisting students in becoming familiarized with their new school (McIntosh & White, 2006).

There are several characteristics that are typical of freshman academy programs. Bernstein, Millsap, Schimmenti, and Page (2008) noted that freshman academies usually incorporate a common planning time for teachers, teams of teachers, some autonomy over procedures, a

dedicated physical space, and common scheduling practices. These characteristics help the academy function as an entity within the school at large.

Common planning time for freshman academy teachers serves several purposes. While in most common planning sessions, teachers are able to plan interdisciplinary units for their shared groups of students, discuss individual student needs, and share best practices (Bernstein et al., 2008). According to McIntosh and White (2006) common planning time is also a means of facilitating interventions for at risk students. In their study Bernstein et al. (2008) found anecdotal evidence from both students and teachers indicating that teachers with common planning time knew their students better and had better relationships with their students as a result of the bonding within the group of teachers based on shared students.

Another characteristic of freshman academies is teacher teams. Teacher teams normally represent the four core-curricular areas: English, math, science, and social studies (Bernstein et al. 2008). These teams teach a common group of students. Clark and Hunley (2007) report that these teacher teams sometimes operate on the middle school model, which includes weekly team meetings to plan interdisciplinary units and discuss students. McIntosh and White (2006) reported that some freshman academies opt to include an administrator and counselor who are dedicated to the academy's needs.

Freshman academies often have control over some procedures. Bernstein et al. (2007) found in their research that some schools allow freshman academies to have shared-decision making in regard to academy organization, discipline policies, budgeting, and schedule. Clark and Hunley (2007) reported that as part of the freshman academy at Muhlenberg South High School, there was a structured reward system in place as an incentive for appropriate behavior, attendance, and

grades. Having the ability to influence the operation of the freshman academy is one way staff can influence the success of the academy.

A dedicated physical space for the freshman academy is another standard aspect of freshman academies (Bernstein et al., 2008; Clark & Hunley, 2007). This space is most often isolated from the rest of the school to facilitate the school-within-a-school concept (Clark & Hunley, 2007). Bernstein et al. (2008) observed that many schools attempt to assign classrooms so that teacher teams are within close proximity to one another to ease in-between class transitions. If a single building cannot be assigned to the freshman academy, some schools opt to assign a wing or hall to the ninth graders (Clark & Hunley, 2007).

Attempting to construct a schedule that serves only one section of the school is an undertaking each school implementing a freshman academy will consider. Bernstein et al. (2008) noted that most schools in their study created a schedule that allowed students to take the majority of classes within the academy. Some schools that used the traditional 4X4 block found it necessary to modify the block schedule for the freshman academy (Clark & Hunley, 2007). Creative scheduling on the part of the school can help further shelter freshman by creating transition times that are independent of the class changes for the other students (Clark & Hunley, 2007). One particular academy that Bernstein et al. (2008) examined included flexible time in the schedule for staff development or teacher team meetings. Some schools opt to not only secure class and transition times for freshmen but a separate lunch period as well (McIntosh & White, 2006).

Freshman Academies, Race, and Gender

Schools struggle to meet the needs of all students. An achievement gap persists between many subgroups of students (Ramierez & Carpenter, 2009). This achievement gap persists in

gender groups as well as racial groups. As schools attempt to address these groups, freshman academies seem to be one way of making a difference for students who traditionally have difficulty in school as well as easing the transition for all students.

The achievement gap is not a new phenomenon. Research confirms that the racial achievement gap has persisted since the 1970s (Haycock, 2001). Unfortunately, many minority children fall behind academically early in their school careers and continue to fall further behind as they progress through school (Farkas, 2003). As one examines achievement, differences in the academic performance among genders surface as well. Research indicates that during the 1970s and 1980s females were thought to be outperformed by their male counterparts (Skelton, 2010). However, more recent research reveals females may be surpassing males in the classroom

There are many different paths to constructing a freshman academy and groups of students to consider. With well-placed scaffolding and persistent observation, drop-out rates could be minimalized.

Effects of Dropouts

Despite the extra support incorporated into high schools, many American students do not complete high school. In 2007 nearly 6.2 million Americans or 16% of the population age 16 to 24 were high school dropouts (Center for Labor and Market Studies, 2009). In 2008 Tennessee's dropout rate was 30% (Alliance for Excellent Education, 2009). In a time of economic uncertainty the costs of dropouts become an increasingly large financial burden on our state and nation. The Center for Labor and Market Studies (2009) found that during the working life of a graduate he or she is expected to earn approximately $400,000 more than a dropout. Due to their lower earning potential, dropouts also contribute less to federal, state, and local

taxes, but they receive higher rates of benefits from assistance programs and are disproportionately represented in correctional costs. The number of dropouts in Tennessee's class of 2008 alone will cost the state an estimated $7.3 billion in lost wages (Alliance for Excellent Education, 2009).

Conclusion

In conclusion the transition from middle to high school is a time of upheaval in the life of students (Legters & Kerr, 2001). Students move into a higher stakes environment where failure to perform often results in failure to graduate. Knowledge of this truth has spurred many high schools to implement transition programs. These programs are designed to support students during this crucial point in their education, increase graduation rates, and bolster student achievement as well.

Statement of the Problem

The research indicates that the ninth grade is an indicator of future academic success. Data show discrepancies in the achievement of the subgroups of gender and race (NAEP- Reading 2009: Grade 8 National Results, NAEP-Mathematics 2009: Grade 8 National Results). In response to these data and the No Child Left Behind Act of 2001, many schools have adopted freshman academies. Freshman academies are support systems designed to boost achievement and affect graduation rates because of the significance of the ninth grade year. The research indicates that the ninth grade year is significant indicator of future academic success (Legters & Kerr, 2001). One East Tennessee school system has responded to this research by implementing a freshman academy. The purpose of this study was to compare the academic achievement as measured by the ACT and grade point average of a group of students who participated in the traditional freshman year to a group of students who participated in a freshman academy

program. Because of a lack of available data on the individual basis, ACT scores were not appropriate for comparing males, females, and racial groups.

Research Questions

This study explores the following questions as they related to the effects of a freshman academy on academic achievement:

1. Is there a significant difference in the achievement of students who participated in the freshman academy and the achievement of students who did not participate in the freshman academy at an East Tennessee high school as determined by
    - The ACT composite score?
    - The final grade point average?
2. Is there a significant difference in the achievement of male students who participated in the freshman academy and the achievement of male students who did not participate in the freshman academy at an East Tennessee high school as determined by the final grade point average?
3. Is there a significant difference in the achievement of female students who participated in the freshman academy and the achievement of female students who did not participate in the freshman academy at an East Tennessee high school as determined by the final grade point average?
4. Is there a significant difference in the achievement of white students who participated in the freshman academy and the achievement of white students who did not participate in the freshman academy at an East Tennessee high school as determined by the final grade point average?

5. Is there a significant difference in the achievement of African-American students who participated in the freshman academy and the achievement of African-American students who did not participate in the freshman academy at an East Tennessee high school as determined by the final grade point average?
6. Is there a significant difference in the achievement of African-American students participating in the freshman academy and the achievement of white students participating in the freshman academy at an East Tennessee high school as determined by the final grade point average?

Significance of the Study

The ninth grade year is credited as being a determining factor for graduation, achievement, attendance, and various other aspects of student success (Hughes, Copley, & Baker, 2005; Legters & Kerr, 2001). In reply to the effect the ninth grade year can have upon a student, many high schools in America have implemented freshman academies. These programs are designed to ease the transition from middle school to high school by giving ninth graders increased support and guidance during this year of paramount importance. These programs work to increase the likelihood of student success. One measure of student success is achievement. In this study, the researcher attempts to determine if a freshman academy has influenced the achievement of gender and racial subgroups of students who have participated as compared to those who have not participated. The conclusions drawn from this study are intended to assist educators and administrators in the implementation, design, or evaluation of the freshman academy. If achievement data have been significantly affected, the results of this research could indicate that freshman academies have the ability to influence achievement and therefore are a means of meeting national and state achievement standards.

Definition of Terms

- Academic Achievement: for the purpose of the study, academic achievement is defined as performance level on the ACT and grade point average (ACT, 2010).
- Achievement Gap: "the disparity in performance between groups of students" (Education Week, 2004).
- ACT: test that "assesses students' general educational development and their ability to complete college-level work. The multiple-choice tests cover four skill areas: English, mathematics, reading, and science. The Writing Test, which is optional, measures skill in planning and writing a short essay" (America's most widely accepted college entrance exam, 2010).
- Freshman Academies: small learning communities designed to support ninth grade students during their first year of high school by providing more interaction with teachers, decreased interactions with upperclassmen, and increased academic support (Holland & Mazzoli, 2001).
- Grade Point Average (GPA): the GPA represents the average number of grade points a student earns for each graded high school course. Grade points are points per course credit assigned to a passing grade, indicating the numerical value of the grade. Dividing a student's total grade points earned by the total course credits attempted determines a student's GPA. Courses in which a student does not receive a grade, such as pass or fail and audited courses, do not factor into the GPA calculation (How is grade point average calculated?, 2007).

- Graduation Rate: “the percentage of students who graduate from a secondary school with a regular diploma in the standard number of years” (High school graduation dates: Non-regulatory guidance, 2008).
- National Assessment of Educational Progress (NAEP) : the only common assessment of America’s students in math, reading, science, writing, the arts, civics, geography, and U.S. history; it is administered periodically to fourth, eighth, and twelfth graders (NAEP overview, 2010).
- No Child Left Behind Act of 2001*:* the reauthorized Elementary and Secondary Education Act signed into law by President George W. Bush in 2001 that requires greater accountability for schools, more freedom for states and communities, proven educational methods, and more choices for parents. It is the main federal law currently influencing kindergarten through twelfth grade education (Four Pillars of NCLB, 2004).
- PowerSchool: a “fully integrated, web-based, cross-platform” student information management system that includes functions for scheduling, grading, and reporting (PowerSchool, 2008).
- School-within-a-School: “establishes within the school a smaller educational unit with a separate educational program, its own staff and students, and its own budget” (Dewees, 1999).
- Tennessee Comprehensive Assessment Program (TCAP): a standardized multiple-choice achievement test administered to Tennessee students in grades three through eight measuring reading, language arts, math, science, and social studies skills (Achievement Test).

- Tennessee Diploma Project: an adaptation of the American Diploma Project designed to increase the rigor of Tennessee high school course work to increase the preparedness levels of Tennessee students for the world of work or higher education (Tennessee Diploma Project).

Delimitations and Limitations

The population for this study included students in a suburban school district in East Tennessee who graduated in 2010 and participated in the freshman academy program in during the 2006-2007 school year as well as students in the same school district who graduated in 2009 who participated in the traditional high school curriculum during their ninth grade year, 2005-2006. These students all attended the single high school within the district. The 2009 Tennessee Department of Education Report Card described the school as having an enrollment of 837 students. This high school, as well as the other six schools within the district, was accredited by the Southern Association of Colleges and Schools. The demographics of the school consisted of 9.7% African-American, 1.1% Asian or Pacific Islander, 2.9% Hispanic, .3% Native American or Native Alaskan, and 85.9% white, which was fairly consistent with the school system at large (Greeneville High School, 2009).

Like many small, suburban school systems in the East Tennessee region, the student population is not as diverse as many larger urban districts. As a result, the conclusions of this quantitative study can only be generalized to schools with similar student demographics.

In 2009 the school reported an average composite ACT score of 22.8, while the state reported an average composite score of 20.7. The subtest results indicated an average score of 22.9 in English, 22.5 in math, 23 in reading, and 22.3 in science reasoning. The graduation rate for 2009

was 97% in this school, while the state graduation rate was 90% (Greeneville High School, 2009).

Additionally, not every student contributed both a grade point average and an ACT score. Some students who fell behind academically participated in a credit recovery program called the GAP program at this high school. These students are usually students who should have graduated the previous year. These students do not have an ACT score because of their special graduation circumstances. Also, some special education students were not required to take the ACT; however, these students generated a grade point average. Additionally, individual composite ACT scores did not identify students by gender or race; therefore, these scores could only be used to assess the academic achievement of the two graduating classes as whole groups and not the subgroups within the classes.

Also, because of the program's recent implementation, only one class of students who were participants in this program has graduated from this particular high school. Graduating seniors were included in this study. Dropouts or students leaving the cohort group for other reasons were not included in the study.

Overview of the Study

This study is organized into five chapters. Chapter 1 includes an introduction, statement of the problem, research questions, significance of the study, definitions of terms, delimitations and limitations, and an overview of the study. Chapter 2 consists of a review of literature related to the importance of the ninth grade year and the achievement levels of subgroups. The review of literature includes sections on the historical background of high schools and high school transition, the importance of ninth grade, traditional measures of achievement, the achievement gap, and freshman academies. The researcher explains the research methods employed in the

study in Chapter 3, including hypotheses, description of the population, data collection and data analysis methods, validity and reliability issues, and ethical considerations. Chapter 4 reports the findings of the study. Chapter 5 presents conclusions and recommendations from the study.

