ABSTRACT OF DISSERTATION

FRESHMAN ACADEMIES AND ACADEMIC ACHIEVEMENT BY RACE, GENDER, AND STUDENT ABILITY

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Doctor of Philosophy in Exceptional Learning

This dissertation examines the effects of Freshman Academies on first time freshman students in three Middle Tennessee public high schools. The study was conducted at three urban high schools, each school being one of the district's eight high school Small Learning Communities (SLC) grant recipients. The purpose of the grant was to aid schools in the compliance of the federal government's high school reform initiatives. This study focused on students from three of the district's high schools most equitable in overall learning environment, race groups, student achievement, and school community demographics. The predicted outcomes were an increase in academic achievement and performance for all students.

A descriptive, causal-comparative research design was used to determine what impact, if any, Freshman Academies would have on student achievement based on race, gender, and student ability levels. The expected outcome was that Freshman Academies would have a positive effect on overall student achievement. A four-way between-subjects multivariate analysis of variance (MANOVA) was used to test the main effect and interactions between all variables. The independent variables were Freshman Academies (treatment), race, gender, and student ability (based on eighth grade TCAP scores). The alpha level of $\alpha = .05$ was used as the criterion for statistical significance. Due to the large sample size (n = 1165), differences were expected to be significant and positive. However, effect size (partial η^2) would be crucial.

The study revealed the main effect, Freshman Academies, had an effect on student participants. However, the positive effect was in the absence of Freshman Academy participation. Additionally, when the variable interaction between Freshman Academy and race was further investigated, increases in academic achievement (mean scores) were minimal for Black students, and non-existent for White students.

It should be noted that this district's infrastructure provided the researcher with the addition of several limitations to the study. However, the opportunities for additional studies and other suggestions for improved implementation made in this paper could provide the district with valuable insight and future direction. The substantial grant funding received by this district yielded a minimal increase in student academic achievement as evidenced by these schools.

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A Dissertation

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by

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CERTIFICATE OF APPROVAL OF DISSERTATION

FRESHMAN ACADEMIES AND ACADEMIC ACHIEVEMENT

BY RACE, GENDER, AND

STUDENT ABILITY

by

Vanessa C. Barbour

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DEDICATION

This dissertation is initially dedicated to all of the single, non-parent, college re-entry females who are questioning whether or not their educational goals and dreams can still be achieved. In addition, I'm dedicating this dissertation to my nieces and nephews, Tia, Brandon, Donté, Tonieka, and Braxton. Further, I'm dedicating this dissertation to my mother and my guardian, the late Minnie Woods Barbour, and the late Julia Cumby Barbee. Their unconditional love is still a source of support and strength. Finally, my work is dedicated to those persons with whom I've crossed paths, who find themselves on either end of these scriptures: John 9:3, Isaiah 55:8-9, Genesis 50:20, and Romans 8:28.

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CHAPTER ONE

INTRODUCTION

The necessity of being competitive in a global society now challenges those who educate the citizens of our United States. Historically, it has been presumed that one of the goals or purposes of education is to undergird and ensure the economic foundation of our nation. The shift in job qualifications from a combination of academic skills to skill specific jobs has targeted high school reform as a national focus. Marshall and Tucker (1992) embrace the concept of education as the preeminent means of economic survival for the United States. And as a nation, our past commitment to public education has been viewed as the leading contributing factor to our success in the world. But not only has the United States been predicted to lose its superpower status, it may actually falter to the point where it is no longer a viable nation (Marshall and Tucker, 1992). Presently, we find ourselves challenged to become increasingly competitive in a global society. High school curricula should provide students with the skill base to be functional, competitive, and ready to meet the needs of today's society (Steinberg & Allen, 2002).

In 1983, the publication, *A Nation at Risk,* identified problems in the education system from low reading comprehension to high drop out rates (National Commission on Excellence in Education, 1983). In spite of the waves and styles of education reform, there is no consensus on what specific changes are needed, or how they are to be achieved. In essence, we tend to focus on the outcome(s) and not on any of the specific behaviors needed to create the change we desire. Dr. Shaun Kerry's (M.D.) views on our present system of education observes the fact that parent goals for education are not (and should not be) the same as corporation/corporate goals for education. Additionally, she states, "present day education is psychologically damaging to young people." Tougher standards only stifle creativity and the students' ability to "think" (Kerry, 2008).

Joel Spring (2004) takes a similar stance on the purposes and goals of public education, and raises the fundamental question, "Why do we have public schooling?" Spring then addresses three (3) paradigms describing the purpose for public schools: (1) to ensure our economic foundation, (2) to secure our democracy, and (3) to serve the needs of the economic elite while maintaining the capitalist foundation of the nation. Interestingly, our government currently spends in excess of $550 billion dollars per year on public education, yet students who are "home schooled" out perform those who are sitting in traditional classrooms (World Prosperity, Ltd, 2003).

Public consensus indicates that schools are essential to our success as a nation, but the opinion poll also reflects the unanimous public opinion that our school ratings continue to show very little progress (Hart & Winston, 2005). One outcome of the perceived immediate need for change has been an array of federal initiatives, programs, and strategies targeting each of the three tiers of public education. The public has historically viewed elementary schools and middle schools as high priorities for reform. The No Child Left Behind reform (U. S. Department of Education, 2001) is primarily directed towards K-8. Even so, Goals 2000 (National Education Goals Panel, 2000) and No Child Left Behind (2001) as reform initiatives have yet to yield the expected improvement.

Although focus has been on preschool and K-8 as priorities, high school reform has now become a national focus. While larger, comprehensive high schools were once viewed to be financially cost effective in course offerings (Architectural League of New York Public Education Association of the City of New York, 1992), smaller schools support academic achievement (Cotton, 1996). Smaller schools also address the emotional, psychological, and mental well being of students, as well as attendance, socialization (attitudes, behavior, and discipline), drop out rates, retention rates, academic equity, and other high school adjustment factors (Cotton, 1996; Cotton, 2000).

As a part of the No Child Left Behind Act (2001), the Small Learning Communities (SLC) program was authorized. This $142 million competitive grant is awarded to Local Education Agencies (LEAs) to help large high schools downsize in an effort to increase student achievement. Small Learning Communities are one strategy or model of down-sizing, whose mission is to provide a smaller, caring, more personalized learning environment (*U. S. Department of Education, nd*). The author of "Schools That Work: America's Most Innovative Public Education Programs," suggests that making schools smaller is the first step toward improving student outcomes (Wood, 1992).

Not unlike other urban school districts across the country, the Metropolitan Nashville Public Schools (MNPS) system's high schools are in need of restructuring. In a system that serves over 19,000 high school students, overall student achievement has been and still continues to be "low" performing (Tennessee.gov, School Trend Analysis, 2007). In 2007-2008, the district received grant funding for high school restructuring from the U. S. Department of Education. With a substantial $6.5 million dollar implementation grant, eight (8) of the district's comprehensive high schools implemented Small Learning Communities, specifically Freshman Academies. Freshman Academies are designed to increase student achievement, to enhance the learning environment, to provide eighth to ninth grade transitional support, to build positive relationships, and to aid with other high school adjustment factors associated with the "freshman experience." The MNPS system cites as its mission for its Small Learning Communities, "to provide a caring and personalized learning environment in which all students master the skills they need to succeed in the 21st century, acquire universal values, connect to post secondary and career opportunities and become successful, contributing members of the global community" (MNPS SLC Grant, 2007). The changes in school structure have been described as the "3Rs: "Relationships, Relevance, and

Rigor", of which "rigor" specifically focuses on incoming freshmen and school adjustment. While there is consensus that the SLC's Freshman Academies' components should positively affect student achievement, there is an insufficient number of studies to validate this investment of time and money. Even so, there is even less evidence that addresses the effect of Freshman Academies on other design factors, such as school environment, transitional support, student relationships, safety, relevance, etc. General areas of inquiry begin to surface: Will this strategy work for at-risk, low achieving students, or students with varying ability levels? Will it work for sub-groups of students (race, socioeconomic status, gender)? Does it work for large, urban districts, or for large, urban, comprehensive high schools? Questions such as these call for continued research on high school reform to improve student achievement. It is the aim of this study to address similar questions.

Significance of the Study

For all stakeholders, one essential goal of high school reform is to produce citizens who are ready to learn to function effectively in a global society. Whether for preparation for higher education or for skill specific job training, many high schools must improve their overall retention rates and graduation rates. Many ninth grade students have great difficulty making the transition into high school. Adjustments into high school can be overwhelming, academics can be negatively affected, and students can fall behind, and get caught in a cycle that often results in students dropping out of school (Gary, 2004). Various models of downsizing or small schools prove to be effective for disadvantaged students although these students are very likely to attend larger schools (Lee & Smith, 1996). Further, smaller schools have especially positive effects on low socioeconomic status (SES) students and minority students, by helping to reduce the negative

effects of poverty on student achievement (Cotton, 1996). Two components of the SLC grant's design are (1) to aid in the transition from eighth to ninth grade and (2) to provide assistance for students who are struggling academically (U. S. Department of Education, 2001).

The three (3) Davidson County, Tennessee public high schools selected for this study were among the eight (8) district high schools for which the district received grant funding. Due to the district's zoning plan, these three high schools were closest in similarity with regard to overall school characteristics and demographics (populations served). It should be noted that the three schools have vastly differing school communities (discussed in Chapter 3).

As a contribution to the body of knowledge, this study will further convey the need for continued longitudinal research on the effects of high school reform, high school restructuring, and downsizing. Specifically, this study will address the effects of Small Learning Communities, specifically Freshman Academies, on student race, gender, and the socioeconomic status of the students. The study will give insight into initiative's effects on at-risk students traditionally found in large, urban school district, since there is usually some relationship between minority, low socioeconomic status, and at-risk students found in urban settings. Finally, this study will assist the LEA in its overall evaluation of this reform initiative as it strives to find research-based strategies that improve student outcomes.

Research Questions

1. Did SLCs, (specifically Freshman Academies) at three (3) urban high schools make a difference in students' academic achievement when compared to previous non-FA freshman students at the three schools?

2. Is the difference in student achievement between FA and non-FA students, if any, the same for African-American and White students?
3. Is the difference in student achievement between FA and non-FA students, if any, the same for males and females?
4. Is the difference in student achievement between FA and non-FA students, if any, the same for all ability levels?
5. Is the difference in student achievement between FA and non-FA students, if any, the same for males and females across both race groups?
6. Is the difference in student achievement between FA and non-FA students, if any, the same for all ability levels across both race groups?
7. Is the difference in student achievement between FA and non-FA students, if any, the same for males and females across all ability levels?
8. Is the difference in student achievement between FA and non-FA students, if any, the same for males and females of different ability levels across both race groups?

Research Hypotheses

1. Student academic achievement at three urban high schools before Freshman Academies will be different from a comparable group after Freshman Academies.
2. The difference in student achievement between FA and non-FA students, if any, will not be the same for African-American and White students.
3. The difference in student achievement between FA and non-FA students, if any, will not be the same for males and females.

4. The difference in student achievement between FA and non-FA students, if any, will not be the same for all ability levels.
5. The difference in student achievement between FA and non-FA students, if any, will not be the same for males and females across both race groups.
6. The difference in student achievement between FA and non-FA students, if any, will not be the same for all ability levels across both race groups.
7. The difference in student achievement between FA and non-FA students, if any, will not be the same for males and females across all ability levels.
8. The difference in student achievement between FA and non-FA students, if any, will not be the same for males and females of different ability levels across both race groups.

Operational Definition of Terms

Ability Levels (for the purpose of this study) will be described as general groupings of student TCAP test performance (scores) into high, medium, and low categories based on a cut score or score range for each level.

Academic Achievement (for the purpose of this study) is a measure of the students' level of performance as assessed by GPA and English I End of Course (EOC) tests.

Academy is the term given to a Small Learning Community with a specific focus. Generally, the focus is a specific career. Academic and CTE teachers (Career and Technical Education) work cooperatively to integrate the curriculum using models that are appropriate to the needs of the academy. Students are enrolled in the *same* CTE courses, but other aspects of student schedules, such as academic courses may vary (mnps.org/page 21671).

Adequate Yearly Progress (AYP) is a measure of a school's or school system's ability to meet required state/federal benchmarks with specific performance standards from year to year (mnps.org/page 21671).

Career Clusters are groups of similar occupations and industries designed to help students, parents, and teachers organize career planning. There are sixteen (16) career clusters that provide a link between what is learned in school and the knowledge and skills required for a specific job (Tennessee.gov./CTE/pathways, 2007).

Corrective Action is the accountability term used to classify a school, school system, or local education agency that fails to make Adequate Yearly Progress (AYP) four years. Beginning the fifth year, the agency is classified as being "in correction action" (NCLB, Tennessee Accountability Chart, 2007).

Freshman (for the purpose of this study) is a student who is enrolled in a secondary school (high school) for the first time, and who takes courses in a minimum of three (3) of the four (4) core subjects (primarily English, Math, Science). The inclusion of Social Studies courses as a core subject is school site specific.

Freshman Academy (FA) is a transition program based largely on the research-based, results-oriented smaller learning community (SLC) concept. A Freshman Academy is essentially a small, autonomous academy for first-time ninth grade students. In addition to an academic or career focus, a FA focuses on the transition needs of ninth grade students. A Freshman Academy may address all levels of student learning or it may focus on one (or more) specific groups of students (Annenberg Institute for School Reform, 1999).

Gender is defined as male or female students.

Race is designated as White or Black/African American strictly for the purpose of this study.

Small Learning Community (SLC) is defined as large schools being divided into smaller groups of students and teachers. SLCs generally incorporate a theme as their focus. The theme may be based on grade level, academics, or a career. As a general rule, Small Learning Communities have between 80 to 120 students on a team, and/or a maximum of 400-500 students in a career cluster. SLCs do not work well with school populations below 900. Additionally, if an SLC is not career focused, career cluster information is still provided to students (Annenberg Institute for School Reform, 1999).

Socioeconomic Status (SES) refers to a cut level of family income level which qualifies school-age children for free or reduced lunch. This cut level is based on the U. S. Department of Agriculture (2006, FR Doc. E8-7475).

Student Outcomes (for the purpose of this study) are cognitive (ability, performance achievement), affective (attitudes, feelings), and physical/psychomotor (behaviors) indicators or outcomes.

TCAP is the Tennessee Comprehensive Assessment Program. The program includes state-mandated student assessment programs, state tests, testing schedules and procedures, and the appropriate use of state assessment results for the improvement of classroom instruction and student achievement in grades K-12 (Tennessee.gov. 2007).

TCAP Achievement Tests are given yearly to TN students in grades 2-8, and are customized to measure basic skills in reading and language arts, math, science, social studies (Tennessee.gov. 2007).

Transition is the process of moving from one organizational level of school to the next level (Oxley, 2004).

CHAPTER 2

REVIEW OF LITERATURE

Introduction

This chapter is a review of current literature directly related to this study. The following information reiterates the need for school reorganization, reform efforts, and high school restructuring. The research studies on the impact of small schools on student achievement further illustrate the demand and emphasis on high school restructuring. Small Learning Communities (SLCs), specifically, Freshman Academies (FAs) are but one strategy for downsizing schools. The literature suggests these models tend to produce positive academic outcomes for students. The literature further suggests other indirect advantages to students, such as making the transition into ninth grade smooth, as well as other positive non-academic outcomes. Finally, the literature suggests that effective implementation of an SLC model has a direct relationship to student success. This section helps to demonstrate the need for continued overall school reform and restructuring. Primarily, it demonstrates a positive relationship between Small Learning Communities and student outcomes.

Overview

According to Kerri Kerr (2000), "Today's large comprehensive high schools offer little assistance for incoming ninth graders, prompting many school and district leaders to consider innovative organizational practices and curriculum designed specifically for ninth graders" (p.1). This view can be expanded to include all high school students as they move from grade level to grade level toward graduation. SLCs, specifically, the freshman and career academies, provide

flexibility for those innovative organizational practices as well as various relevant curricula that is both grade level specific and career path specific. By attempting to provide all students with a supportive learning environment, and by diagnosing academic needs throughout high school, the education community "can work to promote an effortless transition and thrust students on a positive educational trajectory" (Kerr, 2002, pp. 9-10).

School Size and Student Achievement

While the smaller schools movement is still in its infancy, the earliest failures to reach any level of consensus among researchers prompted Cotton (1996) to compile a meta-analysis on school size, school climate, and student performance. In spite of the varying research findings, like many of the researchers referenced in the analysis, Cotton certainly concurs that "none of the research (not even her own) finds large schools superior to small schools in their achievements effects" (p. 5). Many investigators attributed the "rural setting" rather than the smallness of many schools as the beneficial element. But the research found smallness to be beneficial, regardless of the school setting. Cotton cites Walberg (1992) who, after discounting the positive effects of "rural ness," found high schools to produce higher achievement and "years of attained education after high school" (p. 6).

Outcomes of the Cotton (2000) study were in direct alignment with the Stockard and Mayberry (1992) study. With an emphasis on minority students and students of low SES, all researchers found the most positive effects of small schools to be on the achievement (levels) of these students. To illustrate the findings, Cotton stated, "These researchers have found that large schools have a more negative impact on minority and low SES students than on students in general" (p. 6).

One compelling study was conducted by Lee and Smith (1996), entitled, "High School Size: Which Works Best, and for Whom?" School size was the primary focus of the study, and the researchers examined whether or not student achievement (in Reading and Math) over one's high school career would be influenced by the size of the high school they attended. Three waves of data from the National Educational Longitudinal Study of 1988 were analyzed. According to Lee and Smith, the nested structure of the research questions in addition to the data structure of the NELS data suggested use of the hierarchical linear modeling methods approach to analysis. Only three research questions were asked and answered: (1) Which size high school is most effective for student learning, (2) Which size is most equitable, and (3) Are the effects of school size consistent across high schools defined by their social compositions? Respectively, Lee and Smith's findings are as follows:

1. With "effectiveness" defined as "learning," the ideal size for a high school is 600-900 students. Size effects on learning were found to be larger in the Math subject area. Schools with fewer than 600 students or more than 900 students were equally problematic, although they had different contributing factors.
2. With "equity" defined as the relationship between a student's SES and learning, learning is more equitable in very small high schools. Size effects on equity were found to be greater in the Reading subject area.
3. The impact of school size on learning is different for those schools with larger numbers of minority students, *and* students of low SES. The effect is stronger in schools educating these two groups of students. Size impacts disadvantaged students.

Lee and Smith are careful not to commit the post hoc fallacy by drawing conclusions about a causal relationship. Instead, they view size as an asset (or a hindrance), that, when combined with other components can, in turn, enhance (or diminish) the student learning environment.

Howley and Bickel (2000) conducted a four-state study for The Rural School and Community Trust, a national non-profit organization dedicated to improving rural schools. This study, called The Matthew Project, examined academic effectiveness and equity effects of school size. However, this study hypothesizes that size mitigates poverty's influence on student achievement. It follows for Howley and Bickel that a school's ideal size should be contingent upon the school community's SES. The more impoverished the school's community, the smaller the school should be. While there was obviously some difference in the state-by-state data, the study findings were consistent across the states:

1. **Excellence indicator.** The impact of school size varied by SES level; size had a negative impact on achievement in impoverished schools, but a positive impact on achievement in affluent schools.
2. **Equity indicator.** There is little to no relationship between achievement and SES in smaller schools.

Smaller schools reduced the variance in achievement related to SES by 20% to 70%, with 30% to 50% being the average. Further, smaller schools significantly reduced the negative effect of poverty on student achievement.

While the restructuring emphasis is primarily on high schools, Howley and Bickel advocate reducing school size at the middle grades. It is here that students begin formulating the dropping out of school mentality. Difficulties with student transition into high school are well documented, and addressed later in this review of literature. If Howley and Bickel are accurate in their early identification of potential dropouts, it is imperative that the education community begin to focus on middle school restructuring in a most timely manner.