CHAPTER 2

REVIEW OF LITERATURE

Graduation from high school represents a key that has the potential to unlock success in a student's future. Facilitating a smooth transition into high school can assist students by establishing them in an environment where they feel confident, supported, and, in a sense, at home. Freshman academies aim to assist in the critical transition from middle to high school by providing additional support features in both the academic and developmental aspects of the lives of students. With legislation requiring 100% graduation rates by 2014, schools have had no choice but to examine their high school programs and evaluate those in terms of what can be done to achieve the standard set by the No Child Left Behind Act of 2001. It also necessitated the disaggregation of data by gender and ethnic groups. As a result tangible evidence of an achievement gap in some subgroups surfaced (NAEP-Reading 2009: Grade 8 National Results; NAEP-Mathematics 2009: Grade 8 National Results). By instituting freshman academies high schools are able to launch programs that have the ability to address both the graduation and achievement gap issues. This review of literature is based on building a foundation for understanding the nature of the high school transition, the importance of the ninth grade year, freshman academies, the achievement gap, and measures of achievement.

High School, Adolescents, and High School Transition

Today in America high school attendance is a given. High school is the last phase of public education required of students. However, high school's design and transition phases have become points of interest as a result of the No Child Left Behind Act's legislative requirements. It is in this phase of education that school systems are able to provide the last measure of support students may need in order to succeed beyond the K-12 setting. How a high school structures its

programs and facilitates transitions can be a way of making available the support many students need.

The High School

In 1893 the Committee of Ten including leading college presidents appointed by the National Education Association asserted that all American high-school students should receive a strong, liberal-arts education, thus for the first time requiring the "comprehensive high school" (Mirel, 2006, p. 14). John Dewey (1902) stated that public education in the United States began with elementary schools that had the purpose of preparing students for their future vocations and included the three R's. As our country changed the demand for higher levels of education provided for everyone grew. High schools became the missing piece in the educational system that linked elementary schools to college and work.

Because the Committee of Ten was composed of college presidents and other proponents of postsecondary education, it is easy to see why the early concept of high school included a focus on college preparation (Mirel, 2006). However, the Commission for the Reorganization of Secondary Education proposed that a comprehensive education included a broad array of curriculum offerings in addition to the basic college preparatory courses. The broadening of opportunities attracted more attendees because high school seemed more relevant to the general population. By 1920 many high schools in larger cities implemented curriculum tracks into their programs. Choices like college preparatory, vocational, and general education presented students with options; options to choose the path most likely to benefit the plans they had for their futures. However, it was not until the Great Depression that high school attendance experienced its largest surge. Students began entering schools as a result of them being unable to find work in the severe economic crisis. Because many of these students never considered

furthering their education until this point, they were not as prepared for the rigors of secondary education as their predecessors. According to Mirel (2006) this attendance boom shifted high schools into a place that kept students from the adult world of work instead of preparing them for it. In order to keep unprepared students in school, the curriculum changed and incorporated more less demanding classes to facilitate graduation of the less prepared students. This pattern of offering relevant yet less demanding curriculum in high schools continued until 1983 with the report entitled *A Nation at Risk*. As a result school leaders once again had to reexamine the type of curriculum offered in America's high schools. Now, years later, yet another economic crisis has driven America's students back into school. This time many Americans are returning to college because they are unable to find a place in the workforce. However, many find themselves lacking the skills necessary to succeed there despite having completed high school considering that college eligibility no longer equates college readiness (Cline et al., 2007).

> As educators struggle with the conceptual difference between college readiness vs. college eligibility, instructors at all levels are realizing that there needs to be a stronger alignment between what high schools are teaching and the skills and knowledge universities expect entering students to have mastered. (Cline et al., 2007, p. 31)

While in the past completing a high school education was considered sufficient for educating a student to compete in the job market, the same cannot be said today. The National Center for Educational Statistics (Fast Facts, 2010) reported that in the fall of 2010 19.1 million students attended colleges and universities in the United States. This number has grown by 3.8 million since 2000 (Fast Facts, 2010). With statistics like these, a demand for college readiness has been established. The high school must provide students with the tools they need to succeed in college.

Traditional High School Structure

Mirel observed that "high schools rest upon the foundation set in earlier grades" (2006, p. 21). This statement reinforces the idea that high schools will take the basic curriculum learned in grades one through eight and expand upon it to give students a solid foundation in the core subject areas. The core curriculum of mathematics, English, science, and social studies supplemented by electives was the concept of the Committee of Ten in 1893 (Mirel, 2006). According to the U.S. Department of State high schools typically boast a variety of courses including the academic and the elective (Structure of U.S. Education, 2008). Students can also expect to be offered a wide variety of athletic programs, clubs, and other extracurricular offerings (Structure of U.S. Education, 2008).

High schools are generally organized into departments (Structure of U.S. Education, 2008). This is a change from the environment to which students became accustomed to in grades one through eight. This environment was structured by age group instead of curricular area (Structure of U.S. Education, 2008). In order to increase offerings available to students, many small schools consolidated, creating many larger high schools (Structure of U.S. Education, 2008). According to Lee and Burkham (2003) the size of the school is a factor that influences student success at that school. Because school small school size positively affects achievement, this factor is sometimes credited for reduced achievement at large schools. Their research asserts that the size of the school affects teacher relationships with students and student attitudes toward learning reducing student achievement (Lee & Burkham, 2003).

High schools typically have a prescribed curriculum students must complete in order to graduate (Lee & Burkham, 2003). This curriculum rests heavily on the core curricular areas and incorporates some student choice in the form of electives (Lee & Burkham, 2003, p. 361). In

Tennessee, graduation requirements have changed as a result of the Tennessee Diploma Project, an affiliation of the American Diploma Project.

> The Volunteer State has been working to position itself as an education leader for several years under Gov. Phil Bredesen, a Democrat who has pushed for changes that revamped the state's standardized tests and academic standards as a part of its participation in the American Diploma Project. (Aarons, 2010, p. 28)

This change goes into effect for the graduating class of 2013 (Tennessee Diploma Project, n.d.). Requirements include four math credits (algebra I, algebra II, geometry, and a course beyond geometry), four English credits, three science credits (biology, chemistry or physics, and a third lab course), three social studies credits, 1.5 physical education and wellness credits, .5 personal finance credits, two foreign language credits, one fine art credit, and three elective credits for a total of 22 required for graduation (Tennessee Diploma Project, n.d., Tennessee Graduation Requirements). This change increases the requirements by two credits and presents only one path to a regular high school diploma.

Characteristics of Adolescents

Because high school students experience high levels of physical and emotional change, support to assist with transitioning through milestones in their lives and education is expected from the school. In order to do that, understanding the nature of high school students is critical. Typically, high school students range in age from 14 to 18 years. During this time period some drastic changes both mentally and physically are occurring.

For example, during adolescence people begin to develop the ability to employ reason and logic skills (Arnett, 2007). Both Plato and Aristotle held this belief and agreed that it took the entire span of adolescence (14 to 21) to completely develop this type of thinking. Piaget labeled this stage in cognitive development the formal operations stage. This means that high school students are beginning to think "logically and abstractly, formulate hypotheses and

systematically test them, and perform metacognition" (as cited in Arnett 2007, p. 156). Changes in the ability to apply different thought processes could be attributed to the changes in the brain that occur during adolescence. From age 10 to 12 there is what some scientists would term as an "exuberance" of synaptic connections forming. However, as the child continues to grow, synaptic pruning occurs. Synaptic pruning is a process that helps the brain make connections more efficiently after the period of rapid growth; this process is occurring from ages 12 to 20.

The social position of adolescents in America has changed over time. Prior to the legislation passed between 1890-1920, most adolescents entered the work force (Arnett, 2007). During this time many child labor restrictions were put into place and legislation requiring secondary school attendance was enacted in several states. Also in this era many scholars became interested in this life stage and began to study it. These factors have helped provide many present day adolescents with the opportunity to learn and grow into adults at a different pace than their predecessors.

Arnett (2007) identified five characteristics of adolescent years that seem to have universal significance. These characteristics describe adolescence as : 1.) the age of exploration, 2.) the age of instability, 3.) the age of self-focus, 4.) the age of feeling in-between, and 5.) the age of possibilities. All of these characteristics suggest that adolescence is a time of change and fluidity. Arnett (2007) also cited Harter's work that says adolescents begin to describe themselves in more abstract terms during this time; they use abstract personality characteristics to describe themselves as opposed to limiting themselves to concrete physical characteristics as younger children do. Three themes arise from research about moving into adulthood. Accepting responsibility for oneself, making independent decisions, and becoming financially independent are the three most often mentioned lessons one needs to learn during adolescence.

> For some, adolescence is a time of achievement as they successfully navigate through each developmental stage. For many others, adolescence is a turbulent time and typically associated as a period of 'storm and stress.' (Barker et al., 2004 , p. 2)

These changes in self result in changes in relationships. Many teens experience an increase in disagreements with their parents and a decrease in the closeness of relationships with their parents (Arnett, 2007). Many high school age students prefer developing relationships with their peers rather than cultivating parental relationships, but they continue to rely on their parents for support despite moving toward independence from the family unit. Adolescents begin spending more time with friends and look to them for comfort, happiness, and advice. Some research indicates that the desired increased amount of time spent with friends is perpetuated by the fact that most teens spend the majority of their time in school with these peers and less with their parents which strengthens the bond with their peers.

Most modern teens also have another bond they hold particularly dear. It is their bond to technology. Today's high school student has had a relationship with technology since birth (Palfrey & Gasser, 2008). Because of this relationship, they are considered "digital natives" (Palfrey & Gasser, 2008, p. 1). Digital natives are unique because they spend much of their time online, have friends in both real and virtual space, experience music differently, and have the ability to adapt to new information quickly.

> Nearly half of all adolescent activities are driven by technology, according to the Consumer Electronics Association. Between watching TV and interfacing on the Internet, the average American teen spends four hours per day interfacing with some sort of device. The result, according to some, is that today's adolescent culture totally revolves around technology. (Tucker, 2009, p. 16)

These characteristics describe most teens today; schools should be prepared to nurture this type of student.

According to Currie (2004) for most teens school represents the most significant adult institution aside from their family they will encounter until adulthood. Creating bonds and

support in this area is of crucial importance. A time that encompasses such dramatic physical, emotional, and social change is reasonably the time to give adolescents extra support to aid smooth transition into high school and into young adulthood.

Why is the Eighth to Ninth Grade Transition Important?

How well prepared a student is for the transition into high school may very well influence the possibility that a student will graduate from high school (Grossman & Cooney, 2009). Transitioning from eighth grade to high school is the most "difficult transition point in education" (SREB, 2002, p. 24).

> Students who manage the academic demands of the transition to high school have a high probability of graduating four years later. But those who do not- who fail to earn as many credits as they should during ninth grade- face substantially elevated risk of dropping out of high school. (Neild, 2009, p. 53)

Much of the difficulty arises from the many social, emotional, and academic factors students experience at this point in their education (Amato, 2005). This transition can be particularly difficult for students who are behind academically. In most cases high schools are different environments from middle schools and K-8 schools because they are more competitive and less personal (Mizelle & Irvan, 2000). According to Amato (2005) research indicates that schools "may be losing students academically, socially, and emotionally" during the year they transition to high school (p. 41).

A variety of new experiences await incoming high school students. Opportunities like increased freedom, athletic events, school social events, and the ability to choose classes can all be positive aspects of transition (Akos & Galassi, 2004). Because high school students have more choices about their classes and extra-curricular activities, these choices have the ability to affect a student's future (Mizelle, 2005). For example, if a student wants to take high level math classes, he or she must first make room in his or her schedule for the prerequisite courses. In the

midst of excitement and options, students also express worry over friends, grades, getting lost, bullies, and parental expectations (Akos & Galassi, 2004). In addition many students develop a negative image of themselves during this time (Mizelle & Irvan, 2000). Other fears about transition expressed by high school students include fear that their new teachers will not like them, the new assignments will be too difficult for them, and they will not find a way to fit in at their new school (Mizelle & Irvan, 2000). This anxiety may manifest itself in the form of behavior problems. According to Smith (2006) suspensions and expulsions happen more frequently in the ninth grade than in grades 10 through 12.

Despite all the worry and anxiety, there is evidence that students are excited about beginning their high school careers (Mizelle, 2005). In addition, some high school students admit that many of their worries about transition went unfounded (Mizelle, 2005). Also, the new social opportunities available to high school students may allow students who were excluded in middle school to find acceptance in high school (Smith, 2006). Conversely, students who found themselves the star athlete or most popular in middle school may lose this title as they shift into the bigger pool of students found in high school, making this transition difficult even for the seemingly well-adjusted eighth grader (Grossman & Cooney, 2009).

The anxiety that accompanies transition leads some students to experience achievement loss, drop out soon after entering high school, or fail classes resulting in delayed graduation (Akos & Galassi, 2004). An estimated 10% of students experience some difficulty transitioning into high school (Akos & Galassi, 2004). A study conducted by Akos & Galassi (2004) indicated that only 51% of parents felt their student had successfully transitioned into high school after spending 4 weeks there .

As it has been stated that students decide in the first few weeks of their ninth grade year if they will continue their education, assisting them in achieving a successful transition into ninth grade has the potential to make a significant impression on a student's education (McIntosh & White, 2006). Some students are unsure they have the ability to graduate (Hertzog & Morgan, 1999). This can be compounded by receiving lower grades than previously earned in eighth grade, especially for those who did not perform well in their middle school classes (Heller, 2003). On the other hand, ninth grade may be the time when high achieving students experience earning a grade other than an A, which could be shocking for both the student and his or her parent(s) (Smith, 2006).