Steinberg and Allen (2002) also help to make the case for small schools by not viewing size alone as "a panacea" but as a foundation on which the kind of environment needed for higher

levels of student achievement can be created. Since large, urban school districts are relying on the well publicized "small schools yields high achievement levels" research, Steinberg and Allen make the case for small schools in the study's background section:

- Forty to fifty percent of schools do not have the capacity to hold and promote students from ninth to twelfth grade.
- Only 68% of students entering high school earn a standard high school diploma.
- In 1995, 29% of college freshmen had to take remedial courses; 40% of those in colleges with high minority enrollment.

While Steinberg and Allen offer additional strategies for personalizing high schools, the first strategy is simply to move from large to small.

Small Learning Communities and Student Achievement

Are smaller schools and learning communities the wave of the future? This question was debated by a panel of researchers at a forum sponsored by the American Youth Policy Forum (2000). While the proponents of large schools argue over added costs for physical facilities and redundant programs, the panel warns policymakers of the negative consequences of further school consolidation. While policymakers argue the declining costs per student when school size is increased, the panel states that the argument should be over the cost of a well-trained high school graduate. If school reform and restructuring is the national trend, the discussion should encompass *how* to create quality education in small learning communities, not whether they should be created. Panelist Michael Klonsky (2002) advocates, "Research has consistently supported

small schools for years. Policy makers are just now beginning to pay attention to the research in this field" (pp. 1-2).

Academic outcomes and Freshman Academies were the specific focus for Hendrix (2007). This study was conducted using two (2) Tennessee public high schools in two different counties. Hendrix referenced Antioch High School and The Metropolitan Davidson County School System in Nashville, TN (Davidson County is the setting for this research study, since the Antioch High School piloted this initiative in 2006). Hendrix primarily addressed the effects of a Freshman Academy on GPAs, Algebra I Gateway scores, core credits, total number of credits, and promotion rates. Using a causal-comparative design, Hendrix compared a FA class (n = 413) with a traditional ninth grade class (n = 208). Data were analyzed utilizing the unpaired t-test, the Mann-Whitney *U,* and Chi Square Tests. Significance was predetermined at the .05 level. The results of the study found statistically significant differences between the two groups. Students who participated in the FA outperformed the traditional ninth graders in the areas of: GPAs, Algebra I Gateway scores, and the number of core credits earned (They also had a lower number of discipline referrals). Hendrix's outcomes were aligned with McCombs (2003) who concluded, "Students' test scores are higher in FAs than in traditional ninth grade classes" (pp. 93-101). The Hendrix study also concurs with the assessment conducted by The Bill and Melinda Gates Foundation (2004). The Gates Foundation's finding revealed that students who participated in FAs did earn more core credits when compared to the non-FA participants. Further breakdown of Hendrix's study found Algebra I Gateway scores for females, males, White students in general, students of low SES, and students of high SES to be significantly higher in the FA than the Algebra I Gateway scores of students in the traditional class.

Hendrix concluded that the program design was the contributing factor to the performance of the students in the FA. Professional development (for teachers) focused on teaching in a FA,

needs of freshmen, empowered instructional teams, school culture and climate. Additionally, caring teachers who *chose* to teach in the FA, and freshmen *not* being in competition with upper classmen were some of the components of this program design that contributed to the overall academic success of the students.

In contrast to Hendrix's study, Cramer (2006) used a matching analysis to study outcomes of 20 large SLC high schools, compared with 38 non-SLC high schools in an effort to study the effects of SLC on student achievement. Cramer further used analysis of covariance to control for any remaining differences in students, any differences in school characteristics, and for prior academic achievement (The effects of SLC participation on student achievement are evaluated approximately three years after implementation). Contrary to many prior studies, Cramer found a combination of no effects and negative effects from the SLC schools. Although the SLC schools did increase in the area of student achievement, the non-SLC schools had greater increases, producing a statistically significant negative effect. The SLC schools were less effective than the non-SLC schools in increasing academic achievement.

The rigor of Cramer's study could account for the outcomes not being consistent with much of the prior research. However, Kemple (2001) and Wasley, Fine, King, Powell, Holland, Gladden, and Mosak (2000) conducted equally rigorous studies and had similar findings: SLCs have not produced positive effects on student academic achievement. The Cramer study aligns with the researchers who view school size as having more of an "indirect effect" on student learning and academic achievement (Cotton, 2001; Oxley, 2004).

The effectiveness of the Freshman Academy model on standardized test performance and academic achievement in English and Math was measured by Fraker (2006). Fraker compared students who participated in Year One of the FA, their test scores, and core course semester averages to freshman students who were at the same school the previous year who did not

participate in a Freshman Academy experience. Expectantly, findings indicated a significant difference in academic achievement of White FA students in Math (on the test). Surprisingly, special education FA students showed a significant increase in achievement on the language arts portion of the test. Unfortunately, the core course passing rates in English and Math for non-FA students were higher than for those students who participated in the program. Through a comparison of means, the data analysis indicated no overall significant impact on the academic achievement of FA students.

However, Fraker (2006) cautions that the education community should not reject this strategy without further investigation. With the knowledge that student achievement in high school is measured in terms of Adequate Yearly Progress in Math and English, and with the knowledge that schools are measured on the achievement of subgroups (gender, ethnicity, SES, and special education services), the strategy is deserving of further study. Looking for ways to account for the differences in the varying outcomes among subgroups can be advantageous to individual schools and school districts alike. While the literature suggests that SLCs are beneficial for minority students (Cotton, 1996), the findings in this study also suggest that the achievement gap between White students and other racial groups may be growing at rates and depths not yet formally assessed by the research community. As any new initiative is implemented, outcomes *may* be influenced by different overall expectations. Utilizing benchmark assessments or End of Course tests can help to alleviate the difference in expectations. In spite of the numerous initiatives, strategies, and programs implemented, there has yet to be found one (1) model that guarantees increased academic achievement in all settings or for all subgroups of students—one size does not fit all.

Findings from Rudes (2006) tend to muddy the waters when reviewing the literature on the effectiveness of SLCs and their impact on student achievement. While there were serious

limitations and/or confounding variables to this study (such as grant funded SLC schools, non grant-funded SLC schools, non-SLC schools, schools that utilized some type of an academy approach versus all schools that utilized some type of freshman transition program), Rudes sought to measure SLC impact on student academic achievement as measured by student performance on Florida's Comprehensive Assessment Test. There was found to be a statistically significant difference in mean school scores between these groups. While the SLC students showed significant academic achievement gains, the non-SLC students performed better than the SLC group on the majority of the subtests. Rudes attributes his findings to the implementation of the new SLC program, reduced numbers of ninth grade retentions, and higher at-risk populations for the SLC group.

Non-Academic Outcomes

Opinions regarding the critical components of SLCs vary from school to school and from school district to district. One common component is that of easing the transition from middle school to high school for ninth graders. The transition experience can be quite overwhelming for students and (can) adversely affect student achievement. Students often enter into environments that are large and hostile or aggressive. During this period, students can experience self-esteem issues, developmental changes, declining grades and overall school performance, poor attendance, an increase in negative behaviors, and fewer opportunities to participate in sports or extracurricular activities. Each of these factors can be further compounded by transitory student population, the changing demands of society, peer pressure, and the constantly growing income gap. These combined attributes place freshmen in the risk category more than any other grade level. Without a deliberate focus on student transition, freshmen tend to lag behind, fall through the cracks, and eventually drop out of school.

Transition

The efforts of one public high school principal to reverse a pattern of poor transition for freshmen were documented in Morton's (2005) case study. The principal's goal was to improve the quality of student transition into high school for entering ninth graders. Morton documented drop-out data, discipline referrals, attendance percentages, GPAs, and other state accountability measures. Then, using a qualitative approach, she adjacently analyzed the needs and abilities of freshmen upon entry to high school, the change in these needs while in ninth grade, activities planned and implemented to ease the transition into ninth grade, the leadership skills needed to establish a Freshman Academy, and the impact of the Freshman Academy on student achievement. Findings from each accountability measure at the end of the first year suggested that implementation of the Academy had been "worth the effort" (p.110). According to Morton (2005), "The first year was much more successful than the second year when changes in schedule and leadership compromised effective functioning. At the end of the second year of implementation, "hard data indicated positive improvements in most areas" (p.110).

While positive relationships between teachers and students were an important outcome from this study, so was the finding that teachers were taking students who were basically unprepared for high school, and moving them to higher levels of proficiency, as evidenced by accolades of being one of the top ten most improved schools in their state. Perhaps the most compelling outcome was in the area of leadership. The findings strongly suggested that, in order for any initiative or strategy to be successful over time, the impetus, the guiding force, the driving force must be the leader. While the study does not identify specific transition practices to be used, some structure and support is needed to aid freshmen in high school transition.

In an effort to better identify transition issues, Kerr's (2002) study, School Organization and its Effects on the Success of Freshmen, specifically addressed the types and effects of two restructuring practices aimed at promoting freshmen success. In a two part, quantitative and qualitative study, Kerr examined both Small Learning Communities *and* Interdisciplinary Teams. She predicted that schools using the highest level(s) of implementation (for either practice) would see the strongest effects. Kerr's study produced similar findings for both restructuring practices. Regarding outcomes over time, there was a relationship between the use of the SLC and improved student outcomes (There was also a relationship between the use of Interdisciplinary Teaming and improved student outcomes). The SLC data reported a decrease in drop-out rates, with the drop rate for the highest levels of implementation equaling nearly a two-thirds decrease. Promotion rates for SLC data reported a four (4) percentage point increase for schools with any level of implementation and an increase of sixteen (16) percentage points for schools with high levels of implementation. These findings suggest a strong link between the level and scope of implementation and student outcomes.

Stakeholders

A single-site case study by Baldwin (2006) found several non-academic outcomes for students, but more so for other stakeholders:

- The implementation of the SLC elevated expectations within both the school and community.

- Teachers revealed an increased level of professional collegiality (increase in the *perception* of support by administration, growth as professionals, and participation in decision-making).
- Parents felt a sense of relief that someone was looking out for their child at school.
- The school served as a model of successful high school reform throughout the district.
- Administrators who served as SLC coordinators experienced increased work loads, additional leadership responsibilities, and more demands on time.

The students who benefited most were those in SLC structures, rather than SLC strategies. They benefited from greater support in the areas of transitioning into high school, socialization, and a more positive attitude about school.

While the U.S. Department of Education required plans submitted for Federal SLC Cohort Six to include "wall-to-wall" implementation (CFDA #84.215L), phasing in the SLC one-year-at-a-time also produced benefits. It allowed time for ownership and action research, and teachers and other staff members were allowed time to learn new concepts, such as flexible scheduling models. However, the most glaring outcome was the academic benefit for African American students. The study reveals students who were in SLC structures showed a greater disparity than White students when comparing their counterparts not in SLC structures.

Implementation

Current research covers broad and varying aspects of Small Learning Communities. Within this body of research there exists a chasm due, in part, to the uniqueness, uncommon characteristics, resources, and specific needs of each school, district, cohort, or LEA, as they

attempt to maximize learning outcomes for students while being limited by associated restraints. One common aspect of SLCs at least mentioned in the research is that of program implementation. Valverde-Ulate (2004) discusses general issues of implementation of SLCs in urban high schools. Valverde-Ulate's study suggests that large, comprehensive high schools are out of favor for inner city learners. Positive student-teacher relationships are crucial to motivation and learning for racial and ethnic minority students. By virtue of size alone, it is presumed that SLCs foster such relationships and promote a greater sense of community. Research suggests the social environment of students is affected by the size of the school. So, smaller educational settings are of great interest among those interested in increasing positive student outcomes. Valverde-Ulate's study found that if SLCs are implemented correctly and provided with adequate support, they will benefit urban students.

In 2006, Degnan analyzed the implementation of an SLC in a large, urban, comprehensive high school. Degnan observed school organizational structure, instructional practices, and student transition into high school. While this study is described as a quantitative, descriptive study analyzing failures, attendance, and out-of-school suspensions, it is a case study and was multi-faceted. The factors that contribute to the successful implementation of the SLC were specifically addressed. Some of them include: a shared vision, high levels of collaboration, and professional development opportunities geared toward small schools. Degnan (2006) relates successful implementation to the indirect advantages for students and teachers as well. Successful implementations of SLCs foster a sense of belonging for students, and help to build positive relationships among teachers and peers.

In an effort to further study the creation of successful SLCs for both students and teachers, Febey (2006) examined teachers' professional relationships. While "smallness" is not the solution to the educational ills that affect today's schools, SLCs can yield improved student outcomes if

teachers have “a shared vision, high levels of collaboration (on instructional issues or students’ problems), and SLC oriented staff development” (p.158).

This study further emphasized professional relationships as a primary determinant of success when implementing SLCs. But before such relationships can flourish, other factors, such as SLC oriented leadership, the geographical placement of the SLC within the school building, and measures for student achievement must be in place first. Once these factors are in place, close relationships with colleagues and even closer relationships with students are probable. The benefits of successful implementation are many. However, Dewees (1999) cautions administrators and districts that the benefits of small schools will not be realized without full implementation.

Post Secondary Impact

What has been described as the “disconnect” from high school that large numbers of students are experiencing has serious, long term societal consequences. It stands to reason that dropouts would experience poorer mental, emotional, and physical health than would graduates. They would also be inclined to earn less money, and constitute a greater percentage of welfare recipients, the prison population, and juvenile justice cases. It would also stand to reason dropouts would cost more than graduates in social services, lost wages, and taxes. Since these implications for society are substantial, The California Partnership Academy SLC Model, one potential intervention, sought to analyze post-secondary influences that participation in a SLC environment impacts (Folan, 2005). This case study also analyzed the effects that community has on students participating in the academy setting. Utilizing one control and one treatment group of students, the goals of the study were to examine (1) the influences of community building activities on student outcomes, (2) how community building activities contributed to post-secondary efforts, and (3)

whether or not there existed any relationships between community and student perceptions of their own high school experiences.

As the research design for this descriptive case study, Folan utilized a positivist approach. The mean student age was 18.16 years (SD = .3932), with 285 males and 368 female participants in the study. Performance indicators were academic (GPA + a 3-year mean), behavior (suspensions + a calculate mean), and graduation outcome (nominal scale from 1 – 4). Frequency counts, percentages, Chi-Squares, t-tests, ANOVAs, Scheffe post hocs, means, and standard deviations were used to describe the data. Cronbach's alpha was used to test the reliability of the data.

In the areas of behavior and graduation, academy students experienced lower suspension rates than non-academy students. Additionally, graduation status was obtained by a larger number of academy students. Regarding post secondary efforts, the findings were:

- Higher incidences of majors (college) and employment (working) aligning with academy focuses/specialty areas; greater focus toward their future.
- Higher incidences of full time status enrollment in colleges.
- Of persons working, academy participants saw more connections between high school and present/future work; worked more hours and made more money; had higher rates of income/salaries; were able to get jobs more readily due to being familiar with the world of work.
- Academy students perceived a greater sense of community, so sense of community cannot be discounted as a contributing factor to student achievement.

It can be implied from this study that SLCs pave, rather than hinder, the pathway to each student's future. Further, a sense of community, whether present or perceived, can aid in overcoming the disconnect, the high school transition issues, as well as the societal obstacles that often hinder student success.

Contrary again, to much of the research, Cramer's (2006) study produced different outcomes in the area of post secondary impact. Cramer looked at preparation for post secondary education and employment, and again, the findings were "no effects and negative effects." In fact, the differences for SLC and non-SLC students for ". . . enrolling in post secondary education and employment outcomes in the year following graduation were not statistically significant despite large sample sizes" (pp. 115, 119, 124, 130-131). Cramer's findings are still aligned with Kemple (2001), who followed up with academy students four (4) years after graduation. Kemple (2004) found that SLCs did not have a significant impact on enrollment in post secondary education.

Summary

There is an abundance of initial evidence to support the findings on the benefits of smaller learning environments, such as an increased sense of belonging (Cotton, 1996), a decline in discipline problems (Raywid, 2000), and an increase in student attendance (Klonsky, 1998). With successful implementation, these benefits usually occur within a year or two after the size of the school/learning environment has been reduced. But change in and of itself is usually complex and difficult. Without exception, this process of changing schools to increase student achievement, or any new education model is not a simple task. It requires the carefully planned organization of various factors to make it work. More often than not, "school reform is increasingly implemented based on their perceived effectiveness *[sic]*" (Raywid, p. 2), and usually not according to any

standards of scientifically-based research. While it is essential that the decisions about which initiatives are best for change (and for policy) are influenced by research, it is equally essential to determine all necessary antecedents for change.

Simultaneously, the findings of current research studies are inconclusive. Current, cross-sectional studies are finding mixed results. More longitudinal research is needed. Cotton (1996) summarizes much of the literature by stating that about half of the studies find no significant difference in achievement levels of students when comparing small and large schools. Perhaps there are residual effects that have not yet surfaced. Earlier findings describe a definite relationship between SLCs, greater academic achievement in minority students, and in students who are socioeconomically disadvantaged. Small Learning Communities have even been described as a means to reduce the negative effects poverty has on student achievement (Howley, Strange, & Bickel, 2000). Studies by Fraker (2006) and Wasley, et al. (2001) are inconsistent with these earlier studies.

Perhaps John Dewey best describes the challenge we now face in restructuring our high schools. Dewey views "education as a social function" (Chapter 2). In *Democracy and Education: An Introduction to the Philosophy of Education,* (1916), Dewey writes:

> The chief importance of this foregoing statement of the educative process which goes on willy-nilly is to lead us to note that the only way in which adults consciously control the kind of education which the immature get is by controlling the environment in which they act, and hence think and feel. We never educate directly, but indirectly by means of the environment. Whether we permit chance environments to do the work, or whether we design environments for the purpose of making a great difference, any environment is a chance environment so far as its educative influence is concerned unless it has been deliberately regulated with

reference to its educative effect. An intelligent home differs from an unintelligent one chiefly in that the habits of life and intercourse which prevail are chosen, or at least colored, by the thought of their bearing upon the development of children. But schools remain, of course, the typical instance of environments framed with express reference to influencing the mental and moral disposition of their members (p.18).

CHAPTER THREE

METHODOLOGY

Introduction

In an effort to alleviate the achievement gap among students, the NCLB (2001) authorized a number of education initiatives including Small Learning Communities for U. S. high schools. Specifically, SLCs are designed to improve the academic achievement performance of all high school students. The students served by the Metropolitan Public School System of Nashville, Tennessee are among those students reported to be in need of improved academic performance. The purpose of this study was to determine whether SLCs, specifically Freshman Academies, made a difference in students' academic achievement at three urban high schools in middle Tennessee. The three schools were specifically chosen due to the district's zoning parameters, the similarities in student populations, the similarities in school characteristics, and the difference(s) in each school's community. The study addressed the issue of (1) whether or not a Freshman Academy made a difference in students' academic progress at the three schools, (2) whether any of the differences were attributed to race, gender, and/or student ability level, and (3) whether or not there was any evidence of variable interactions to further explain differences. The questions and hypotheses pertinent to this study were:

1. Did SLCs, (specifically Freshman Academies) at three (3) urban high schools make a difference in students' academic achievement when compared to previous non-FA students at the three schools?
2. Is the difference in student achievement between FA and non-FA students, if any, the same for African-American and White students?

3. Is the difference in student achievement between FA and non-FA students, if any, the same for males and females?
4. Is the difference in student achievement between FA and non-FA students, if any, the same for all ability levels?
5. Is the difference in student achievement between FA and non-FA students, if any, the same for males and females across both race groups?
6. Is the difference in student achievement between FA and non-FA students, if any, the same for all ability levels across both race groups?
7. Is the difference in student achievement between FA and non-FA students, if any, the same for males and females across all ability levels?
8. Is the difference in student achievement between FA and non-FA students, if any, the same for males and females of different ability levels across both race groups?