> Almost all students, even those who end up graduating and entering college, experience drops in attendance in ninth grade. However, research indicates that relative to students who graduate high school, those who leave school prematurely have experienced steeper ninth-grade declines. Students who drop out typically have not been able to recover from the decline in grades they have seen in ninth grade. (Grossman & Cooney, 2009, p. 1)

Achievement loss during the transition year is usually attributed to lower levels of engagement at the high school level and feelings of displacement in the new larger, less personal environment of high school (Heller, 2003). Also, achievement loss can result in a lack of study skills (Mizelle, 2005). Because the academic demands of high school are more intense than those in middle school, students may find they do not have the study skills necessary to succeed in high school courses. Sometimes when students come to this realization, they do not know where to go for help (Mizelle, 2005). If they have not made personal connections with their new teachers, students may not be willing to ask for study skill assistance. If this problem persists, students often find themselves getting further and further behind in their classes (Mizelle, 2005).

Not making personal connections quickly with high school teachers is not uncommon. Because high school teachers tend to teach more students per day than do middle school

teachers, high school teachers comment that they have a more difficult time forming relationships with their students (Grossman & Cooney, 2009). Unfortunately, many students need the personal relationship with a teacher to ease the transition process.

If students are to experience a smooth transition into high school, the transition process must be addressed (Mizelle & Irvan, 2000). The transition process must include components for both students and their parents in order to be successful (Mizelle & Irvan, 2000).

> When parents are involved in students' transition to high school, they tend to stay involved in their child's school experiences; and when parents are involved in their child's high school experiences, students achieve more, are better adjusted, and are less likely to drop out of school. (Mizelle & Irvan 2000, p. 59)

Both of these groups will be involved in the transition, thus both may develop questions and concerns about what the process will entail. Parents and students have both similar and differing opinions about what is important for students to know before they transition into high school. Parents thought that schools should provide more high school and middle school interaction and have small group orientations (Akos & Galassi, 2004). Students expressed that high schools should send students to their middle school to speak with them about the transition (Akos & Galassi, 2004). Both agreed that programs should include extensive tours of the high school campus (Akos & Galassi, 2004). According to Akos and Galassi (2004) parents thought that helping their children develop time management skills, frequent communication with teachers, and parental encouragement were ways they could help their student(s) have a smooth transition into high school. It is also noteworthy that in order to best assist students in their transition the transition be viewed as an ongoing process not as an isolated event (Cohen & Smeardon, 2009; Morgan & Hertzog, 2001).

The Importance of Ninth Grade

For many students ninth grade marks a crucial point in their education (Legters & Kerr, 2001). Students leave the skill based curriculum of middle school or elementary school and enter the more competitive and more grade-focused world of high school (Mizelle, 2005). Because ninth grade is the onset of high school, a new set of academic expectations is put into place (Neild, 2009). It is at this point that many students decide not to continue their education (McIntosh &White, 2006). According to the South East Regional Education Board (2002), failure in the ninth grade is three to five times more likely than in another grade. Cohen and Smeardon (2009) noted that ninth graders experience more course failures, more decreased test scores, and more behavioral problems than students in other grades.

Evidence indicates that ninth grade failure dramatically decreases the likelihood that a student will graduate high school; in fact one study indicated that as many as one third of all high school dropouts were unable to pass the ninth grade (Neild, 2009).

> There are obvious short-term educational consequences for ninth graders who fall off track to graduation. At minimum, because failed courses must be retaken, the graduation rate will be deferred unless the student redoubles his efforts to earn the missing credits in time to graduate with his cohort. (Neild, 2009, p. 55)

Many students who fell behind and did not pass ninth grade went on to dropout because they became so far behind that getting back on track seemed impossible to them (Grossman & Cooney, 2009).

Earning credits to proceed to the next grade level is a concept most students do not encounter until their ninth grade year. Being successful at earning credits during the ninth grade year puts a foundation in place on which students can build. The end result of that construction being graduation. Achieving graduation is a milestone that has many rewards. Research shows that some of the benefits of being a high school graduate are better health and lower mortality rates,

higher earning potential resulting in more contributions to the community in the form of taxes, reduced likelihood of receiving public assistance, and a reduced likelihood to commit crimes or be incarcerated (Grossman & Cooney, 2009).

In an attempt to improve schools and the education students receive, schools have begun implementing more rigorous curricula (Cohen & Smeardon, 2009). However, schools are still losing so many students at the ninth grade level that these improvement efforts are not resulting in their full potential. The American Diploma Project and its adapted form, the Tennessee Diploma Project, are comprehensive reforms to increase the rigor and college readiness of students (Cohen & Smeardon 2009).

> …Graduation requirements have increased over the past two decades, intensifying course work in core content areas, aligning these courses with postsecondary institutions, and developing and implementing rigorous course curricula and assessment have become the keystone of the most recent round of state plans for high school improvement. The battle cry for high school reform has become rigor, rigor, and more rigor. (Cohen & Smeardon, 2009, p. 178)

However, if these increased requirements increase the possibility that students will leave the educational system, they may not be considered as beneficial as they seem on the surface. Cohen and Smeardon (2009) remark that the overwhelming push in high school reform is implementing more rigor; however, graduation rates are still not meeting the federal guidelines mandated in the No Child Left Behind Act of 2001 in many schools. If students are going to be expected to perform at higher standards in high school, they must be supported from the beginning of their high school careers, making ninth grade even more crucial to their success as high school students.

Unique Factors Influencing Ninth Grade Students

The move to ninth grade indicates not only the mental transition into the performance based world of high school, but for 80% of America's students it also represents a physical move to

another school (Neild, 2009). For some students this move is the first transition they have encountered in their educational career, while for others it may be the second or possibly the third. According to Alspagh (1998) the number of transitions a student experiences may have an effect on a student's likelihood of dropping out of high school. Regardless of the number of transitions a student faces, transition is inevitable. The ninth grade transition accompanies a culmination of developmental and contextual factors that influence students (Cohen & Smeardon, 2009). At the time students enter ninth grade they tend to experience several types of social changes as well as the physical changes associated with being an adolescent.

One example of a social change students experience is new freedoms. One of these freedoms is that many parents begin to allow students more freedom as they enter high school (Neild, 2009). This freedom may come in the form of parents becoming less involved with the child's education as well (Amato, 2005). This newfound freedom may not be well-timed. If a student is having trouble with the transition to high school and his or her parents have decided to allow the students more autonomy to deal with his or her problems, this may result in feelings of abandonment. An additional result of students' increased autonomy is the increase of risk-taking behaviors because parents become less involved and peers become more important (Neild, 2009). There is research showing that instances of smoking, drinking, and drug use increase between the eighth and ninth grades.

> Students with limited academic success, a history of delinquent behaviors (e.g. truancy), and sexual activity may be at greatest risk for drug abuse. To counteract these at-risk behaviors, programs need to be in place to help at-risk students, those who already use drugs, in a limited way, and those who are mired in drug abuse. (Amato, 2005, p. 65)

Another freedom is the ability to participate in a wider variety of extracurricular activities (Amato, 2005). Students may choose to participate in several athletic teams, interest-based

clubs, and academic clubs. These opportunities arise as students are being forced to become more responsible for their own learning and held more accountable for their academic performance. Students who have not mastered time-management or study skills may not be able to balance both academic demands and extracurricular demands as well, thus creating another bump in the road for incoming freshmen.

Another type of social change ninth grade students experience is a change in relationships. Students may find that some of their relationships have been disrupted (Mizelle, 2005). Friendships may be strained because of differing class schedules or diverging extracurricular interests. Cohen and Smeardon (2009) noted that unlike high schools, most middle schools have a system that allows students to follow similar paths of coursework. This path allows students a greater opportunity to develop friendship networks based on those on the similar path. However, in the larger high school setting, having classes with these friends is less of a possibility. Mizelle (2005) points out that disturbance in friendship networks may influence academic success. Some students must now determine their place in new social structures that come into existence during the transition to high school (Cohen & Smeardon, 2009). Students may experience difficulty when separating from their middle school teachers as well. Many students report fearing their high school teachers will not like them as much as their middle school teachers did (Mizelle, 2005).

Students in the ninth grade are encountering a different set of expectations as well. As Heller (2003) reports, nearly all students experience an academic decline in ninth grade, even those who typically earn high scores. One reason for this may be that this is the first time students have experienced a high-stakes learning environment (Grossman & Cooney, 2009). It is possible that a student may need to work harder to earn the same grade in high school that he or she earned in

middle school. One theory about why students must work harder to achieve in high school (and why many fall behind) is that they have not been adequately prepared for the rigors of high school while in middle school (Neild, 2009).

> Research has shown that a challenging and supportive middle school experience is crucial in helping students make a smooth transition to high school. Students understand intuitively and from experience that middle school teachers often "cut them too much slack," neither challenging them to meet high standards nor teaching them how to study on their own. (Mizelle, 2005, p. 57)

According to Mizelle (2005) ninth grade students report that high school teachers assign more homework and have higher expectations than their middle school teachers did. Student engagement is also a factor to consider in regard to the decline in academic performance (Heller, 2003). The larger more competitive environment of high school may seem less individualized to students creating an environment in which they do not engage (Heller, 2003). Teaching styles may have shifted more to lectures and discussing students' ideas rather than the types of strategies employed by their familiar middle school teachers (Grossman & Cooney, 2009).

Physical factors contribute to the uniqueness of the ninth grade situation as well. Hormonal changes associated with puberty may make the feelings of doubt about the high school transition seem more intense (Cohen & Smeardon, 2009). Children this age are still experiencing brain and neural development. These physiological changes may influence "academic competencies, problem solving, negotiation, conflict resolution, and other cognitive and social competencies" (p. 179). Problem-solving skills not only influence academic aptitude but the ability to get along with people as well; these skills also help students navigate the transition.

Freshman Academies

In light of legislation dictating graduation rate benchmarks and significant research indicating the crucial nature of the ninth grade year, many schools have sought to implement

programs to assist in supporting students in their transition to high school. Many of these support programs are types of smaller learning communities (Bernstein et al., 2008). According to Legters and Kerr (2001) small learning communities such as freshman academies have been highlighted as models that make the high school experience more personalized and learner-centered. Some types of smaller learning communities are career academies, magnet schools, house plans, school-within-a-schools, and freshmen academies (Bernstein et al., 2008). Each of these types of organizations gives students a smaller experience within a larger entity and provides additional support in some area. One commonly implemented smaller learning community is the freshman academy. Some research has indicated that participants in freshman academies had better attendance rates, earned fewer discipline referrals, earned better grades, and failed fewer courses (Fraker, 2006). However, there are also findings that indicate freshman academies have not affected these factors in some schools.

Defining Characteristics of Freshmen Academies

Freshman academies have several common characteristics and goals. As with most sound educational programs, freshman academies are grounded in educational research confirming this type of approach is viable for these students (Fraker, 2006). A widespread goal of the freshman academy model is to support freshman during their first year of high school and increase the likelihood of academic success (Thornton, 2009). Clark and Hunley (2007) noted that the goal of freshman academies is "to provide structure, a sense of belonging, and ease the transition into high school while integrating content and increasing communication between parents and teachers" (p. 41).

One important component of the freshman academy models is size. In the past, the accepted theory was that because larger schools are able to offer more courses and a wider variety of

extracurricular activities, they are better options than smaller schools (Fraker, 2006). However, it has been noted that the size of most high schools creates an impersonal feel for incoming students (Hertzog & Morgan, 1999). Legters and Kerr (2001) asserted that high schools are characteristically large and bureaucratic in nature, leaving some students feeling lost. Recently, schools have shifted the focus on what can be offered in terms of courses to how can students best be inspired to learn (Fraker, 2006). Freshman academies address that concern by helping make the larger school feel small for the ninth grade students (Thornton, 2009). A hallmark of freshman academies is a dedicated space. Some schools may accomplish this by providing an entire building for the freshman academy (Bernstein et al., 2008). Other schools, however, may dedicate a hall or wing to the academy (Clark & Hunley, 2007). Some schools have even chosen to put freshman guidance counselors, freshman administrators, and freshman lockers in the freshman academy area as well (McIntosh & White, 2006). Housing the majority of what students need in close proximity helps the larger school environment feel smaller and allows freshmen to take the majority of their classes only with other freshmen (Clark & Hunley, 2007). In this dedicated space, some schools opt to arrange classrooms in a way that suits the logical flow of students as opposed to in terms of subject taught (Bernstein et al., 2008). This also helps ninth grade students with transitions between classes as well.

The effect of structuring the freshman academy like a smaller school within the larger school involves teachers as well. Bernstein et al. (2008) report that many freshman academies use teams of teachers. Typically the teams include teachers from the four core curricular areas, math, science, social studies, and English (Bernstein et al., 2008). These teacher teams serve a common group of students, meaning the teachers teach the same students (Bernstein et al., 2008, p. 94-95). The sharing of students can facilitate better communication among teachers about

concerns they have for particular students and allow teachers to specialize in working with ninth grade age students (McIntosh & White, 2006).

> Within the team, teachers are afforded the opportunity to communicate regularly about the performance and behavior of students that they share, as well as consult with a larger group of colleagues who are grappling with similar instructional and classroom management issues. (Bernstein et al., 2008)

In addition by creating this situation teachers have the opportunity to get to know their students better, not only from classroom interactions but by being located on the same space in the school throughout the day and by communicating with the student's other teachers. It has been reported that teachers in larger schools tend to be less personal, more controlling, and require lower levels of cognitive skills than those in smaller schools, so the smaller academy setting may assist in changing the relationship teachers are able to have with their students (Barber, 2004).