Research Hypotheses

1. Student academic achievement at three urban high schools before Freshman Academies will be different from a comparable group after Freshman Academies.
2. The difference in student achievement between FA and non-FA students, if any, will not be the same for African-American and White students.
3. The difference in student achievement between FA and non-FA students, if any, will not be the same for males and females.
4. The difference in student achievement between FA and non-FA students, if any, will not be the same for all ability levels.

5. The difference in student achievement between FA and non-FA students, if any, will not be the same for males and females across both race groups.
6. The difference in student achievement between FA and non-FA students, if any, will not be the same for all ability levels across both race groups.
7. The difference in student achievement between FA and non-FA students, if any, will not be the same for males and females across all ability levels.
8. The difference in student achievement between FA and non-FA students, if any, will not be the same for males and females of different ability levels across both race groups.

Procedures

The student learning outcomes for first time freshmen in three urban high schools were analyzed to determine the effects, if any, of SLCs, specifically Freshman Academies on student academic achievement. Descriptive student data was collected and organized in a spreadsheet for analysis. A comparison of freshmen participating in FAs was made against a similar group of non-FA freshmen one year earlier. Race, gender, and ability level analyses identified additional effects attributed to these variables.

Participants and Setting

The participants in this study referred to as the control group are students enrolled in ninth grade (for the first time) from each of the three schools for the school year 2006-2007, before the implementation of an SLC, specifically, a Freshman Academy. These participants were compared to the group of students enrolled in ninth grade for the first time from each of the three schools for

the school year 2007-2008. The treatment group was used to determine the effectiveness of the Freshman Academy after implementation. In spite of the racial composition of these schools as compared with other high schools in the district, and after much discussion, it was decided that groups would also be analyzed based on race. Additionally, it was determined that students participating in Low-Incident Special Education programs would not be a part of the study. Only students participating in Resource Special Education classes were originally included as a part of the study.

The general setting was an urban school district in middle Tennessee. The district serves more than 74, 000 students, with in excess of 19, 000 students in grades 9-12 occupying the fifteen comprehensive high school facilities. The system employs over 4,900 certificated teachers, with a 14.0 year-average teaching experience for high school teachers. The district's student ethnic composition consists of 3.13% Asian, 48.28% Black, 13% Hispanic, 0.16% Indian, 0.10% Pacific Island, and 35.33% White. The system serves over 7200 English Language Learners, and 69.6% of the student population receives Free or Reduced Lunch (MNPS Annual Report, 2006-2007). The district's AYP accountability status is at the "Corrective Action" level. The three schools selected for the study have low graduation rates, low attendance rates, high student mobility rates, and high rates of student disciplinary referrals, as evidenced by their AYP accountability status (reflected in the NCLB 2014 Goals, No Child Left Behind 2001). Two of the schools are being projected for Corrective Action, and the third school is participating in the State/LEA Reconstitution plan (TDOE, 2007). The three schools chosen for the study are referred to as Schools M, S, and W. The setting is also comprised of non-academic factors (see Table 3.1), community demographics (see Table 3.2), and professional staff characteristics (see Table 3.3) for each

TABLE 3.1 Individual School Composite

Factor by Percentages	School M	School S	School W
Discipline	50.7	77.0	-
Attendance	82.2	-	90.4
Mobility	56.2	50.0	57.8
Retention	28.1	29.7	23.0
On-Time Graduation	56.1	50.0	53.7
(Event) Drop-Out	8.4	-	4.3

- Information was taken from School Profile. Data was not reported consistently across district.

TABLE 3.2 School Community Demographics

Factor	School M	School S	School W
School Zone Pop.	32,700	38,943	30,766
Zone Size (sq. mi.)	-	11.9	110
Populous			
B	48.1	37.8	56
W	44.8	56.5	42
Mean Family Income			
<25K	41.9	31	47
26K – 49K	34.0	50	32
>50K	24.1	19	21
Private Schools in Area	-	-	3
Major Employers	-	-	UPS; Fed. Ex
Residents with School-Age Children by %	32.3	-	31.0

- Information was taken from School Profile. Data was not reported consistently across district.

TABLE 3.3 Faculty Degrees

Degree by %	School M	School S	School W
Bachelors	-	44.0	55.0
Masters	-	41.0	30.0
Masters+ or Ed. S	-	13.0	10.0
Doctorate	-	5.0	5.0
Total # Prof. Faculty	-	71	73

- Information was taken from School Profile. Data was not reported consistently across district.

school. While not addressed in this study, these factors may impact the effectiveness of Freshman Academies at the three schools, thereby affecting academic achievement for the students.

School M. School M houses approximately 1000 students, of whom 73.5% receive Free and Reduced Lunches. The demographic characteristics for School M are 80.8% Black and 15.7% White. Other ethnicities represent the remaining 3.5% of the population, but no group singly represents any more than 2.2% of the remaining population (MNPS School Profile, 2007).

School S. School S houses approximately 1,146 students, with 60% of the students being eligible for Free and Reduced Lunch. The ethnic composition for School S remains fairly constant at rates of 68.4% Black, 24% White, 2.4% Asian, 5.1% Hispanic, and 0.1% for all other ethnicities combined (MNPS School Profile, 2007).

School W. School W houses 1,094 students. Sixty-three percent (63%) of the students are enrolled in a Free or Reduced Lunch program. School W has been described as the most rural and least diverse high school in the district. Student demographics consist of 84.8% Black, 14% White, 1.0% Hispanic/Latino, and 0.2% Asian (MNPS School Profile, 2007).

Research Design

This study is a descriptive, causal-comparative research design, chosen to examine the possible relationship between the treatment, Freshman Academy versus no treatment with regard to race, gender, and ability levels as measured by the dependent variables**,** cumulative GPA and English I EOC test**.** The design determines and examines causes, reasons, and/or the main contributing factors for existing conditions in groups.

The causal-comparative research design can also be described as a between-subjects design. The design utilizes existing groups already discriminated by an independent variable.

Both groups of students were examined under FA (treatment) versus no FA (non treatment) conditions determined by year of attendance in the ninth grade.

Data Collection

Permission to conduct a research study using human subjects was obtained from the Office of Research at Tennessee Tech University prior to data collection (Human Subjects Permission Form, see Appendix A). Permission to conduct the study was obtained from the Metropolitan Nashville Public Schools System, Office of Assessment and Evaluation, prior to data collection (permission form, see Appendix B). The researcher analyzed students' data to answer each research question. The data was obtained from the Office of Assessment and Evaluation, Metropolitan Nashville Public Schools.

Data was placed into an EXCEL spreadsheet and labeled as follows:

Columns:

- School Identification/School Attended
- Student Identification Number
- Student Race (B/W)
- Gender
- Ability Pre-measure Score (eighth grade TCAP achievement test score)
- Achievement Score - English I EOC test
- Achievement Score – cumulative Grade Point Average
- FA/non-FA (for each school/year)
- Free and Reduced Lunch (F/RL)

Rows:

Each row consisted of a string of data for each participant.

Measurements and Instrumentations

Descriptive data obtained from the MNPS district's Office of Assessment and Evaluation for each student included student identification, school attended, race, gender, eighth grade TCAP achievement score, English I EOC test scores, cumulative grade-point average, FA/non-FA status, and Free and Reduced Lunch (F/RL) status. The eighth grade TCAP achievement test score was used to categorize students' ability levels. The TCAP achievement test is a part of the TN Comprehensive Assessment Program. The outcome measures were the English I EOC test and the grade-point average (GPA) at the end of the ninth grade year.

One can make a good argument for the content validity of a cumulative GPA. Content validity indicates the degree to which a measure adequately reflects or samples all the content students were expected to be taught and to learn. Because there were few, if any, other measures available, the cumulative GPA was used as the primary dependent measure and should be representative of the total content in all of the classes that ninth grade students were expected to be taught during their freshman year. Any one course or combination of courses might not contain enough items to establish content validity for a cumulative GPA. However, the sum total (grand average) of such a large number of items over an entire school year should adequately reflect the total content that should have been learned. After all, it is the average across all of the teacher constructed tests and other measures, such as special assignments or projects, over all the subject areas for an extended period of time (D. Larimore, personal communication, 2009).

In a similar fashion, an excellent argument for the reliability of a cumulative GPA can be made. Since to a great extent, reliability depends upon the number of items that a measure is based upon, a grade-point average should be extremely reliable. Because the GPA for a whole year could be viewed as a one year-long test with a huge number of items to be averaged, thereby producing a very stable/consistent mean (D. Larimore, personal communication, 2009).

Finally, high content validity could be argued for the English I EOC test. The developers of this test took great care to be certain that it adequately samples all the content students were expected to be taught and to learn for the English I for the entire school year. The English I EOC is a state mandated standardized test and was constructed based on the state content standards. By design, it should cover/sample the total content that ninth grade students were expected to be taught in their freshman year in English I class. State standardization would suggest that the items of the End-of-Course test have been brought into conformity with state English standards.

The state's EOC Technical Bulletin describes the process used to establish content validity for all of the district's 2007 - 2008 End of Course Tests (EOC). In the case of English I EOC, the purpose of test validation is not to validate the test itself, but rather to validate interpretations of the test scores for particular purpose or uses (p.21). The English I EOC test is being used to analyze the specific strengths and weaknesses of each student's achievement in the English content area. To ensure a high, positive correlation between instructional content (what should be taught) and test content (what the test covers), test developers aligned goals, skills, and standards, and English I curricula content. Further, the test developers utilized a multi-factor model to determine goodness of fit. For English I EOC, the Comparative Fit Index (CFI), where a value of > .90 indicates an acceptable fit, and the Root Mean Square Error of Approximation (RMSEA), where a value of < .05 indicates an acceptable fit were reported. The CFI was > or = .92. The RMSEA was < or = .037. These values suggest that only one construct accounted for all of the items in the

English I EOC test. Since this process was used with all of the district's EOC tests, divergent validity was also assessed. The correlations ranged between 0.51 and 0.64 suggesting that the individual students' scores on English I, Math Foundations II, and Physical Science subject tests – tests particular to first time freshman students – are related moderately.