Another aspect of freshman academies that influences both teachers and students is that most academies incorporate common planning time for teachers (Bernstein et al., 2008). This common planning period could be daily or weekly, but it is a characteristic most academy organizers have chosen to implement (McIntosh & White, 2006). During common planning sessions, teachers have the ability to work with someone who teaches their same subject area or with other core teachers to plan cross-curricular units for their shared group of students. In addition, this time can be used to meet with fellow teachers about student concerns, scheduling issues, and other items that might need whole group discussion (Clark & Hunley, 2007).

Flexible scheduling is another common component of freshman academies (Bernstein et al., 2008). Many high schools operate on a 4 X 4 block system allowing students to take courses for only a semester; however, for freshman academies many schools opt to adopt a modified block schedule (Clark & Hunley, 2007). On a modified block schedule the traditional blocks of time will be divided into smaller units so students can participate in a slate of courses for the

entire year. This type of schedule makes the freshman academy daily schedule more like the middle school schedule students have previously experienced. Sharing of students and flexible scheduling facilitates the implementation of cross-curricular planning and allows for flexibility in accommodating certain special activities like lengthy science labs or drama performances in English. Schools can also take advantage of the flexible scheduling and build in staff development opportunities for their teachers in this way (Bernstein et al., 2008).

Some freshman academies choose to begin their program before students even enter the program. For example, the freshman academy program may sponsor orientation programs during the summer while other students are not present (Clark & Hunley, 2007). During this orientation students might receive their schedules, tour the campus, meet their teachers, and participate in team building activities with other freshmen.

Increased parent communication is another feature of freshman academies. Fraker (2006) suggests that parent communication can come in several forms: conferences, open houses, advertised meetings, newsletters, telephone calls, and emails. Parental involvement generally reduces after a student leaves middle school (Mizelle, 2005). Many times parents find that the only situation where their involvement is needed is fundraising once a student gets to high school (Morgan & Hertzog, 2001). As a result freshman academies must actively seek parental involvement because it may not be there on its own. One way of accomplishing this is to begin to involve teachers from the freshman academy in parent communication efforts before students leave middle school. It is difficult to implement a successful program without the support of parents (Fraker, 2006).

Another characteristic of successful freshman academies is that the leadership of the school must be in support of the academy. Morgan and Hertzog (2001) posit that school endeavors are

rarely successful without the support of the administration and the teaching staff. Strong leadership and support of the freshman academy is noted as one factor that contributes to the success of the academy (Bernstein et al., 2008). Strong leadership in support of the academy also contributes to the amount of support a faculty provides the academy. Staff buy-in is strongly linked to the leadership of the academy and school as a whole and to the success of the freshman academy program (Bernstein et al., 2008). Bernstein et al. (2008) noted that there is typically more staff support for freshman academies than other types of smaller learning communities; this could be because of the overwhelming amount of research suggesting the importance of the ninth grade year to future academic success.

Despite staff buy-in strengthening the freshman academy, it may have negative effects on the school at large (Bernstein et al., 2008). Some schools have experienced divisiveness as a result of creating the school-within-a-school concept. This could occur for two different reasons. Some schools do not require all ninth grade students to participate in the freshman academy, while others do (United States Department of Education, 2008). Schools requiring 100% participation could experience divisiveness as a result of the entire freshman class being separated from the school, while those with limited participation may experience division because only a section of a class has its own academy. Another factor influencing the success of a freshman academy that comes into play for schools with limited participation in the academy is that many times the demographics of the students in the academy do not reflect the true demographics of the entire ninth grade class. For example if the freshman academy enrollment is predominately special education or minority, while the entire class is not, it may be difficult to detect the success of the academy because these groups traditionally do not perform as well as other groups.

The History of Freshman Academies as a Type of Smaller Learning Community

After considering over 15 years of research, many school officials and community members began to shift to the mantra that small schools were better both socially and academically (Metzger, 2006). Smaller learning communities were established as a response to mounting concern about large high schools (Implementation study of smaller learning communities, 2008). In addition, *A Nation at Risk*, published in 1983, shed light on the idea that smaller learning communities could make a difference for students (Lee & Friedrich, 2007). The smaller learning community program was authorized by the Elementary and Secondary Education Act (Implementation study of smaller learning communities, 2008). The concept of smaller learning communities actually began with the work of Barker and Gump in the 1960s; they described a "campus model" that included a group of students who shared a group of teachers to facilitate social bonds and improve learning (Lee & Friedrich, 2007). There are many different ways to define smaller learning communities (Metzger, 2006). According to Sparger one definition is "an individualized learning unit within a larger school setting where students are scheduled together and have a common area of the school in which to hold most or all of their classes" (as cited in Lee & Friedrich, 2007, p. 262). The creation of a smaller learning community could include building a smaller school or restructuring an existing school to allow a school-within-a-school concept with the goal of raising student achievement (Lee & Friedman, 2007; Metzger, 2006). The freshman academy model is a type of smaller learning community, and according to the United States Department of Education (2008), the freshman academy, along with career academies, is one of the most widely implemented types of smaller learning communities.

To begin the smaller learning community trend substantial funding was provided to schools across the nation (Lee & Friedrich, 2007). Between 2000 and 2004 the federal government

supplied schools with $275 million for the implementation of smaller learning communities. The Bill and Melinda Gates Foundation granted another $650 million with the same intention. This large amount of funding helped create many smaller learning communities in America's schools. However, the majority of this funding was distributed to urban schools; many rural schools did not receive any monetary support to implement the smaller learning community concept in their school (Clark & Hunley, 2007). Therefore, many rural schools have made adaptations to the concept to implement them on a "shoestring budget" (Clark & Hunley, 2007, p. 41). Also, grant money has a limited scope. If schools wish to continue the smaller learning community concept, they must eventually take over the funding themselves, which necessitates a need for changes in budgeting and planning for many schools (United States Department of Education, 2008).

Many schools experienced desirable outcomes by implementing the smaller learning community concept. According to Lee and Friedrich (2007) tangible evidence exists to suggest that smaller learning communities improve "academic achievement, academic equity, graduation rates, and safety" (p. 262). Increased feelings of safety may arise from an increased connectedness with a caring adult that the smaller learning community attempts to create (Kilby, 2006). Data also suggest that smaller learning communities can have a positive effect on the achievement of all racial subgroups as well (Lee & Friedrich, 2007). However, there are those who are skeptical about how smaller learning communities influence racial subgroups and those who assert that the current evaluations of smaller learning communities are unable to detect the significance of these programs on these groups. One urban high school that chose to implement smaller learning communities experienced an increase in reading scores, a reduction in the achievement gap, and an increased sense of community in their school (Metzger, 2006). In spite of the gains in achievement experienced by some schools, according to the United States

Department of Education (2008) there is no significant trend in achievement as measured by college entrance tests related to the implementation of smaller learning communities. These programs have been said to be helpful for creating community, providing student support, and facilitating the freshman transition (Metzger, 2006). However, those who are skeptical assert that because there are so many different ways to implement and structure a smaller learning community, it may not be possible to fully attribute success strictly to the smaller learning community concept itself, but instead the change is a result of a feature of the smaller learning community (Lee & Friedrich, 2007).

Despite agreement that small schools can be an improvement over larger ones, there is also agreement in so far as small size alone will not improve a school (Metzger, 2006). In addition to the size, there must also be factors built in to create the desired change in the school. Factors many schools seek to increase with the implementation of a smaller learning community are improved working relationships for teachers, increased personal teacher-student relationships, and greater expectations for student learning (Metzger, 2006). Although the smaller learning community movement began in urban areas, it has expanded to include schools of all types.

Smaller learning communities have been implemented in many urban areas. America's urban areas have the highest concentration of minority students, thus minority students are widely served by smaller learning communities and should be considered in their design (Lee & Friedrich, 2007). Smaller learning communities seem to have the potential to make an improvement in the achievement of minority students. Cultural evidence shows a more pronounced emphasis on extended family in some minority groups; because the smaller learning community concept seeks to create a more personal bond between the student and his or her teachers, this sense of belonging could help some minority students improve their academic

performance. Paired with other interventions, the smaller learning community concept, which includes the freshman academy, has the ability to influence achievement for a variety of types of students. For example, an increase of promotion to 10th grade has accompanied the implementation of smaller learning communities such as freshman academies (United States Department of Education, 2008). Also, there is a relationship between smaller learning communities and a decreased occurrence of school violence (United States Department of Education, 2008). Smaller learning communities appear in a variety of schools in America as a means of improving the educational experience for all students participating in the programs.

Smaller learning communities are just one method of addressing the diverse needs of all students. Providing students with support to facilitate their success while providing the course selections available in a larger school could make a difference in the achievement of students. Achievement is certainly an issue to which most schools devote considerable attention. Unfortunately, achievement levels are not consistent among all types of students. The acknowledgement of the achievement gap will help schools construct plans to address it.

The Achievement Gap

Horace Mann (1848), who is considered by many to be the father of modern education, remarked that education is the "great equalizer of the conditions of men, - the balance wheel of social machinery." Unfortunately, all students do not achieve the same level of academic success, which means Mann's observation of equality through education has not been realized. In light of the No Child Left Behind Act (2001), it is no longer enough just to educate all children; all children must achieve as well (Haycock, 2006). This legislation called for the disaggregation of data, which provided undeniable evidence that the gap in achievement is a true and persistent problem. Unfortunately, the legislation provided little funding for high schools,

and according to research conducted by the Education Trust the achievement gap is most persistent at the high school level. Galinsky (2010) states that the achievement gap surfaces before students enter school but widens as students grow. Ramirez and Carpenter (2009) posit that there is not one persistent gap that exists between groups but many gaps both between and among groups of students. As a result, one single intervention will not remedy all gaps; administrators must be prepared to layer interventions to target specific gaps in achievement. Continuing to believe that one type of intervention will "cure" the achievement gap only inhibits real progress toward decreasing it according to Ramirez and Carpenter (2009). Despite not possessing an uncontested remedy for the gap in achievement, there is clear and overwhelming research indicating a discrepancy in achievement exists between America's white students and its minority students. Discrepancy in achievement surfaces again in regard to gender as well.

Achievement and Race

Racial prejudices held by Americans have contributed to the discrimination that exists in education (Farkas, 2003). According to Lee and Friedrich (2007) one of the focuses of education in America since 1954 has been to insure racial equality in schools. The 1954 Brown vs. Board of Education decision required America's schools to acknowledge the disparity that existed between the predominately white culture represented in its schools and the minority students and their families who existed within it. Also, the minority population in the United States is growing; currently two fifths of children under 18 in America are members of minority groups (Brownstein, 2010). If America's schools can be deemed successful, they must adapt to the changing population of their students and teach them all (Jerald & Haycock, 2002).

The racial achievement gap is not a new phenomenon. It appears that since achievement began to be measured, the gap existed. From 1970 to 1980 the achievement gap between

African-American students and white students reduced by half and the gap between Latinos and whites reduced by one third (Haycock, 2001). However, this progress toward diminishing the gap ceased in the late 1980s and has begun to widen since. During the 1990s the gap widened in some areas but lessened in others. For example, the gap in mathematics achievement between African-American and white 13-year-olds reached its narrowest in 1990; and for Latino and white students its narrowest point was in 1992. However, by 1999 fewer than one fifth of African-American and one fourth of Latino students could read complicated texts that over half of white students successfully read. The National Assessment of Educational Progress displays a disparity between white students and nearly every other racial group each administration year since 1992, with the largest achievement gap present between white and African-American students (The Nation's Report Card, 2010).

Farkas (2003) uses the term the "Matthew Effects" to explain the racial achievement gap. This is a reference to Matthew 13:2, which states "the rich get richer, and the poor get poorer" (Matthew 13:2 New International Version). Farkas (2003) continues to explain that many minority children have fallen behind academically and as education is a cumulative process, they will continue to fall even farther behind as they continue their education . A 2000 study of data from the Children of the National Longitudinal Study of Youth 79 Cohort, the Infant Health and Development Project, and Early Childhood Longitudinal Study Kindergarten Cohort resulted in finding that African-American, Latino, and American Indian students enter school with lower levels of oral language skills, premathematics skills, and prereading skills than white and Asian students. Currently, nearly two thirds of African-American and Hispanic students read below basic level by fourth grade, while only one fourth of white students read at this level (Haycock, 2002). Also, in terms of math two thirds of African-American students and one half of Hispanic

students are performing below basic levels by fourth grade, while only one fifth of white students perform at the same level (Haycock, 2002). There is a gap in vocabulary development as well. Research indicates that a discrepancy in the vocabulary development of African-American and white children begins to evidence itself by 36 months of age (Farkas, 2003). In addition, it is estimated that a 5-year-old white child's vocabulary is equal to that of a 6-year-old African-American child; essentially indicating that, in terms of vocabulary, a white child enters school with approximately 1 additional year of academic skills than do African-American children. Farkas (2003) also notes that much research indicates that social class had an effect on achievement levels of minority students; many of the deficits diminished when social class improved.

This gap continues to widen as students continue through school. While an African-American child begins school 1 year behind white students in terms of vocabulary skills, he or she finishes school 4 years behind because a 17-year-old African-American's vocabulary is equal to that of a 13-year-old white student (Farkas, 2003). Considering that explicit reading skills are taught in grades one through three, and these skills are expected to be present in subsequent grades as the foundation for more advanced learning in all content areas, those students who did not adequately build the reading foundation in the early grades continue to fall behind (Farkas, 2003).

That the gap exists is not disputable. However, there are varying opinions as to why the gap both exists and persists. Ramirez and Carpenter (2009) suggest that the achievement gap is not merely related to racial or ethnic factors, but instead it is exacerbated by factors that tend to be characteristic of certain racial or ethnic groups. For example, there is a higher poverty rate for Hispanic and African-American students than for white and Asian students (Ramirez &

Carpenter, 2009). Haycock (2001) states that expectations play a key role in narrowing or widening the achievement gap. Because the United States has not adopted a set of national standards, much of what is expected of students is dependent upon teachers; research reveals that expectations of high minority and high poverty students are often not as stringent as those for white student or those of average or above income level (Haycock, 2001). If teachers did not require high level work from minority or economically disadvantaged students, they could not possibly be expected to perform well on standardized tests that are seeking evidence of mastering high level skills. Establishing high standards and implementing a rigorous curriculum for all students and working toward the attainment of the high standards is an important step toward achieving equality in education for all students (Haycock, 2001).

Achievement and Gender

Gender is another factor that is classically considered to influence achievement. While gender subgroup performance is not monitored as a means of reaching Adequate Yearly Progress (AYP), the No Child Left Behind Act (2001) requires that achievement data be disaggregated by gender as well as the various subgroups required to accomplish AYP (Chudowsky & Chudowsky, 2010). Studies of gender roles in classrooms throughout the 1970s and the 1980s painted the portrait of girls as people who faded into the background while the outgoing personalities of boys enabled them to catch the attention of teachers and be viewed as superior students (Skelton, 2010). This perception exists even though it is known that no detectable difference in intelligence exists between males and females (Chudowsky & Chudowsky, 2010). However, at present the tables seem to have turned (Skelton, 2010). In fact, some have begun to worry that boys are now being underserved by the United States educational system instead of girls (Mead, 2006).

Ninth grade is an illustration of this phenomenon because:

> …ninth grade is the "bulge" year, in which nationally there are 113 boys for every 100 girls in 2007, according to the Southern Regional Educational Board, which tracks statistics. Depending on race, ethnicity, and location, the ninth-grade bulge for boys gets even bigger: among black Americans there are 123 boys for every 100 girls… (Whitmire, 2010, para. 8)

According to Whitmire (2010) in 2007 nationally 250,000 males repeated ninth grade while only 178,000 females repeated ninth grade. Considering that ninth grade is a point at which many students dropout, it also becomes the point at which more girls than boys remain in school. Whitmire (2010) offers the reasoning that when students become academically frustrated, it is not "manly" to suffer the humiliation of falling behind and many male students give up.

This reversal has even manifested itself in a civil rights complaint filed by a Massachusetts man stating that his high school's homework and community service requirement discriminated against boys (Mead, 2006). Additionally, at present more women are present on college campuses than men, which has not always been the case. Among African-Americans, women graduate from college at twice the rate of men (Whitmire, 2010).

Even though evidence is mounting to suggest there is no achievement gap at present, the mindset of boys performing better in math while girls perform better in reading persists. Researcher have attributed biological factors and environmental factors to the gap in achievement between boys and girls (Chudowsky, 2010). This may stem from the fact that there is a difference in how well gender groups perform certain types of tasks; boys tend to perform spatial and visual tasks more efficiently, while girls excel at verbal tasks (Chudowsky & Chudowsky, 2010). This difference in performance on certain types of tasks may be the result of physical differences that exist in the brains of men and women. Andreano and Cahill (2009) explain that there are differences in the size and activity levels of the brains of men and women.

They explain that men generally have a larger brain with more gray matter, but women have a larger volume of certain brain structures. These differences may be the catalyst for the differences in ability that exist.

Traditionally girls have outperformed boys in reading, while the situation was reversed in math (Chudowsky & Chudowsky, 2010). Even though the gap in performance between boys and girls in the areas of reading and math has long been reported, one study that appeared in *Science* concluded that there is no longer a gap in achievement between the genders. The researchers analyzed data that included SAT performance and state test results, however, it is uncertain if this study focused on average scores or a particular aspect of one of the assessments. Nevertheless, attention the media gave this study has contributed to the acknowledgement that the gender achievement gap has disappeared or is currently disappearing. Also, in spite of attention that has always been given to the gender achievement gap, NAEP results show that the gender gap is far smaller than racial and economic status gaps.

The Nation's Report Card (2010) reveals that in fourth grade reading girls have been consistently outperforming boys since 1992. The achievement gap between these two groups has existed at nearly the same rate since 1992 as well. Eighth graders also exhibit the same pattern. Girls outperformed boys in terms of reading since 1992 and at approximately the same rate since then. While girls outperform boys on this reading assessment, boys performed higher in 2009 than they had since 1992, while girls showed no significant increase in progress.

In an analysis of state testing information from the 2008 testing cycle used to determine AYP, Chudowsky and Chudowsky (2010) reported the status of achievement of both boys and girls in math and reading. The study included fourth grade, eighth grade, and high school level testing data. They found that in math there was no significant difference in the performance of girls and

boys; the number of students scoring proficient tended to be similar in both males and females. This equality does not persist in reading. Girls consistently outperformed boys on the reading portion of state tests; some states exhibited a gap of 10 or more percentage points. Even though this gap is still present, the discrepancy in reading achievement between boys and girls has narrowed since 2002. However, when looking at average test score performance, which according to Chudowsky and Chudowsky (2010) are better indicators of performance than summary data, it becomes apparent that boys are not catching up to girls as quickly as they once were. Because boys do not seem to be performing worse than they did in the past, but girls seem to be performing better than they did in the past, results do not necessarily imply poor performance for boys, but they imply growth for girls (Mead, 2006). In fact, in most instances boys are scoring higher than they have scored in the past, but girls have improved at a greater rate thereby exhibiting more growth.

In spite of contradictory evidence about the achievement of boys and girls in the United States, these subgroups of students continues to present challenges in schools across our nation. In order to lay the debate to rest, every effort must be made to insure that boys and girls have equal opportunities to succeed in America's classrooms by providing both with rich curricula designed to nurture their individual strengths and bolster weaknesses. Additionally, when implementing educational interventions, being mindful of how the intervention may affect males and affect females could help schools increase achievement in both groups of students.

Measures of Achievement

There are many measures of achievement in today's school structures. For example, the NAEP provides a national picture of achievement for several grade levels. The TCAP test displays an assessment of performance on Tennessee State Standards in grades three through

eight. The SAT and ACT assessments yield information about college readiness. Grade point averages supply a portrait of how well students performed in classes required in high school. For the purposes of this study, the researcher incorporateed grade point average and ACT performance into a snapshot that measure achievement of two groups of students.

Grade Point Average

Grade point averages are common measures of academic performance (How is grade point average calculated?, 2007). "The GPA represents the average number of grade points per course credit assigned to a passing grade" (How is grade point average calculated?, 2007). The purpose of placing grade information on a four-point scale is to standardize information so that varying grade scales and course information do not interfere with the ability to assess the performance of students from different schools. Credit information is based on Carnegie units, which defines a class as one with 120 hours of instruction.

The implications of a student's grade point average may be more encompassing than simply a means of ranking students in comparison with their peers. Sewardet, Hill, Neil, Pritchett, and Wabaunsee (2008) proposed that a student's grade point average may affect many factors of a student's life. For example, they report that GPA is related to students' "personal development and positive behaviors." (Seward et al., 2008, p. 11). Grade point average may also be a factor affecting teacher expectations of students. Teacher expectations have long been thought to influence the actual performance of students; the potential relationship between GPA and teacher expectations intensifies the concern for maintaining a high grade point average. In addition, Seward et al. also assert that students with higher grade point averages in high school graduate from college more often than those who do not, behave in more socially acceptable ways, and handle unfair treatment better. Because ninth grade is such a tumultuous time for students, some

have suggested not including the ninth grade year in the calculation of high school grade point average (Whitmire, 2010).

ACT

The ACT is an exam typically taken by high school juniors and seniors prior to college enrollment. This test is an assessment of students' "general educational development and their ability to complete college level work" (America's most widely accepted college entrance exam, 2010, para. 1). The test consists of four multiple choice areas: English, mathematics, reading, and science and an optional writing test. Scores on the ACT range from 1 to 36 (Facts about the ACT, 2010). Composite scores are an average of a student's subscores on the subject area tests. Nationally the average composite ACT score for 2010 was 21.0 .

The ACT was first administered in 1959 (History of ACT, 2010). The advent of the test increased available financial aid for students and colleges desiring to bolster their enrollment. The intent of the test was to provide students information about which colleges they could attend to study their program of choice and to provide colleges with information about their incoming students. Over the years the test has changed to accommodate the changes in students and remains a useful measure of achievement.

The No Child Left Behind Act (2001) requires that all high school students are tested at least once in 10^{th} through 12^{th} grades in the areas of language arts, mathematics, and science (Can high school achievement tests serve to select college students?, 2010). As a result of this requirement, the ACT is often administered as a way of not only fulfilling a college entrance requirement but to comply with federal legislation as well. Criticism of using the tests as an evaluation of a student's college readiness is sparked by the fact that most state standards are not aligned to the standards used to develop the ACT (Can high school achievement tests serve to

select college students?, 2010). Often, these standards do not correspond to the expectation of colleges either. However, the ACT remains as an evaluation tool for both high schools and colleges to make decisions about students' college readiness.

Chapter Summary

It is evident that the ninth grade year is a pivotal point in the life of a student. The likelihood of future academic success seems to hinge on success during the ninth grade year. As a result, much attention to the ninth grade year and successful transition to the world of high school has surfaced. Freshman academies are one possible structure for supporting students during this important year. Freshman academies can make a difference for students in general as well as particular racial groups and gender groups. A method of evaluating the success of a freshman academy is to assess grade point average data as well as ACT performance for students who participated in the academy and those who did not.

CHAPTER 3

RESEARCH METHODS

The purpose of this quantitative study is to investigate a freshman academy as a variable that influenced student achievement as measured on the ACT and grade point average. This chapter details the methodology used in the study. The chapter includes the following sections: research questions and hypotheses, researcher's role, population, data collection, data analysis, validity and reliability, ethical considerations, and a chapter summary.

Research Questions and Hypotheses

The following research questions and hypotheses guided the completion of the research. According to Green and Salkind (2008) a one-way analysis of variance is appropriate when each group has scores on two variables and a dependent variable. As a result, a *t* test will be used to evaluate the null hypothesis of each research question. A *t* test model will compare those who participated in the freshman academy (Class of 2010) to those who did not (Class of 2009). Descriptive statistics assisted in exploring the relationship of the two variables.

Research Question #1: Is there a significant difference in the achievement of students who participated in the freshman academy and the achievement of students who did not participate in the freshman academy at an East Tennessee high school as determined by

- The ACT composite score?
- The final grade point average?

To answer this question, an independent sample *t* test was used. The null hypothesis is as follows:

$Ho1_1$: There is no significant difference in the achievement in terms of grade point average of students who participated in the freshman academy and students who did not.

$Ho1_2$: There is no significant difference in the achievement in terms of ACT composite score of students who participated in the freshman academy and students who did not.

Research Question #2: Is there a significant difference in the achievement of male students who participated in the freshman academy and the achievement of male students who did not participate in the freshman academy at an East Tennessee high school as determined by the final grade point average?

To answer this question, an independent sample *t* test was used. The null hypothesis is as follows:

Ho2: There is no significant difference in the achievement of males who participated in the freshman academy and males who did not.

Research Question #3: Is there a significant difference in the achievement of female students who participated in the freshman academy and the achievement of female students who did not participate in the freshman academy at an East Tennessee high school as determined by the final grade point average?

To answer this question, an independent sample *t* test was used. The null hypothesis is as follows:

Ho3: There is no significant difference in the achievement of females who participated in the freshman academy and females who did not.

Research Question #4: Is there a significant difference in the achievement of white students who participated in the freshman academy and the achievement of White students who did not participate in the freshman academy at an East Tennessee high school as determined by the final grade point average?

To answer this question, an independent sample *t* test was used. The null hypothesis is as follows:

Ho4: There is no significant difference in the achievement of white students who participated in the freshman academy and of white students who did not.

Research Question #5: Is there a significant difference in the achievement of African-American students who participated in the freshman academy and the achievement of African-American students did not participate in the freshman academy at an East Tennessee high school as determined by the final grade point average?

To answer this question, an independent sample *t* test was used. The null hypothesis is as follows:

Ho5: There is no significant difference in the achievement of African-American students who participated in the freshman academy and those who did not.

Research Question #6: Is there a significant difference in the achievement of African-American students participating in the freshman academy and the achievement of white students participating in the freshman academy at an East Tennessee high school as determined by the final grade point average?

To answer this question, an independent sample *t* test was used. The null hypothesis is as follows:

Ho6: There is no significant difference in achievement between the African-American students who participated in the freshman academy and white students who participated in the freshman academy.

Researcher's Role

The researcher's role in this study was to analyze documents from the population including grade point average data and ACT composite score data. The researcher used demographic information to disaggregate the data into male groups, and female groups, and racial subgroups in order to make the comparisons listed in the research questions.