As with the validity of all EOC tests, the Technical Manual describes the reliability of the all EOC tests. Cronbach's alpha was used for each form of the EOC test by subject (English I EOC was pertinent to this study). However, Kuder Richardson - 20 was used to determine the tests' internal consistency reliability. While an individual correlation coefficient for English I EOC was not available, the range of coefficients for all EOC tests was greater than or equal to 0.86, indicating that, with respect to reliability, the English I EOC performed satisfactorily.

Treatment Integrity

The Metropolitan Public Schools system implemented Freshman Academies beginning with the 2007-2008 academic school year. While there is no clear evidence of one specific SLC model chosen for these academies, the vision, goals, and principle components guiding each grant-participating LEA were required to be clearly published. The MNPS Smaller Learning Communities Goals are:

- All students will graduate with 21st Century skills and achievements.
- Schools will be personalized and decentralized.
- Curriculum and instruction will be more rigorous and relevant.
- Increase Involvement of Parents and Community.
- Students will be connected to post-secondary and career opportunities.

Each goal is supported by objectives, strategies for accomplishing the goals, and indicators of implementation (SLC School Implementation Manual, 2007). The district appointed Starr Herrman as the SLC Project Coordinator (MNPS, 2007). Herrman attempts to ensure that the district supports eight (8) principle components for each of the high schools participating in the grant: (1) common planning time for academy/team teachers, (2) Advisor/Advisee program (especially for freshmen), (3) professional development and other training for teachers, (4) school level, site specific implementation process support (yearly phase-in, wall-to-wall, etc.), (5) team/academy building proximity (a specific location within the school building), (6) recruitment of competent teachers, (7) and additional funding. The final component is "content rigor" which she verbally describes as a "non-negotiable" component.

Each high school selected a "Site-Coach" whose main job is that of building level implementation for each phase and component of the school's initiative. Site-Coaches obtained positions through a variety of means, with certification and tenure listed as the main criteria. Site-Coaches work with the system's project coordinator and local school administrators to plan and implement the high school redesign activities and initiatives.

The Site-Coaches developed the system's Mission statement, and received further training through conducting site-visits to existing Academies, through participating in leadership training such as the SLC 2007 Leadership Institute, and through studying various documents and research-based articles. They were responsible for making teacher participants aware of the professional development opportunities associated with FAs (SLCs), as well as scheduling and attending various professional development training opportunities. In at least one case, they were responsible for "selecting" teachers for the academy. Additionally, Site-Coaches were responsible for motivating Freshman Academy teachers, implementing freshmen transition activities,

maintaining the SLC budget, producing various reports for the district, assembling Advisor/Advisee training manuals, and ordering equipment.

Each school in the study is guided by the vision, goals, Site-Coaches, and principle components described. Hermann estimated that over the next three years, more than 36,000 students in the district will be affected by this High School Redesign. However, these factors can only contribute to successful outcomes for students to the extent the barriers to effective implementation within this district can be overcome.

Data Analysis/Statistical Procedures

A four-way between subjects factorial multivariate analysis of variance (MANOVA) was used to analyze the effects of the four independent variables (Freshman Academies, race, gender, and ability), on the dependent variables (achievement as measured by English I EOC test and grade-point average). This design procedure allowed the researcher to analyze the main effect and the interaction effects on English I EOC test and grade-point average of the four independent variables. As a future study, this design would allow the researcher to further detect any differences attributed to the schools attended. Data analysis program, SPSS 15.0 was used to perform the data analysis.

Data Screening and Testing Assumptions. Among the sample of 1,223 students, there were 191 Resource Special Education students. These students were not included in the analysis because the group variances were unequal with those of the regular education students. Additionally, after conducting a t-test for the two independent groups, the means for the two groups

TABLE 3.4 Free and Reduced Cost Lunch Status

Lunch Status	Frequency	Percent
Free Lunch	843	72.4
Reduced Cost Lunch	70	6.0
Missing Values	252	21.6
Total	1165	100.0

(on both GPA and English I EOC) were found to be significantly different from each other. A sample of 963 regular education students was obtained after screening the data for outliers (and after excluding the resource students).

The socioeconomic status variable was excluded from the analysis because the information available was unreliable. Table 3-4 shows the distribution of students between the categories of free lunch, reduced lunch cost, and the missing values. Free and reduced lunch eligibility is based on the socioeconomic status of the students' family. The missing values represent cases of students from homes with high socioeconomic status, students whose families were not eligible for free or reduced lunch, as well as students whose families did not apply for assistance. Since no further breakdown of these missing values was available, and because there was a huge disparity in the proportions of students in the categories of free, and reduced cost lunch, the variable could not be used in the analysis.

Normality of the dependent variables was tested using the Kolmogorov-Smirnov and Shapiro-Wilks tests of Normality. The distributions for both GPA and English EOC were significantly non-normal (see Table 3.5).

Homogeneity of variance-covariance was tested using Box's Test of equality of covariance matrices. The test indicated that the assumption of homoscedasticity was violated [F(123, 7942.32)

TABLE 3.5 Tests of Normality

Variable	Kolmogorov-Smirnov[a]			Shapiro-Wilks		
Dependent Measure	Statistic	df	Sig.	Statistic	df	Sig.
Ninth Grade GPA	.038	963	.002	.992	963	.000
English I 9th Grade Spring Scale Score	.051	963	.000	.992	963	.000

a. Lilliefors Significance Correction

= 1.420, *p* = .002]. When the assumption of homogeneity of variances is violated, Pillai's Trace is the test statistic to be used (Mertler and Vannatta, 2005). Using Levene's test to assess univariate homogeneity of variance, the assumption was violated for English EOC [F(7, 955) = 2.34, p = .008] but not for GPA [F(7, 955) = 1.88, p =.07].

Knowingly, all statistical procedures have underlying assumptions. However, in many cases, tests for these assumptions are said to be robust to violations. Simply stated, violations of these assumptions will not change the outcome or research conclusions in substantial means. In spite of violations of some of these assumptions in this study, outcomes and their implications are discussed in Chapters Four and Five.

CHAPTER FOUR

RESULTS

This study was guided by the following eight research questions:

1. Did SLCs, (specifically Freshman Academies) at three urban high schools make a difference in students' academic achievement when compared to previous non-SLC freshman students at the three schools?
2. Is the difference in student achievement between FA and non FA students, if any, the same for African-American and White students?
3. Is the difference in student achievement between FA and non FA students, if any, the same for males and females?
4. Is the difference in student achievement between FA and non FA students, if any, the same for all ability levels?
5. Is the difference in student achievement between FA and non FA students, if any, the same for males and females across both race groups?
6. Is the difference in student achievement between FA and non FA students, if any, the same for all ability levels across both race groups?
7. Is the difference in student achievement between FA and non FA students, if any, the same for males and females across all ability levels?
8. Is the difference in student achievement between FA and non FA students, if any, the same for males and females of different ability levels across both race groups?

Results

A four-way between subjects multivariate analysis of variance (MANOVA) was used to analyze the effects of the four independent variables (Freshman Academy/non-Freshman Academy, race, gender, and ability) on achievement (as measured by English I EOC test and grade-point average). The MANOVA results revealed significant differences among all of the main effects with the exception of gender as well as an interaction between Freshman Academy *and* race. Table 4-1 is the MANOVA summary table.

TABLE 4.1 MANOVA Summary Table

Effect	Pillai's Trace	F	Sig.
Freshman Academy	.008	3.752	.024
Race	.011	4.930	.007
Gender	.005	2.272	.104
Ability2	.265	27.934	.000
Freshman Academy * Race	.014	6.555	.001
Freshman Academy * Gender	.002	1.001	.368
Freshman Academy * Ability2	.009	.865	.565
Race * Gender	.005	2.098	.123
Race * Ability2	.017	1.592	.103
Gender * Ability2	.015	1.353	.197
Freshman Academy * Race * Gender	.001	.619	.539
Freshman Academy * Race * Ability2	.009	.872	.559
Freshman Academy * Gender * Ability2	.003	.241	.992
Race * Gender * Ability2	.018	1.654	.086
Freshman Academy * Race * Gender * Ability2	.004	.442	.896

Note: Pillai's Trace is the only multivariate statistic reported in this table because it is the one that is robust to violation of the assumption of homoscedasticity.

TABLE 4.2 Tests of Between Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Freshman Academy	Ninth Grade GPA	367.531	1	367.531	7.379	.007
	English I 9th Grade Spring Scale Score	102.974	1	102.974	.285	.593
Race	Ninth Grade GPA	49.210	1	49.210	.988	.320
	English I 9th Grade Spring Scale Score	3561.046	1	3561.046	9.869	.002
Gender	Ninth Grade GPA	154.604	1	154.604	3.104	.078
	English I 9th Grade Spring Scale Score	115.731	1	115.731	.321	.571
Ability2	Ninth Grade GPA	3732.107	5	746.421	14.986	.000
	English I 9th Grade Spring Scale Score	113144.227	5	22628.845	62.715	.000
Freshman Academy * Race	Ninth Grade GPA	620.747	1	620.747	12.463	.000
	English I 9th Grade Spring Scale Score	1320.964	1	1320.964	3.661	.056
Freshman Academy * Gender	Ninth Grade GPA	93.445	1	93.445	1.876	.171
	English I 9th Grade Spring Scale Score	221.549	1	221.549	.614	.433
Freshman Academy * Ability2	Ninth Grade GPA	125.838	5	25.168	.505	.772
	English I 9th Grade Spring Scale Score	1590.526	5	318.105	.882	.493
Race * Gender	Ninth Grade GPA	174.361	1	174.361	3.501	.062
	English I 9th Grade Spring Scale Score	704.599	1	704.599	1.953	.163
Race * Ability2	Ninth Grade GPA	331.279	5	66.256	1.330	.249
	English I 9th Grade Spring Scale Score	4294.110	5	858.822	2.380	.037

TABLE 4.2 Continued: Tests of Between Subjects Effects

Gender * Ability2	Ninth Grade GPA	379.355	5	75.871	1.523	.180
	English I 9th Grade Spring Scale Score	1438.092	5	287.618	.797	.552
Freshman Academy * Race * Gender	Ninth Grade GPA	61.572	1	61.572	1.236	.266
	English I 9th Grade Spring Scale Score	34.372	1	34.372	.095	.758
Freshman Academy * Race * Ability2	Ninth Grade GPA	104.192	5	20.838	.418	.836
	English I 9th Grade Spring Scale Score	1922.574	5	384.515	1.066	.378
Freshman Academy * Gender * Ability2	Ninth Grade GPA	96.856	5	19.371	.389	.857
	English I 9th Grade Spring Scale Score	324.330	5	64.866	.180	.970
Race * Gender * Ability2	Ninth Grade GPA	393.350	5	78.670	1.579	.163
	English I 9th Grade Spring Scale Score	2590.054	5	518.011	1.436	.209
Freshman Academy * Race * Gender * Ability2	Ninth Grade GPA	81.563	4	20.391	.409	.802
	English I 9th Grade Spring Scale Score	470.604	4	117.651	.326	.861
Error	Ninth Grade GPA	45623.711	916	49.808		
	English I 9th Grade Spring Scale Score	330513.638	916	360.823		

Research Question One

The MANOVA results revealed significant differences between the mean achievement of students who had the Freshman Academy and those who did not. The value for Pillai's Trace was significant (p= .024). T he univariate results further revealed that students who had the Freshman Academy had significantly lower GPAs [F(1,916) = 7.38, p= .007], than their counterparts who did not have the Freshman Academy. However, the variance explained was too small to be practically meaningful (partial η^2 = .008). There was no difference in terms of English I EOC [F(1,916) = .285, p= .593]. Figure 4-1 shows the main effect of Freshman Academy on GPA.