Population

The population of the study included members of the graduating classes of 2009 and 2010. The class of 2009 participated in the traditional high school organization. The class of 2010 participated in the freshman academy model. The class of 2009 included 207 students. Of these students 110 were male and 97 were female. One hundred eighty-nine of these students were white and 18 were African-American. The class of 2010 included 209 students. Of these students 112 were male and 97 were female. White students comprised 202 of the total student population and 7 students were African-American.

Design

Data were analyzed from the records of members of the graduating classes of 2009 and 2010 from one East Tennessee high school. The researcher proposed to contribute information about the effects of the school's freshman academy on student achievement as defined by grade point average and ACT scores.

Data Collection Methods

The East Tennessee State Institutional Review Board granted the researcher permission to conduct the research before the researcher collects data by means of an exemption. In addition, the researcher secured permission from the director of schools to obtain access to demographic data, grade point average, and ACT information. All necessary ACT

information was available in the Profile Report provided to school systems by the ACT Corporation. The researcher used the Profile Reports for 2009 and 2010. The school system uses Power School to maintain student records. Grade point average information was obtained from Power School. The high school registrar provided the researcher with these data. Once data were released to the researcher, the researcher maintained them on a personal computer and analyzed them with Version 17 of the Statistical Package for the Social Sciences (SPSS) computer software program.

Records were collected for all students who graduated in 2009 and 2010. Because academic information is personal, individual student data were not used in the study. The high school registrar provided the researcher with grade point average data labeled by gender and race. The ACT profile report provided a list of scores earned by students in each of the classes. Neither of these resources identified students by name or identification number.

The researcher analyzed students' achievement based on their GPA and ACT score. The independent variable is the participation in freshman academy, which has two levels: (1) students who participated in the freshman academy; (2) students who did not participate in the freshman academy.

There were two dependent variables in the study. The first dependent variable was the ACT composite score. The potential range for an ACT composite score is 1 to 36. The national average composite score in 2009 was 21.1; the Tennessee average was 20.7 (ACT scores by state: Graduating class 2009, 2010, Tennessee Department of Education, 2009). The second is grade point average. The range for grade point averages is zero to four, with students who are enrolled in Advanced Placement classes having the potential to earn extra quality points for those classes if the grade earned by the student is C or greater. For regular

high school classes, a value of zero to four is assigned to grades F to A. Advanced Placement courses assign five points to the grade of A, four points to the grade of B, and three points to the grade of C.

Data were analyzed and conclusions based upon the student's last ACT test date and final GPA. This high school requires seniors to take the ACT as an exit exam. These data represented each student's performance on a college readiness exam. However, because the test is administered to each student regardless of his or her postsecondary plans, some students may not take the test as seriously as others. As a result the average score will be representative of students who put forth varying levels of effort. Each student's GPA is calculated and ranked as well.

The ACT is a national college entrance and admission test. The test includes four multiple choice sections in the areas of English, math, reading, and science. There is a writing portion that is not included in the calculation of the student's composite score. Students must respond to the 75 questions on the English test within 45 minutes, the 60 questions on the math test within 60 minutes, the 40 questions on the reading test within 35 minutes, and the 40 questions on the science test within 35 minutes. The ACT is a curriculum based test based on the curricula taught in high schools (Facts about the ACT, 2010).

The ACT organization arrives at a student's composite score by using a prescribed process. The process is as follows: the number of questions answered correctly is counted; the number correct is the raw score. The raw score is converted to a scale score; test takers earn a scale score for each subtest. Subtest scale scores are averaged to yield the composite score (How ACT figures multiple-choice test scores and composite score, 2010).

Schools arrive at grade values in different ways. As a result, a process of arriving at a standardized value for grade point average was required. Therefore the zero to four scale is used to calculate grade point averages (How is grade point average calculated?, 2007). The grade point average at this high school is based on the school system's grading scale. The grading scale has three separate ranges depending upon the type of class. For regular high school courses, the grading scale is A: 100-93, B: 92-85, C: 84-75, D: 74-70, F: 69-0. For honors and pre-Advanced Placement courses, the grading scale is A: 100-90, B: 89-82, C: 81-72, D: 71-67, F: 66-0. For Advanced Placement courses, the grading scale is A: 100-90, B: 89-80, C: 79-70, D: 69-65, F: 64-0 (Academic planning handbook, 2009).

Data Analysis

This study used quantitative methodology to determine if participation in the freshman academy at one East Tennessee high school has an effect on achievement at that same high school. The GPA and ACT composite scores from the class of 2009 and 2010 were used to make comparisons between the two classes, within male and female groups, and racial subgroups who participated in the freshman academy and those who did not.

Descriptive statistics were used to provide the researcher with facts about the population. Beyond descriptive statistics, the researcher employed inferential statistics to confirm a relationship existing between freshman academy participation and increased achievement data. The inferential statistics included a *t* test to address each of the research questions. All statistical analysis used an alpha level of 0.05 to confirm statistical difference. The effect size was calculated and reported.

Validity and Reliability

In an attempt to increase the validity and reliability of the study, the researcher has chosen standardized measures of achievement: GPA and ACT scores. Both of these measures of achievement are calculated according to standardized processes, as documented earlier in this chapter.

The researcher used an independent sample *t* test to address the research questions. A *t* test is the appropriate test because the researcher seeks to compare the mean grade point average or ACT composite score of one group of students to the mean grade point average or ACT composite score of another group of students. Green and Salkind (2008) explain that an independent -sample *t* test can be employed to determine difference between the means of two independent groups. The test variable for the *t* test is the grade point average or the ACT composite score. The grouping variable is the gender, race, or participation of the student. The researcher compared means of student achievement to the dependent variable of participation in the academy or traditional high school program. Also, the researcher used SPSS computer software to calculate statistical data to improve accuracy in calculation.

Ethical Considerations

The Family Educational Rights and Privacy Act, as amended (1974) guarantees students and their parents the right to expect privacy in regard to educational records. As a result, the researcher took precautions to preserve the confidentiality of all data being used in the study. GPA information for the two classes of students were obtained labeled by gender and race only. The ACT report provided subgroup information about each of the classes. The researcher did not access individual ACT scores.

Chapter Summary

Chapter 3 explains the research questions and hypotheses, researcher's role, population, data collection, data analysis, validity and reliability, ethical considerations, and a chapter summary. The statistical tests that evaluated the research questions and null hypothesis are within this chapter. Detailed information about the measures of achievement is included in the chapter as well. Chapter 4 explains the results of the statistical tests.

CHAPTER 4

DATA ANALYSIS

Introduction

A successful ninth grade year has been called a link to high school graduation (Legters & Kerr, 2001). It has even been stated that students decide in the first few weeks of their freshman year whether or not they will continue their high school education (McIntosh & White, 2006). As Tennessee schools struggle to meet the federally mandated 100% graduation rate requirement set forth by the No Child Left Behind Act (2001) and by increasingly stringent academic requirements set by the Tennessee Diploma project, increasing attention has been given to the ninth grade year. As a means of strengthening the ninth grade year many schools have chosen to implement freshman academies. Freshman academies are types of smaller learning communities (Bernstein et al., 2008). The intent of the freshman academy model is to provide support to students during the transition into high school. Support systems include core groups of teachers, dedicated space, and increased communication between home and school (Bernstein et al., 2008; Clark & Hunley, 2007). The East Tennessee high school investigated in this study is no exception to the vast number of schools attempting to meet the 100% graduation rate requirement and student achievement.

The study's population was comprised of the students of the graduating classes of 2009 and 2010. The graduating class of 2010 was the first to participate in the freshman academy at this high school. The 2009 class, who completed the traditional high school structured freshman year, provides the control group. Including both classes, 416 students' ACT composite scores and grade point averages were analyzed. Of these students, the majority, 84% (350) were white

and 7% (29) were African American. Also, 54% (224) were male, and 46% (192) were female. Table 1 shows the demographic profile of the population.

Table 1

Demographics of Population

	Male		Female		White		African American		Other		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
2009	112	54	95	46	164	79	15	7	28	14	207	100
2010	112	54	97	46	185	89	14	7	10	5	209	100

Analysis of Research Questions

The following research questions and hypotheses served as a guide for completing the research. The researcher used independent-samples *t* tests to evaluate each null hypothesis.

Research Question #1

Is there a significant difference in the achievement of students who participated in the freshman academy and the achievement of students who did not participate in the freshman academy at one East Tennessee high school in terms of grade point average and ACT composite score?

Research Question #1- GPA

An independent-samples *t* test was used to determine if there was a significant relationship between the achievement of students who participated in the freshman academy and those who did not.

$Ho1_1$: There is no significant difference in the achievement in terms of grade point average of students who participated in the freshman academy and students who did not.

An independent-samples *t* test was used to determine if there was a significant difference in the grade point averages of the 416 students who were in the two classes selected. The results indicated that the mean traditional high school structure GPA ($M = 2.86$, $SD = .78$) was not found to be significantly different from the GPA of students who participated in the freshman academy ($M = 2.99$, $SD = .64$), $t(414) = 1.748$, $p = .081$, ns. The 95% confidence interval for the difference in the means was -.269 and .016. As a result of the independent-samples *t* test, the null hypotheses must be retained. Therefore, there is not a significant difference in grade point averages of students who participated in the freshman academy and those who did not. Table 2 details descriptive statistics for grade point averages of the two classes.

Table 2

Descriptive Statistics for Grade Point Averages

Type of Freshman Year	*N*	*M*	*SD*
Traditional Structure	207	2.86	0.78
Freshman Academy	209	2.99	0.69

Research Question #1-ACT

Is there a significant difference in the achievement of students who participated in the freshman academy and the achievement of students who did not participate in the freshman academy at one East Tennessee high school in terms of ACT composite score?

An independent-samples *t* test was used to determine if there was a significant relationship between the achievement of students who participated in the freshman academy and those who did not.

$Ho1_2$: There is no significant difference in the achievement in terms of ACT composite score of students who participated in the freshman academy and students who did not.

An independent-samples *t* test was used to determine if there was a significant difference in the grade point averages of the 416 students who were in the two classes selected. The results indicated that the mean traditional high school structure ACT ($M = 22.81$, $SD = 4.59$) was found to be statistically nonsignificantly lower than the GPA of students who participated in the freshman academy ($M = 22.02$, $SD = 4.54$, $t(334) = 1.579$, $p = .115$, ns. The 95% confidence interval for the difference in means was -.193 and 1.769. As a result of the independent-samples *t* test, the null hypothesis is not rejected. Therefore there is not a significant difference of ACT composite scores of students who participated in the freshman academy and those who did not. Table 3 shows the descriptive statistics for ACT composite scores of the two classes.

Table 3

Descriptive Statistics for ACT Composite Scores

Type of Freshman Year	*N*	*M*	*SD*
Traditional Structure	207	22.81	4.59
Freshman Academy	209	22.02	4.54

Research Question #2

Is there a significant difference in the achievement of males as measured by GPA who participated in the freshman academy and the achievement of males who did not participate in the freshman academy at one East Tennessee high school*?*

An independent-samples *t* test was used to determine if there was a difference in the grade point averages of males who participated in the freshman academy and those who did not.

$Ho2_1$: There is no significant difference in the achievement of males as measured by GPA who participated in the freshman academy and males who did not.

An independent-samples *t* test was used to analyze the grade point averages of the 224 males who were in the two classes selected. The results indicated that the mean for males who participated in the traditional high school structure GPA (M = 2.75, SD = .832) was found to be statistically significantly less than the GPA of males who participated in the freshman academy (M = 2.96, SD = .708), $t(222) = 2.085$, p=.038. The 95% confidence interval for the difference in the means was -.215 and .103. As a result of the independent-samples *t* test, the null hypothesis was rejected. Therefore there is a significant difference in the GPAs of males who participated in the freshman academy and those who did not. Table 4 displays the descriptive statistics for males from both classes.

Table 4

Descriptive Statistics for Males

Type of Freshman Year	*N*	*M*	*SD*
Traditional Structure	112	2.75	.832
Freshman Academy	112	2.96	.708

As a *post hoc* test, the researcher also compared the grade point averages of African American males who participated in the freshman academy to white males who also participated in the freshman academy.

An independent-samples *t* test was used to determine if there was a difference in the grade point averages of African American males who participated in the freshman academy and white males who participated in the freshman academy.

$Ho2_2$: There is no significant difference in the achievement of African American males who participated in the freshman academy and white males who participated in the freshman academy.

An independent-samples *t* test was used to analyze the scores of the 106 males who were African American or white and participated in the freshman academy. The results indicated that the mean African American male student GPA (M = 2.25, SD = .342) was found to be statistically significantly lower than the GPA of white male students who participated in the freshman academy (M = 3.04, SD = .668), $t(104) = 2.33$, p=.022. The 95% confidence interval for the difference in the means was -1.453 and -.118. As a result of the independent-samples *t* test, the null hypothesis should be rejected. However, due to the discrepancy in sample size, classic statistics do not allow the researcher to reject the null hypothesis. Table 5 shows the descriptive statistics for African American and white males.

Table 5

Descriptive Statistics for Males

Race of Student	*N*	*M*	*SD*
African American	4	2.25	.342
White	102	3.04	.668

Research Question #3

Is there a significant difference in the achievement of female students who participated in the freshman academy and the achievement of female students who did not participate in the freshman academy at one East Tennessee high school?