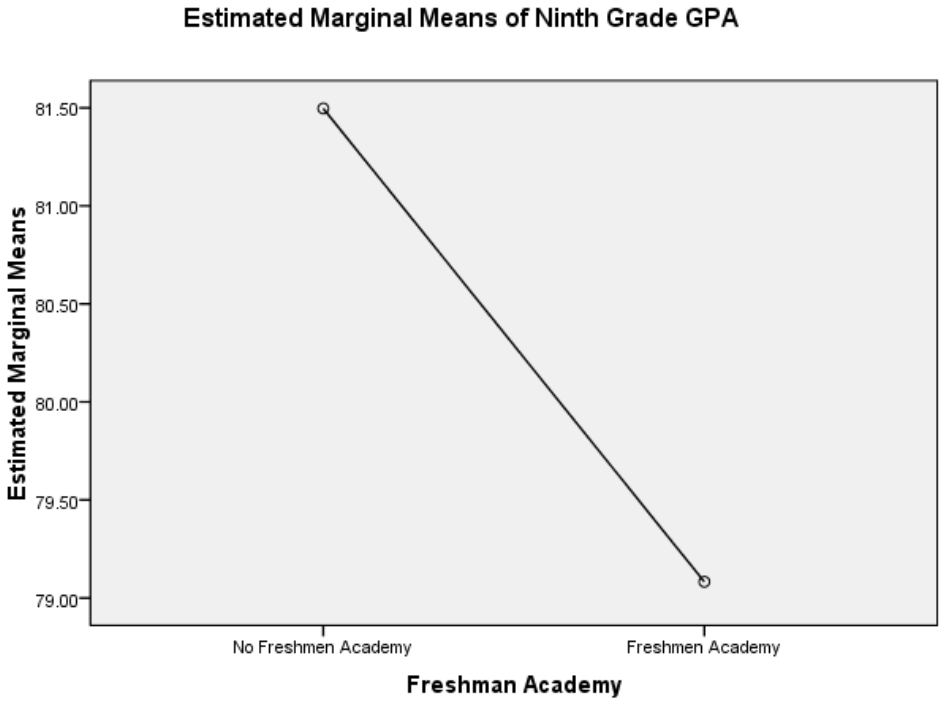

Figure 4-1: Main Effect of Freshman Academy on GPA

Research Question Two

There was a significant interaction between Freshman Academy and race on GPA [F(1,916) = 12.46, *p*= .000, partial η^2 = .013]. The interaction effect on English I EOC was almost significant too [F(1,916) = 3.66, *p*= .056, partial η^2 = .004]. Figure 4-2 shows that white students on average do better without the Freshman Academy, and the difference is quite steep. The opposite seems to be true for black students. The latter performed slightly better with the Freshman Academy. Without the academy, white students had a significantly higher GPA than the black students, and with the Freshman Academy, black students' average GPA was a little higher than that for white students.

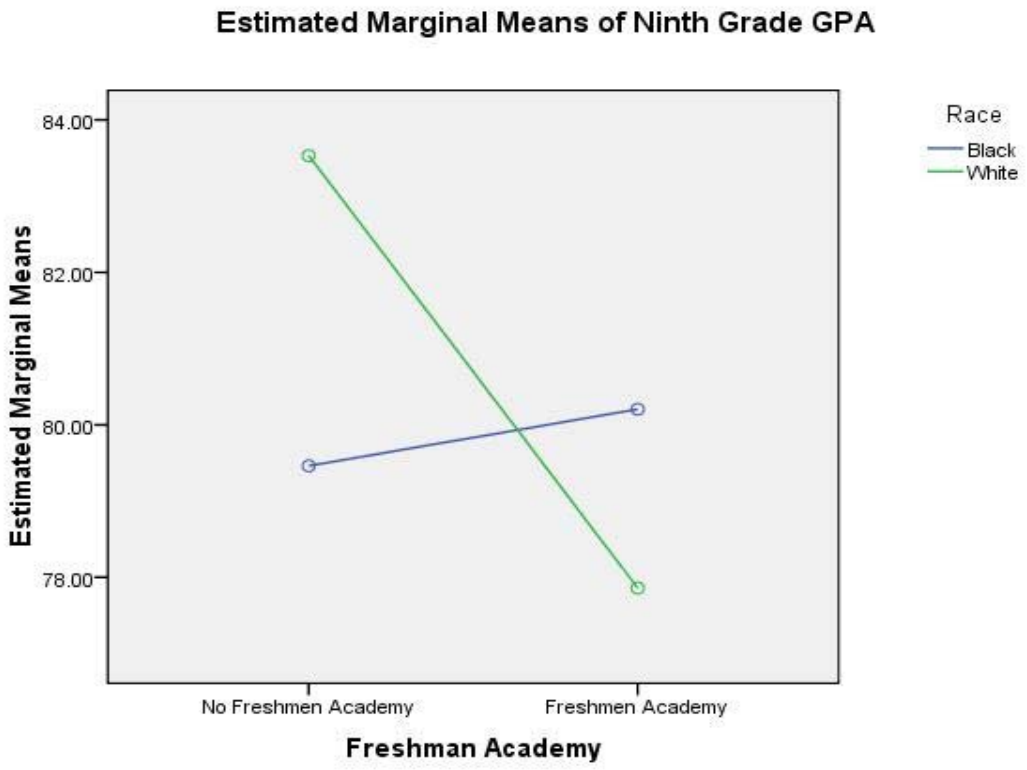

Figure 4-2: Interaction of Freshman Academy and Race on GPA

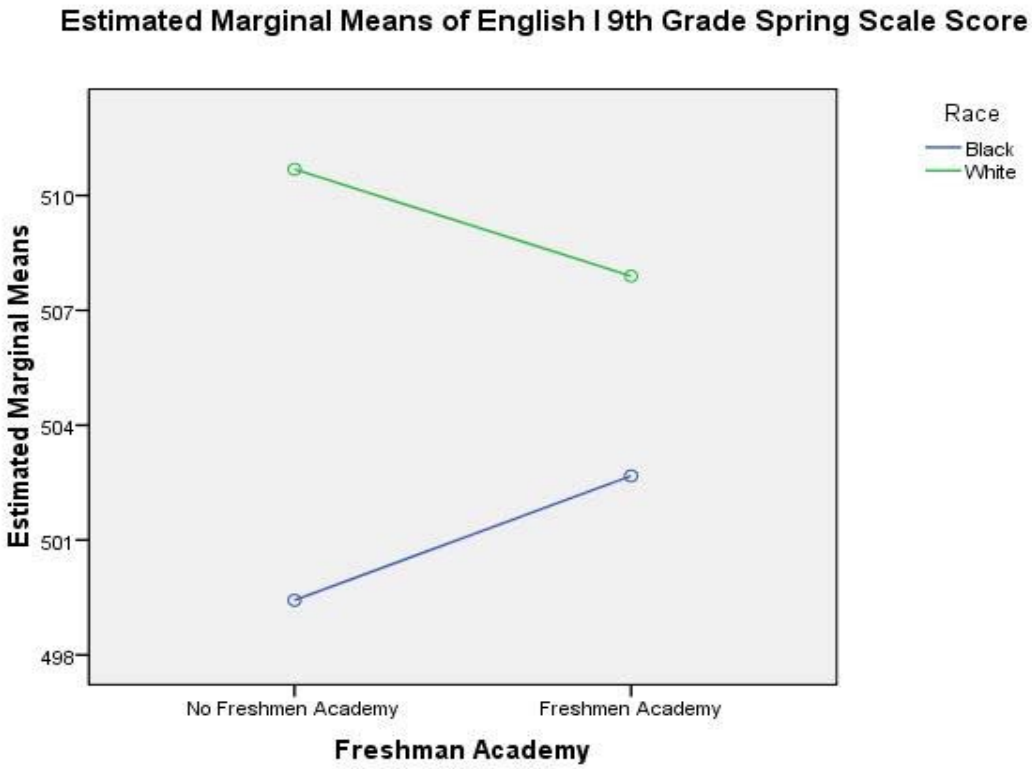

Figure 4-3: Interaction of Freshman Academy and Race on English I EOC

For English I EOC 2 (in Figure 4-3), white students had higher means than black students under both conditions, however, they did better without the Freshman Academy than with it. On the other hand, black students did better with the Freshman Academy than without it.

Research Questions Three through Eight

Hypotheses three through eight showed no statistical significance. There were thus neither significant interaction(s) between Freshman Academy and gender, nor between Freshman Academy and student ability on either of two dependent variables. For the actual probability values, see Tables 4-1 and 4-2.

CHAPTER FIVE

DISCUSSION, CONCLUSION, AND FUTURE DIRECTIONS

There were eight research hypotheses proposed in conjunction with the eight research questions for this study. The following discussion addresses each research hypothesis.

DISCUSSION

Discussion for Research Question One

This study revealed that freshman academies had a significant effect on student achievement on student GPA scores. Students who did not participate in freshman academies outperformed the students who participated in the academies; the means of non-Academy students were higher. Freshman academies only attributed to .008 of the variance (partial η^2 = .008) in student GPA. The univariate results (Table 4.2) revealed no significant difference for English I EOC. In part, this is similar to the findings in the literature (Hendrix, 2007), that Freshman Academies make a difference in student achievement. However, Cramer (2006) found a combination of no effects and negative effects for freshman academies. The findings of this study align with both Hendrix (2007) and Cramer (2006).

Discussion for Research Question Two

This study revealed that white students participating in Freshman Academies did not perform as well as the non-academy white students. The African-American students participating in the academies performed only slightly better than African-American students who did not participate. However, Witte and Witte state that "even the smallest differences (effects) sometimes merit detection" (p. 246). When white FA students were compared to African-American FA students, the African-American students had higher means. Conversely, without freshman academies, the GPA means of white students was significantly higher than those of African-American students. This would be a cause for further study due to the fact that it tends to imply that freshman academies can be detrimental to the white students at these three schools. This study supports the studies of Lee and Smith (1996) and Cotton (2000) which emphasize the relationships between larger schools and their impact on the academic achievement of minority and disadvantaged students. Freshman academies are one strategy for making large schools smaller, since freshman academies can be viewed as schools within schools.

Discussion for Research Questions Three through Eight

The study revealed no significant differences for research hypotheses three through eight. There was no interaction between Freshman Academy versus non-Freshman Academy students based on (1) gender or on (2) student ability. However, Cotton (2000) strongly advocates that the achievement gap between races (as well as gender) can be lessened through small school initiatives. Finally, Howley and Bickel (2000) reported that small school strategies have a greater impact on students with the lowest ability levels. For the research community to continue to look

for ways to account for the differences in the varying academic outcomes of subgroups would be more than advantageous to local schools and school districts alike.

Conclusion

Any outcome of this study that supports the freshman academies strategy and its overall positive effect on student academic achievement is minimal, at best. The literature indicates positive relationships between Freshman Academies and increased academic achievement for low-income, minority, and disadvantaged students. The findings in this study were not significantly aligned with the literature. Freshman academies had an overall significant effect on academic achievement. However, the positive effect or difference was (in) the absence of Freshman Academy participation. Further, Freshman Academies made a minimal difference for African-American students who participated in the academy compared to their peers who did not participate one year earlier.

Limitations

Best and Kahn (2006) describe limitations to a causal-comparative study as "those conditions beyond the control of the researcher that may place restrictions on the conclusions of the study and their application to other situations" (p. 39). The limitations of this study were:

1. Independent variables could not be manipulated. The participants were predetermined for treatment (FA) and control (non- FA) groups based on year of first-time attendance in the ninth grade.

2. Subjects could not be randomly or otherwise assigned to treatment groups. Students' race, gender, or ability level could not be randomly assigned.
3. Causes are often multiple and complex, rather than single and simple. The school district experienced major changes in its leadership and in its infrastructure, as evidenced by experiencing three different school superintendents in the last three school-years period. Two of the three schools involved in the study also experienced two different executive principals within the last three school years. Finally, within the past three school years, the school district's state accountability status was evaluated at the level of Corrective Action, and then to the state's Reconstitution Plan, for failure to make adequate AYP gains and benchmarks. Over the past three years, each of the schools involved in the study was evaluated and categorized at the Corrective Action or State Reconstitution status.

In addition, there were limitations that were specific to the school district. Since the first year of implementation comprised the treatment group in this study, allowances should be made simply for the "newness" of the initiative, and the accompanying challenges facing the implementation of any new initiative or strategy.

In keeping with the "newness" of the initiative, treatment integrity could also contribute to the limitations of the study. Perhaps one year is not long enough to determine just how thoroughly the initiative was implemented, and whether or not the initiative was implemented equitably across the three schools. Differences in the selection process for Site-Coaches, their experience levels and areas of expertise, along with a number of affective characteristics would impact Freshman Academy teachers, and at the least, cause for some level of "slippage" in this initiative.

Finally, at the time of data collection for the study, the district had been, and was in the process of launching multiple, simultaneous initiatives. It would be impossible to know whether the

positive or negative effects of the study could be contributed in whole to any of the variables of interest (Changas, 2008).

Further, the impact of the core components might cause a shift in GPA scores. This shift might have contributed to an increased emphasis on content rigor, resulting in a change in the criteria used by teachers when grading and evaluating students' work.

The experience levels of teachers would also be worthy of examination for possible limitations impacting this study. As a part of the district's practices, new teachers are quite often placed in low performing schools, such as the ones in this study. It is not uncommon for any of the three schools to experience faculty changes or turnovers equaling more than 50% in a given school year. These changes usually reflect experienced, veteran teachers transferring away from these schools, forcing the vacancies to be filled with new, inexperienced teachers.

Future Directions

High school reform must continue to be a priority for the American school systems. However, reform initiatives must be successfully implemented, monitored, and revised or modified in a timely manner. To allocate funds, implement initiatives, and to wait on data – without strategically placing stringent safeguards along the way - has proven to be unsuccessful in the past. And yet, as a nation, we continue to follow the same procedures, which produce the same results: (1) ineffective schools, (2) a wider academic achievement gap between White students and minority, low socioeconomic and disadvantaged students, and (3) citizens who are not globally competitive.

Smaller high school reform is not a new concept. When properly implemented, research as proven it to be quite effective. With negatively increasing school climates, threats to personal

safety, increasing accountability measures for student achievement being placed on classroom teachers, and increasing student needs, more dialogue - resulting in problem solving - is warranted. A two-way dialogue between researchers and practitioners, discussing research based practices that should work, and with classroom practitioners voicing concerns, needs, and areas of challenge could produce small school environments that are truly conducive to improving student achievement. However, the program cost in comparison to the academic improvement yield cannot be overlooked by this district. The cost for minimal gains among African-American students at these three schools was approximately $2.4 million dollars. White students showed no academic gains from participating in this initiative.

The literature review provided data regarding some of the non-academic outcomes for Freshman Academies and smaller schools. These outcomes seemingly have an indirect affect on student achievement; they are contributing factors. Data provided for this study suggests that the Local Education Agency could be more vigilant in its efforts to ensure positive outcomes for student for all education initiatives presently implemented. Perhaps a closer look at the process and components of implementation, along with a focus on treatment integrity would bring about insight for the local school district. However, it will still be difficult to determine whether the initiative as a whole contributed to any new outcomes, given the continual launching of multiple, simultaneous initiatives.

Several studies could evolve from this study. Data analysis by specific school would benefit new administrators. A study involving the 191 Special Education students omitted from this study would aid teachers in successfully implementing new Inclusion policies. More rigorous studies involving socioeconomic status, race, and school community would benefit all stakeholders, as would other factors, such as graduation rates, attendance rates, and student mobility rates. Perhaps the most compelling focus for the local LEA is supported by the Hendrix study (2007).

Hendrix studied two Tennessee public high schools in two different counties. Hendrix referenced Antioch High School and The Metropolitan Davidson County School System in Nashville, TN, the setting for this research study. Hendrix concluded that the program design (implementation) was the contributing factor to the performance of the students in the FA. Further, professional development (for teachers) should focus on teaching in a FA. Needs of freshman students, empowered instructional teams, school culture and climate should also be a non-negotiable component of the model. Perhaps caring, committed teachers *who choose* to teach in Freshman Academies will greatly contribute to students' overall academic success.

Wagner (2003) described the plight of our children by stating that many of our children who go to public schools are at risk of everything from leaving high school without having experienced the joy of learning, or of simply experiencing a caring adult. Their lives lack purpose, meaning, direction and hope. These children are the only future we have (pp. 150-151). Retired Metropolitan Nashville Public Schools administrator and educator, Pastor David Jones, Ed. D., said, "Parents don't send us their worst children and keep the other ones at home. They are sending us the best they've got. It is our job to send them back better than they came" (D. Jones, personal communication, 2000).

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Web Resources

http://annenberginstitute.org/index.html

http://Tennessee.gov/CTE/pathways

http://Tennessee.gov/education/nclbaccountabilitychart/2007

http://Tennessee.gov/education/statereconstitutionplan/2007.

http://Tennessee.gov/school/trend.analysis

http://www.ed.gov/programs/slcp/slccohort6.doc

http://www.mnps.org/ourschools/annualreport2006-2007

http://www.mnps.org/page21671.aspx

http://www.mnps.org/SLCgrant

http://state.tn.us/education/nclb/ayp

APPENDIX A

Consent Letter

APPENDIX B

IRB Human Subjects Approval

VITA

Vanessa Clarice Barbour was born in Nashville, Tennessee. She was educated in the Metropolitan Nashville Public Schools system for both her elementary and secondary education. In 1978, she graduated from the University of Tennessee at Knoxville with a Bachelor of Science degree in Education. Vanessa graduated with Honors, concentrating in Elementary Education. In 1986, Vanessa graduated from Trevecca Nazarene University with her Masters of Education degree, concentrating in Guidance and Counseling. Upon graduation from Trevecca, she continued her pursuit of education at Middle Tennessee State University. In 1988, Vanessa earned her Education Specialist degree in Curriculum and Instruction, while also completing concentration hours in Administration and Supervision.

Over her educational career, Vanessa has received State of Tennessee certification and/or licensure in Elementary Grades (1- 9), Guidance and Counseling (K-12), Administration and Supervision (K-12), State of Tennessee Career Ladder status: Level III Teacher, and Level III Administrator. In May, 2009, she completed 31 years in the Metropolitan Nashville Public School system, serving in various capacities over the 31 year period. Presently, Vanessa has completely fulfilled the requirements for, and is a candidate for the Doctor of Philosophy Degree in Exceptional Learning with a concentration in Program Planning and Evaluation at Tennessee Technological University in Cookeville, Tennessee.