An independent-samples *t* test was used to determine if there was a significant relationship between female students who participated in the freshman academy and those who did not.

$Ho3_1$: There is no significant difference in the achievement of females as measured by GPA who participated in the freshman academy and females who did not.

An independent-samples *t* test was used to analyze the scores of the 192 females who were in the two classes selected. The results indicated that the mean for females who participated in the traditional high school structure GPA (M = 2.99, SD = .701) was found not to be significantly different from the GPA of students who participated in the freshman academy (M = 3.01, SD = .681), $t(190) = .219$, p=.827, ns. The 95% confidence interval for the difference in the means was -.022 and .100. As a result of the independent-samples *t* test, the null hypothesis was not rejected. Therefore, there is not a significant difference in the GPA of female students who participated in the freshman academy and those who did not. Table 6 explains the descriptive statistics for females in both classes.

Table 6

Descriptive Statistics for Females

Type of Freshman Year	*N*	*M*	*SD*
Traditional Structure	95	2.99	.701
Freshman Academy	97	3.01	.681

As a *post hoc* test, the researcher also compared the grade point averages of African American females who participated in the freshman academy to white females who also participated in the freshman academy.

An independent-samples *t* test was used to determine if there was a significant difference in the grade point averages of African American females who participated in the freshman academy and white females who participated in the freshman academy.

$Ho3_2$: There is no significant difference in the achievement of African American females who participated in the freshman academy and white females who participated in the freshman academy.

An independent-samples *t* test was used to analyze the scores of the 97 females who were African American or white and participated in the freshman academy. The results indicated that the mean African American female student GPA ($M = 2.59$, $SD = .734$) was found to be statistically significantly lower than the GPA of white female students who participated in the freshman academy ($M = 3.059$, $SD = .662$), $t(91) = 2.093$, $p=.039$. The 95% confidence interval for the difference in the means was -.914 and -.024. As a result of the independent-samples *t* test, the null hypothesis was rejected. Therefore, there is a significant difference in the GPAs of white female students who participated in the freshman academy and African American female students who participated. Table 7 shows the descriptive statistics for African American and white females

Table 7

Descriptive Statistics for Females

Race of Student	*N*	*M*	*SD*
African American	10	2.59	.736
White	83	3.05	.662

Research Question #4

Is there a significant difference in the achievement as measured by GPA of white students who participated in the freshman academy and the achievement of white students who did not participate in the freshman academy at one East Tennessee high school?

An independent-samples *t* test was used to determine if there was a significant relationship between the white students who participated in the freshman academy and those who did not.

Ho4: There is no significant difference in the achievement as measured by GPA of white students who participated in the freshman academy and of white students who did not.

An independent-samples *t* test was used to analyze the scores of the 349 white students who were in the two classes selected. The results indicated that the mean for white students who participated in the traditional high school structure GPA ($M = 2.92$, $SD = .764$) was found to be statistically nonsignificantly different from the GPA of students who participated in the freshman academy ($M = 3.05$, $SD = .663$), $t(347) = 1.703$, $p = .089$, ns. The 95% confidence interval for the difference in the means was -.280 and .020. As a result of the independent samples *t* test, the null hypothesis was not rejected. Therefore, there is no significant difference in the GPAs of

white students who participated in the freshman academy and those who did not. Table 8 displays descriptive statistics for white students in both classes.

Table 8

Descriptive Statistics for White Students

Type of Freshman Year	*N*	*M*	*SD*
Traditional Structure	164	2.92	7.64
Freshman Academy	202	3.05	.663

Research Question #5

Is there a significant difference in the achievement as measured by GPA of African American students who participated in the freshman academy and the achievement of African American students who did not participate in the freshman academy at one East Tennessee high school?

An independent-sample *t* test was used to determine if there was a significant relationship between African American students who participated in the freshman academy and those who did not.

Ho5: There is no significant difference in the achievement as measured by GPA of African American students who participated in the freshman academy and those who did not.

An independent-sample *t* test was used to analyze the scores of the 29 African American who were in the two classes selected. The results indicated that the mean for African American students who participated in the traditional high school structure GPA ($M = 2.51$, $SD = .76$) was found to be statistically nonsignificantly different from the GPA of students who participated in the freshman academy ($M = 2.49$, $SD = .65$), $t(27) = .052$, $p = .959$, ns. The 95% confidence interval for the difference in the means was -.526 and .553. As a result of the independent

samples *t* test, the null hypothesis was not rejected. However, given the size of the populations, this test was inconclusive. Table 9 shows descriptive statistics for African American students.

Table 9

Descriptive Statistics for African American Students

Type of Freshman Year	*N*	*M*	*SD*
Traditional Structure	15	2.51	.755
Freshman Academy	14	2.49	.653

Research Question #6

Is there a significant difference in the achievement as measured by GPA of African American students participating in the freshman academy and the achievement of white students participating in the freshman academy at one East Tennessee high school?

An independent-sample *t* test was used was used to determine if there was a significant relationship between African American students and white students who attended the freshman academy.

Ho6: There is no significant difference in achievement as measured by GPA between the African American students who participated in the freshman academy and white students who participated in the freshman academy.

An independent-samples *t* test was used to analyze the scores of the 199 students who were African American or white and participated in the freshman academy. The results indicated that the mean African American student GPA ($M = 2.49$, $SD = .653$) was found to be statistically significantly different from the GPA of white students who participated in the freshman academy ($M = 3.05$, $SD = .663$), $t(197) = 3.01$, $p=.003$. The 95% confidence interval for the difference in

the means was -.553 and .184. As a result of the independent samples *t* test, the null hypothesis was rejected. However, classic statistics require sample sizes that are more consistent in size. Due to the discrepancy in the sizes of the population, the researcher cannot definitively reject the null hypothesis. Table 10 shows descriptive statistics for African American and white students who participated in the freshman academy.

Table 10

Descriptive Statistics for African American and White Students

Race of Student	*N*	*M*	*SD*
African American	14	2.49	.653
White	185	3.05	.663

Chapter Summary

This chapter contained the statistical results of the analyzed data. Chapter 5 details a summation and interpretation of the findings of each research question and the possible implications for current and future educational practices. Chapter 5 also provides recommendations for continued research related to freshman academies.

CHAPTER 5

FINDINGS, CONCLUSIONS, LIMITATIONS, AND RECOMMENDATIONS

Introduction

The purpose of this study was to compare the achievement of students who participated in a freshman academy with students who participated in a traditional ninth grade curriculum. The researcher compared these students by class and by gender subgroup. Also the researcher compared the achievement of white students who participated in the academy to African American students who participated in the academy. The analysis focused on achievement data generated from ACT test scores and grade point averages. A summary of the findings, conclusions, and implications of the study and recommendations for future research are detailed in this chapter.

Summary of the Findings

Most research focusing on the freshman year and the transition from eighth to ninth grade expresses a need for support at this point in a student's educational career. Tremendous emphasis has been placed on the ninth grade in the current research that links success in the ninth grade to the successful completion of high school as a whole (Neild, 2009). This emphasis has resulted in many schools implementing freshman academies as a means of supporting students to not only graduate at higher rates but also to bolster the achievement of those students.

The findings of this study, however in most cases, did not find evidence to support that the freshman academy program at the study site increased achievement. The current research compared subgroups of students who participated in the freshman academy to those who participated in the traditional curriculum as well as comparisons of subgroups who both participated in the freshman academy. The analysis revealed significant differences in the achievement of two groups the researcher compared.

Conclusions

The statistical analyses of this study focused on six research questions. In question 1, the independent variable was participation in freshman academy or participation in the traditional curriculum; the dependent variables were the ACT scores and grade point averages of the students. Questions 2 through 5 investigated the relationship between grade point average (the dependent variable) and participation in the freshman academy (the independent variable). For question 6, the independent variable was the race of the student, while the dependent variable was and grade point average.

Research Question #1

Is there a significant difference in the achievement of students who participated in the freshman academy and the achievement of students who did not participate in the freshman academy at one East Tennessee high school in terms of grade point average and ACT composite score?

Two independent sample *t* tests analyzed the data for this question. The first investigated the relationship between GPA and participation in the freshman academy. This test indicated there was not a significant difference in the grade point average of students who participated in the freshman academy and those who did not. The mean GPA was 2.86 for students who did not participate in the academy and 2.99 for students who participated in the academy, and the standard deviations were .782 for students who did not participate in the academy and .694 for students who participated in the freshman academy.

The second *t* test examined the relationship between ACT composite scores and participation in the freshman academy. The test indicated there was not a significant difference in the ACT composite scores of students who participated in the freshman academy and those

who did not. The mean ACT composite scores were 22.81 for students who did not participate in the freshman academy and 22.02 for students who did participate. The standard deviations were 4.588 for students who did not participate in the freshman academy and 4.540 for those who did participate.

The findings of this study are not consistent with research indicating that freshman academies result in higher achievement. Fraker (2006) detailed a freshman academy that resulted in higher achievement levels for students; this was not the case at this study site. However, Moonsung and Friedrich (2007) note that smaller learning communities may not have the same result as a small school itself. Because the study site was relatively a small school itself, perhaps the smaller learning community of the freshman academy could not influence achievement as much as such a program in a larger school setting. Exactly what constitutes a smaller learning community successful is unknown; strategies employed, curricular structure, and other factors influence the success of smaller learning communities in addition to the size factor (Moonsung & Friedrich, 2007).

Research Question #2

Is there a significant difference in the achievement as measured by GPA of male students who participated in the freshman academy and the achievement of male students who did not participate in the freshman academy at one East Tennessee high school?

The independent samples *t* test indicated that there was a significant difference in the grade point averages of male students who participated in the freshman academy and those who did not. The mean grade point average for male students was 2.75 for those who did not participate in the freshman academy and 2.96 for those who did participate in the freshman academy. The

standard deviations were .832 for those who did not participate and .701 for those who did participate in the academy.

As a *post hoc* test, the researcher compared African American male students who participated in the freshman academy to white male students who participated also participated in the freshman academy. The mean grade point average for African American male students was 2.25, while the mean grade point average for white male students was 3.04. The standard deviations were from .341 for African American males and .668 for white males. This independent samples *t* test also indicated a significant difference in grade point averages as well. The *post hoc* test consisted of a comparison of 102 white students to four African American male students. Because of the discrepancy in sample size, this test is not as strong as the original test; however, it does provide an additional point of comparison.

The findings of this study are consistent with literature that states that males continue to perform well in school, in fact at nearly the same levels as their female classmates. Chudowsky and Chudowsky (2010) note that there are slight variations in the achievement of boys and girls. For example, in some academic areas boys made less progress than girls; however, the levels of achievement were not significantly different. Because Stillwell (2010) on behalf of the United States Department of Education reported a higher dropout rate for males than for females, an intervention resulting in a higher level of achievement for males could be a way of strengthening the high school experience for male students.

Research Question #3:

Is there a significant difference in the achievement as measured by GPA for female students who participated in the freshman academy and the achievement of female students who did not participate in the freshman academy at one East Tennessee high school?

The independent samples *t* test indicated that there was not a significant difference in the grade point averages of female students who participated in the freshman academy and those who did not. The mean grade point average for female students was 2.99 for those who did not participate in the freshman and 3.01 for female students who did participate in the academy. The standard deviations were.700 for females who did not participate and .681 for females who did participate in the freshman academy.

As a *post hoc* test, the researcher compared African American female students who participated in the freshman academy to white female students who participated also participated in the freshman academy. This independent samples *t* test revealed a significant difference in the grade point averages of African American and white female students. The mean grade point average was 2.59 for African American females and 3.06 for white females. The standard deviations were .736 for African American females and .661 for white females. The *post hoc* test compared 83 white students to 10 African American female students. Because of the discrepancy in sample size, this test is not as strong as the original test; however, it does provide an additional point of comparison.

The findings of this study are consistent with the literature that females are achieving at a consistent rate and experiencing improvement in some areas. Chudowsky and Chudowsky (2010) stated that female students out achieved their male counterparts in reading at the elementary, middle, and high school levels. Cohen and Blanc (1996) suggested that in order to make a difference in the achievement of girls mentoring programs and gender equality measures should be put into place.

Research Question #4:

Is there a significant difference in the achievement as measured by GPA of white students who participated in the freshman academy and the achievement of white students who did not participate in the freshman academy at one East Tennessee high school?

The independent samples *t* test suggested there is not a significant difference in the grade point averages of white students who participated in the freshman academy and those who did not. The mean grade point average was 2.91 for white nonparticipants and 3.05 for white participants. The standard deviations were .734 for white nonparticipants and .663 for white participants.

The findings of this study are consistent with the body of research indicating that white students experience success in America's schools. The advent of the freshman academy did not seem to affect the achievement of these students.

Research Question #5:

Is there a significant difference in the achievement of African American students who participated in the freshman academy and the achievement of African American students did not participate in the freshman academy at one East Tennessee high school?

The independent samples *t* test revealed that there was no significant difference in the grade point averages of African American students who participated in the freshman academy and those who did not. The mean grade point averages were 2.51 for African American students who participated in the traditional high school structure and 2.49 for African American students who participated in the freshman academy. The standard deviations were .756 for African American students who did not participate in the freshman academy and .653 for African American students who did.

The findings of this study indicated that participating in a smaller learning community did not result in an improvement in the level of achievement for these students. Kea (2009) suggests that African American students are more likely to improve academically when parent involvement, community involvement, and mentoring opportunities are available.

Research Question #6:

Is there a significant difference in the achievement of African American students participating in the freshman academy and the achievement of white students participating in the freshman academy at one East Tennessee high school?

The independent samples *t* test suggested that there was a significant difference in the grade point averages of African American students and white students who participated in the freshman academy. The mean grade point averages were 2.49 for African American students who participated in the freshman academy and 3.05 for white students who participated in the freshman academy. The standard deviations were .654 for African American students and .663 for white students. This test compared 14 African American students to 185 white students. Because of the inequality in population sizes, conventions of classic statistics do not allow this test to make a strong stance; however, the test does provide a point of comparison.

The findings of this study are consistent with the body of research that exists on the achievement gap between white and African American students. Moonsung and Friedrich (2007) note that NAEP data suggest that the average African American 12th grade student is on the same educational level as the average white 8th grade student. This achievement gap is further illustrated by the discrepancy in the number of high school graduates by race; one study by the National Center for Educational Statistics noted a difference of 5% in the number of white graduates and African American graduates (Moonsung & Friedrich, 2007). Research conducted

by Moonsung and Friedrich (2007) stated that schools implementing smaller learning communities like freshman academies still experienced the achievement gap indicative of schools in general.

Recommendations for Practice

The results of this study did not support the theory that freshman academies increase the achievement of students who participate in them. However, it did yield similar results to research on the gap in the academic achievement of white and minority students. In addition, the study showed that males who participated in this particular freshman academy out performed males who did not. As schools continue to try to strengthen the freshman year, interventions specific to the school should be considered as well as standard practices for freshman academies. For example, instituting a dedicated space, common planning, and teams of teachers to teach the freshman core classes are hallmarks of the freshman academy model (Bernstein et al., 2008, Clark, & Hunley, 2007, Thornton, 2009,). However, schools may also need to consider implementing interventions to support the unique population at that particular school.

Recommendations Regarding All Students

Because this particular high school is a relatively high achieving school in terms of ACT performance compared with others in the state, this school and others with similar populations and performance records could benefit from including plans to increase the rigor of the freshman year in the plans for the freshman academy. To further boost achievement the school may need to consider including more advanced level courses in its freshman academy program to create a more challenging environment for these students to work and learn. Many schools include Advanced Placement courses. Typically, these courses are available to 11th and 12th graders. However, to increase the rigor and achievement of students beginning these types of courses

earlier could be of benefit. For instance, honors level courses that include more demanding course work should be available in a variety of subjects. Also, students should have access to these demanding courses as early as ninth grade, if not eighth grade.

Another method of providing accelerated programs for incoming freshman might be to institute a summer program that would provide an opportunity for capable students to obtain high school credits before officially beginning their high school career. These classes could provide the opportunity to not only indoctrinate these students into the physical space of the high school but could provide some academic benefit as well. One possible benefit is the ability to make space for higher level courses in the student's future. Another benefit would be that these students become acquainted with the demands of high school courses in a smaller dose by taking only one or two summer courses. While many high schools have summer school programs and even summer programs that focus on the needs of incoming ninth graders, these programs often focus on students who are behind academically. By broadening this focus to also include those who would benefit from academic acceleration, the school may improve the achievement of this group of students as well.

In addition, schools may choose to implement tutoring programs to support academic achievement as a part of the freshman academy as well. Tutoring programs should target freshman in specific ways considering freshman bring unique academic needs to their learning situations. Because incoming freshman are quite different developmentally from students moving into 10^{th} through 12^{th} grades, tutoring programs should be mindful of how these students could best be supported. In keeping with the freshman academy model, one recommendation would be to staff the tutoring program with teachers who are currently teaching in the freshman academy. If this is not possible, the tutoring program could include a portion of the staff

dedicated to ninth graders. This would allow the tutors to get to know the students they would be assisting. Additionally, this enables the ninth graders to establish rapport with the tutors. Creating these additional relationships in the academic setting could assist the students in achieving success.

Differentiated instruction is also a way to improve the achievement of students. Differentiated instruction allows students to make choices in their learning thereby requiring them to take ownership of their learning as well (Tomlinson, 1999). Using differentiated instruction to increase achievement might require teachers to create options for students that would allow for those who need extra support options for mastering the standard, while also providing options for students who need the acceleration option to master the standard in a more challenging way. Some strategies for using differentiated instruction are to use choice boards, learning contracts, and personalized learning agendas (Tomlinson, 1999). These instructional strategies target specific sets of standards for all students but allow students to travel a unique path to the mastery of those skills. Including differentiated instruction in the freshman academy and continuing the practice throughout the high school experience could help students increase their achievement and retention of the high school skills.

Study skills instruction is another potential addition to a freshman academy that could increase student achievement. Each eighth grade student in Tennessee is required to take the EXPLORE test, the first part of the ACT testing series (ACT, 2010). In addition to the academic tests, students are asked to identify areas of concern in their academic careers. One question addresses the need for help with study skills. In the school system containing the study sites, many eighth graders report needing help with study skills. If students themselves recognize a need for assistance in this area, implementing a study skills program in conjunction with the

freshman academy could certainly assist these students in achieving higher levels of academic success.

Additionally, because the first few weeks of the freshman year appear to be so crucial, schools may consider implementing interventions during the beginning of the year. Some examples might include parent nights, back to school fun activities for students, and initial meetings with teachers to help the students bond with the school. Events with a slightly more academic tone could be considered as well. Events focusing on specific academic needs like study skills, algebra, or writing could also strengthen the beginning of the freshman year.

Recommendations Regarding Male Students

For many years American males out performed American females in the realm of education. However, that is no longer the case. In fact, some research questions whether or not America's males are being educated as well as its females (Whitmire & Bailey, 2010). Males are more likely to drop out of high school than females and are currently less likely to attend college than females (Fulk, 2003). Nationally males earn 42% of bachelor's degrees, 31% of master's degrees, and 47% of PhD's (Whitmire & Bailey, 2010). With statistics like these, even though the No Child Left Behind Act (2001) does not currently consider gender a reporting subgroup, schools must be cognizant of the gender gap. Whitmire and Bailey (2010) also note that the gender gap does not exist independently of the racial and socioeconomic achievement gap that the legislation does track.

One reason boys have begun to fall behind in all academic areas is that all academic areas are dependent upon high levels of literacy. Boys do not seem to acquire literacy skills as easily or as early as girls. As a result, they begin to fall behind in terms of reading, while girls excel. Because of the different levels of success, boys begin to view school as a place for girls and

immerse themselves in other interests (Whitmire & Bailey, 2010). To combat this problem schools must begin literacy interventions for boys at the earliest stages of school. However, high schools can do their part at chipping away the façade that school is a place only for girls by incorporating the interests of males into the curriculum. Whitmire and Bailey (2010) also note that schools have taken extra steps to encourage female students to participate in science and math courses. In order to help males succeed in literacy skills, that same care must be extended toward helping males become interested in reading and writing skills.

Fulk (2003) also noted that a study of high school freshman revealed that the female students considered themselves to be more serious students than the male students. As a result interventions to assist males in achieving at higher rates would benefit the male population of a school. In an effort to encourage the increased achievement of all students, one school has chosen to assign upper class role models to each freshman homeroom. This program incorporates a male and a female role model for each homeroom (Fulk, 2003).

Making a concerted effort to balance the gender of the teaching staff is one way to help males feel that school is a place where males can succeed. The study site's freshman academy consists of seven teachers of whom three are male.

Another strategy for assisting boys to succeed is to simply set and maintain high expectations for all students (Whitmire & Bailey, 2010). Maintaining these high expectations for all students helps keep schools from lapsing into the attitudes of, "your son will catch up" or "your daughter is more of a reader than a scientist." The study site, as well as all Tennessee schools, has recently increased the rigor of the high school curriculum by taking part in the Tennessee Diploma project. This curriculum change does raise expectations and standards for all students.

Becuase the ninth grade is so crucial to the overall success of a student, schools seek to strengthen this year for all students. At this study site the freshman academy has established a positive relationship with increased achievement for male students. If this pattern were to continue, the likelihood for an increased graduation rate of males at this study site could increase.

Recommendations Regarding African American Students

The findings of the present study indicated that the white students who participated in the freshman academy had a significantly higher level of achievement as measured by grade point average than African American students who also participated in the freshman academy. This finding is consistent with the findings of other comparisons between white and African American students; Bruce et al. (2009) goes so far as to state that African American students are the most at risk for underachievement and in society. However, this study site, like many in the East Tennessee area, did not contain a significant population of African American students. Because of this relatively small number of students, it is increasingly difficult to implement interventions targeting these students. However, one recommendation is to seek interventions known to target African American students that are also best practices for all students.

Research suggests that disparity between African American and white students is evidenced because of a number of factors including "racism, poverty, family involvement, access to quality education, just educational practices, and personal and cultural identity development" (Bruce et al., 2009, pg. 450). In order to help African American students achieve at the same levels as their white classmates, schools could implement programs or interventions to address these needs. One such intervention could involve students participating in group sessions with one of the school's counselors. During these sessions, African American students should have the

opportunity to acknowledge factors they feel influenced them and their ability to succeed as students. According to Bruce et al. (2009) these group counseling sessions should provide students a venue for voicing their concerns about issues that contribute to the underachievement of African American students as a whole as well as at their particular school. Because of the African American community's traditional value of family and extended family, these group counseling sessions are a way of emulating the extended family within the school setting (Bruce et al., 2009). One Georgia school chose to implement a group counseling program as an academic intervention for African American students; they experienced favorable results from this effort (Bruce et al., 2009).

Another intervention designed to target African American students is to acknowledge and honor the diversity of the classroom. For years educators prided themselves on not seeing the color of their students in an effort to treat each student with equality. However, not seeing the color of the students in a school prevents the school from honoring the cultural heritage of its students. The No Child Left Behind Act (2001) requires schools to "see" their data by color; in order to implement interventions to assist racial groups, color must be acknowledged in the classroom. By respectfully acknowledging the diversity inside a classroom instead of attempting to ignore it, each culture represented gains value.

In addition, to improve the performance of African American students within a school, schools could choose to integrate staff development on this topic. Areas such as East Tennessee with relatively small African American populations may not see the need for this type of professional learning for educators; however, this area would have a unique need for this type of study. Because of the comparatively small African American population in the area, it is likely that there is also a small portion of the school faculty that is also African American. As a result,

African American students become in the minority even more. They not only have relatively few peers in the classroom, but they also are faced with authority figures unlike themselves as well. In order to help white teachers relate to students in this situation, staff development could be quite beneficial. One staff development opportunity would be a book study focusing on race. A suggested text for a study of this type would be *Courageous Conversations about Race* by Glenn Singleton and Curtis Linton (2005). This text encourages teachers and administrators to invite race into their classrooms to use as a resource instead of requiring students to leave their racial identities at the door.

A final suggestion for improving African American student performance is to employ African American teachers, counselors, administrators, coaches, or other school faculty when possible. Placing African American role models for African American students inside the school setting could create a network within the school for these students that fosters acceptance, understanding, and encouragement. Again, however, in a setting with a small number of African American students there also tends to be a small number of African American applicants for faculty positions, making this goal difficult to accomplish.

Recommendations for Further Research

The No Child Left Behind Act (2001) mandates 100% graduation rates by 2014. As schools struggle to meet this goal, many high schools have chosen to implement freshman academies as a means of supporting students through the crucial ninth grade year. Tennessee's adaptation of the America's Diploma project, the Tennessee Diploma project, requires higher achievement from students because they are now required to complete more rigorous course work. It is no longer enough for students to simply graduate from high school. They must also successfully complete demanding coursework to obtain their diploma. For this reason interventions to support high

school students should not only foster higher graduation rates but also high achievement. Suggestions for future research include but are not limited to the following:

1. This research provided an assessment of one high school which contains a limited African American population. Future studies should seek to include more schools to increase the sample size.
2. Because of the date of implementation of the freshman academy at the study site, only 1 year of data were available. Future studies should include subsequent years to help detect patterns in achievement at this school.
3. Because this study indicated a difference in the achievement of male students who participated in the academy and those who did not, an investigation that would continue to monitor the males at this high school could yield information that would identify an ongoing trend.
4. This study site's African American population was quite small. In order to explore data more, a mixed-method study would allow further insight into this population's performance.
5. This study used ACT and grade point average to determine academic achievement. In order to expand the study, data including but not limited to attendance, amount of advanced courses taken, college scholarship attainment, and college acceptance could be included in future studies as factors influencing academic success.
6. This study focuses on the academic achievement of the students. Further studies could also include an assessment of best practices used at the study site as compared to the list of best practices that surfaced in the research about the freshman academy model.

In conclusion, the researcher intended to compare the achievement of two groups of students, one that participated in a traditional freshman curriculum and one that participated in a freshman academy model. The researcher did not intend to appraise the quality of the different curricula available at the study site. As students continue to struggle to achieve at the increasingly high levels demanded of them, educators and community members question the interventions put in place to support these students. This researcher's goal was to assist in determining if current interventions yielded the desired higher achievement. By comparing subgroups of students who participated in each type of ninth grade experience, the researcher hoped to bring to light any discrepancies in achievement at this particular site. As the No Child Left Behind Act (2001) has illustrated, the total school average is no longer able to speak for the entire school population. Each subgroup must be given attention and support in order to increase its achievement and success.

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